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Subject Company: CureVac N.V.
(Commission File No. 001-39446)
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Prospectus

for the public offer to the shareholders of CureVac N.V.

of

15,061,575 newly registered American Depositary Shares
of BioNTech SE

by

BioNTech SE
(Mainz, Federal Republic of Germany)

in exchange for

all issued ordinary shares of

CureVac N.V.
(Tübingen, Federal Republic of Germany)

BioNTech SE has entered into a purchase agreement, dated as of June 12, 2025 (the "**Purchase Agreement**"), by and between BioNTech SE and CureVac N.V. ("**CureVac**"). Pursuant to the Purchase Agreement, BioNTech SE will commence an offer (the "**Offer**") to the shareholders of CureVac N.V. ("**CureVac**", and each of its shareholders, a "**CureVac Shareholder**") to acquire all issued ordinary shares with a par value of €0.12 per share of CureVac (Nasdaq Trading Symbol: CVAC) (the "**CureVac Shares**") tendered by CureVac Shareholders. In exchange for each tendered CureVac Share, the Company offers a number of newly registered American Depositary Shares of the Company (the "**Offer ADSs**") determined by multiplying the number of tendered CureVac Shares with the Exchange Ratio, taken to five decimals. The "**Exchange Ratio**" is determined by dividing $5.4641 by the BioNTech ADS VWAP. The "**BioNTech ADS VWAP**" in turn is determined as the volume-weighted average of the price per American Depositary Share of BioNTech SE, taken to four decimal places, over the period of ten consecutive trading days ending on, and including, the fifth trading day immediately preceding the time on which the initial Offer expires (as it may be extended), and is subject to the following collar adjustment: In the event the BioNTech ADS VWAP is greater than or equal to $126.55, the Exchange Ratio will be 0.04318 and in the event the BioNTech ADS VWAP is less than or equal to $84.37, the Exchange Ratio will be 0.06476. The resulting number of Offer ADSs to be received is referred to as the "**Offer Consideration**". For any fractional Offer ADSs, the tendering CureVac Shareholder will instead receive an amount in cash, without interest and less any applicable tax withholding equal to the product of (i) the fractional Offer ADS interest such shareholder otherwise would be entitled to and (ii) the BioNTech ADS VWAP, rounded to the nearest cent.

This prospectus (the "**Prospectus**") relates to the public offer of the Offer ADSs in Germany, Austria, France, Italy, the Netherlands and Spain to CureVac Shareholders on the terms of the Offer.

This Prospectus will be valid for twelve months following its approval, i.e., until October 20, 2026, provided that it is completed by any supplement required by Article 23 of Regulation (EU) 2017/1129 of the European Parliament and of the Council of 14 June 2017 on the prospectus to be published when securities are offered to the public or admitted to trading on a regulated market, as amended (the "**Prospectus Regulation**"). In accordance with the Prospectus Regulation, BioNTech SE is required to supplement this Prospectus for every significant new factor, material mistake or material inaccuracy relating to the information included in this Prospectus which may affect the assessment of the securities and which arises or is noted between the time when this Prospectus is approved and the closing of the offer period. The Offer commences on October 21, 2025, 4:00 p.m. (New York City time), and will initially remain open until 9:00 a.m. (New York City time) on December 3, 2025, unless it is extended or terminated in accordance with the Purchase Agreement. Any extension of the initial Offer will be followed by a public announcement of the extension no later than 9:00 a.m. (New York City time) on the next business day after the day on which the initial Offer was otherwise scheduled to expire. The latest time to which the initial Offer has been extended in accordance with the Purchase Agreement is referred to as the "**Expiration Time**". Subject to the satisfaction or waiver of the offer conditions, the Company will following the Expiration Time accept for exchange any validly tendered and not properly withdrawn CureVac Shares (such time of acceptance, the "**Acceptance**

Time"). Following the Acceptance Time, the Company will provide a subsequent offering period (the "**Subsequent Offering Period**") in accordance with Rule 14d-11 promulgated under the U.S. Securities Exchange Act of 1934, as amended of not less than 10 Business Days (calculated in accordance with Rule 14d-1(g)(3) promulgated under the U.S. Securities Exchange Act of 1934, as amended).

Accordingly, the validity of this Prospectus will expire upon the occurrence of the Expiration Time or, if the Subsequent Offering Period applies, the expiry of the Subsequent Offering Period, and no obligation to supplement this Prospectus will apply in the event of significant new factors, material mistakes or material inaccuracies after that date.

The date of the Prospectus is October 20, 2025.

TABLE OF CONTENTS

I.		**SUMMARY OF THE PROSPECTUS**	**S-1**
II.		**ZUSAMMENFASSUNG DES PROSPEKTS**	**S-8**
1		**RISK FACTORS**	**1**
	1.1	Risks Related to our COVID-19 Vaccine and the Commercialization of our Pipeline	1
	1.2	Risks Related to our Financial Condition and Capital Requirements	13
	1.3	Risks Related to our Business	23
	1.4	Risks Related to the Manufacturing of our COVID-19 Vaccine, our Product Candidates and Future Pipeline	38
	1.5	Risks Related to our Reliance on Third Parties	44
	1.6	Risks Related to Intellectual Property	51
	1.7	Risks Related to Government Regulation	68
	1.8	Risks Related to BioNTech Following the Transactions	82
	1.9	Risks Related to the Offer	84
	1.10	Risks Related to Ownership of BioNTech ADSs	88
2		**GENERAL INFORMATION**	**93**
	2.1	Responsibility for the Contents of the Prospectus	93
	2.2	Subject Matter of the Prospectus	93
	2.3	General Disclaimers; Validity of the Prospectus	94
	2.4	Competent Authority Approval	94
	2.5	Forward-Looking Statements	95
	2.6	Information from Third Parties	96
	2.7	Documents Available for Inspection	98
	2.8	Note Regarding the Presentation of Financial Information	99
	2.9	Note on Business Days, Currency	100
	2.10	Non-IFRS Measures/Alternative Performance Measures	100
3		**THE OFFER**	**103**
	3.1	Information on the Offer	106
	3.2	The Purchase Agreement	134
	3.3	The Tender and Support Agreements	159
	3.4	Material Interests of Persons Participating in the Offer	161
4		**INFORMATION ON THE OFFERED AMERICAN DEPOSITARY SHARES**	**164**
	4.1	Information on the Offered American Depositary Shares	164

	4.2	Information on the Underlying Ordinary Registered Shares	172
	4.3	Comparison of Rights of BioNTech ADS Holders and CureVac Shareholders	174
5		**PROCEEDS AND COSTS OF THE OFFER; REASONS FOR THE OFFER AND USE OF PROCEEDS**	**196**
	5.1	Proceeds and Costs of the Offer	196
	5.2	Reasons for the Offer; Use of Proceeds	196
6		**DILUTION**	**197**
7		**DIVIDEND POLICY**	**199**
8		**CAPITALIZATION AND INDEBTEDNESS**	**200**
	8.1	Capitalization	200
	8.2	Total Financial Indebtedness	201
	8.3	Lease Liabilities	201
	8.4	Indirect and Contingent Indebtedness	202
	8.5	Working Capital Statement	202
	8.6	No Significant Change	202
9		**OPERATING AND FINANCIAL REVIEW**	**203**
	9.1	Overview	203
	9.2	Selected Factors Affecting our Results of Operations and Financial Position	204
	9.3	Key Performance Indicators	209
	9.4	Description of Key Line Items from the Consolidated Statements of Profit or Loss	210
	9.5	Operating Results	210
	9.6	Liquidity and Capital Resources	220
	9.7	Financial Position	226
	9.8	Contingent Liabilities and Other Financial Commitments	231
	9.9	Quantitative and Qualitative Disclosures About Market Risk	232
	9.10	Significant Accounting Judgments, Estimates and Assumption	233
	9.11	Information from the Audited Annual Financial Statements	233
10		**PROFIT FORECAST**	**235**
	10.1	Profit Forecast Prepared by BioNTech SE for the Year Ending December 31, 2025	235
	10.2	Profit Forecast 2025 of Net Profit / (Loss)	235
	10.3	Explanatory Notes to the Profit Forecast 2025	235
11		**BUSINESS**	**240**
	11.1	Overview	240
	11.2	Our Strategy	240

	11.3	Our Products	244
	11.4	Sales, Marketing and Distribution	269
	11.5	Manufacturing	270
	11.6	Third-Party Collaborations	274
	11.7	Our Intellectual Property	285
	11.8	Cyber Security	296
	11.9	Our Competitive Landscape	297
	11.10	Property, Plant and Equipment	298
	11.11	Environmental, Social, and Governance (ESG)	301
	11.12	Legal and Administrative Proceedings	303
	11.13	Material Contracts	312
12		**REGULATORY ENVIRONMENT**	**313**
	12.1	Regulatory Overview	313
	12.2	Regulation and Procedures Governing Approval of Drug and Biological Products in the United States	313
	12.3	Regulation and Procedures Governing Approval of Medicinal Products in the European Union	322
	12.4	Coverage, Pricing and Reimbursement	327
	12.5	United Kingdom	329
	12.6	Greater China	330
	12.7	Türkiye	331
	12.8	Rest of the World Regulation	331
	12.9	Healthcare Law and Regulation	332
	12.10	Current and Future Healthcare Reform Legislation	333
	12.11	Packaging and Distribution in the United States and Other Jurisdictions	334
	12.12	Other Environmental, Health and Safety Laws and Regulations	335
	12.13	Regulation of Artificial Intelligence Systems and Models	335
	12.14	German Foreign Investment Screening Regime	338
13		**TRANSACTIONS AND LEGAL RELATIONSHIPS WITH RELATED PARTIES**	**340**
	13.1	Overview	340
	13.2	Transactions with Related Parties	340
14		**GENERAL INFORMATION ON THE COMPANY AND THE GROUP**	**343**
	14.1	Formation and Incorporation; Legal Form; Legal and Commercial Name; Registered Seat	343
	14.2	Financial Year and Duration of the Company	343

	14.3	Corporate Purpose of the Company	343
	14.4	Group Structure and Significant Subsidiaries	343
	14.5	Auditor	344
	14.6	Announcements	345
15		**SHAREHOLDER STRUCTURE**	**346**
16		**INFORMATION ON THE SHARE CAPITAL OF THE COMPANY AND APPLICABLE REGULATIONS**	**349**
	16.1	Share Capital	349
	16.2	Form, Certification and Transferability of Shares	349
	16.3	Changes in Our Share Capital During the Last Three Financial Years	349
	16.4	Future Changes to the Share Capital	349
	16.5	Pre-Emptive Rights	352
	16.6	Shareholders' Meetings and Voting Rights	352
	16.7	Claims against Directors and Shareholders' Derivative Actions	353
	16.8	Dividend Rights	353
	16.9	Authorization to Acquire and Sell Treasury Shares	353
	16.10	Squeeze-Out of Minority Shareholders	354
	16.11	Liquidation Rights	354
	16.12	Takeover Regulation	354
17		**GOVERNING BODIES AND EMPLOYEES**	**356**
	17.1	Overview	356
	17.2	Management Board	357
	17.3	Supervisory Board	360
	17.4	Code of Conduct and Conflicts of Interest Policy	368
	17.5	Compensation of the Members of the Management Board and the Supervisory Board	369
	17.6	Shareholdings of the Members of the Management Board and the Supervisory Board in the Company	382
	17.7	Certain Information on the Members of the Management Board and the Supervisory Board, Conflict of Interest	382
	17.8	German Corporate Governance Code	383
	17.9	BioNTech Employees and Employee Participation	384
18		**TAXATION WARNING AND MATERIAL TAX CONSEQUENCES**	**386**
	18.1	Material German Tax Considerations	386
	18.2	Material Dutch Tax Considerations	397
19		**FINANCIAL INFORMATION OF BIONTECH**	**F-B-1**

20		**FINANCIAL INFORMATION OF CUREVAC**	**F-C-1**
21		**THE PURCHASE AGREEMENT**	**P-1**
22		**FORM OF TENDER AND SUPPORT AGREEMENT**	**T-1**
23		**FORM OF DEPOSIT AGREEMENT**	**D-1**
24		**RECENT DEVELOPMENTS AND OUTLOOK**	**O-1**
	24.1	Recent Developments	O-1
	24.2	Outlook	O-1
25		**GLOSSARY**	**G-1**

I. SUMMARY OF THE PROSPECTUS

1.1 Introduction and Warnings

BioNTech SE, a European company (*Societas Europaea, SE*) with its registered seat in Mainz, Federal Republic of Germany ("**Germany**"), and its business address at An der Goldgrube 12, 55131 Mainz, Germany, legal entity identifier ("**LEI**") 894500UZJ5LG1F8J1U58 (the "**Company**", and together with its consolidated subsidiaries, "**BioNTech**", the "**BioNTech Group**", the "**Group**", "**we**", "**us**" and "**our**") has entered into a purchase agreement, dated as of June 12, 2025, (the "**Purchase Agreement**") by and between BioNTech SE and CureVac N.V. Pursuant to the Purchase Agreement, BioNTech SE will commence an offer (the "**Offer**") to the shareholders of CureVac N.V. ("**CureVac**", and each of its shareholders, a "**CureVac Shareholder**") to acquire all issued ordinary shares with a par value of €0.12 per share of CureVac (Nasdaq Trading Symbol: CVAC) (the "**CureVac Shares**") tendered by CureVac Shareholders. In exchange for each tendered CureVac Share, the Company offers a number of newly registered American Depositary Shares of the Company (the "**Offer ADSs**") determined by multiplying the number of tendered CureVac Shares with the Exchange Ratio, taken to five decimals. The "**Exchange Ratio**" is determined by dividing $5.4641 by the BioNTech ADS VWAP. The "**BioNTech ADS VWAP**" in turn is determined as the volume-weighted average of the price per BioNTech ADS (as defined below), taken to four decimal places, over the period of ten consecutive trading days ending on, and including, the fifth trading day immediately preceding the time on which the initial Offer expires (as it may be extended), and is subject to the following collar adjustment: In the event the BioNTech ADS VWAP is greater than or equal to $126.55, the Exchange Ratio will be 0.04318 and in the event the BioNTech ADS VWAP is less than or equal to $84.37, the Exchange Ratio will be 0.06476. The resulting number of Offer ADSs to be received is referred to as the "**Offer Consideration**". The Company will only deliver whole Offer ADSs. For any fractional Offer ADSs, the tendering CureVac Shareholder will instead receive an amount in cash, without interest and less any applicable tax withholding equal to the product of (i) the fractional Offer ADS interest such shareholder otherwise would be entitled to and (ii) the BioNTech ADS VWAP, rounded to the nearest cent.

The prospectus (the "**Prospectus**") relates to the public offer of the Offer ADSs in Germany, Austria, France, Italy, the Netherlands and Spain to the CureVac Shareholders on the terms of the Offer. In addition, the Offer ADSs are offered through a public offer in Switzerland in reliance on and pursuant to Article 54(2) of the Swiss Financial Services Act dated June 15, 2018.

The Company's American Depositary Shares (the "**American Depositary Shares**", "**ADSs**" or "**BioNTech ADSs**") are, and the Offer ADSs will be, listed on the Nasdaq Global Select Market of the Nasdaq Stock Market LLC ("**Nasdaq**") under the symbol "BNTX", and have the International Securities Identification Number ("**ISIN**") US09075V1026 and the German Securities Identification Number (*Wertpapierkennnummer*, "**WKN**") A2PSR2.

The Prospectus is dated October 20, 2025 and has been approved by the German Federal Financial Supervisory Authority (*Bundesanstalt für Finanzdienstleistungsaufsicht*, "**BaFin**") as competent authority under Regulation (EU) 2017/1129 ("**Prospectus Regulation**") on that date. BaFin can be contacted at Marie-Curie-Str. 24–28, 60439 Frankfurt am Main, Germany, by telephone +49 228 4108-0, or via its website www.bafin.de. BaFin has been requested by the Company to provide the Austrian supervisory authority *Österreichische Finanzmarktaufsicht*, the French supervisory authority *Autorité des marchés financiers*, the Dutch supervisory authority *Autoriteit Financiële Markten*, the Italian supervisory authority *Commissione Nazionale per le Società e la Borsa* and the Spanish supervisory authority *Comisión Nacional del Mercado de Valores* with a certificate of approval attesting that the Prospectus has been drawn up in accordance with the Prospectus Regulation, pursuant to Article 25 of the Prospectus Regulation.

This summary should be read as an introduction to the Prospectus. Any decision to invest in the Offer ADSs should be based on consideration of the Prospectus as a whole by the investor. Investors could lose all or part of their invested capital. Where a claim relating to the information contained in the Prospectus is brought before a court, the plaintiff investor might, under national law, have to bear the costs of translating the Prospectus before the legal proceedings are initiated. Civil liability attaches only to those persons who have tabled the summary including any translation thereof, but only where the summary is misleading, inaccurate, or inconsistent, when read together with the other parts of the Prospectus, or where it does not provide, when read together with the other parts of the Prospectus, key information in order to aid investors when considering whether to invest in the Offer ADSs.

1.2 Key Information on the Issuer

The following sections describe BioNTech SE, as the issuer of the newly issued ordinary registered shares represented by the Offer ADSs.

1.2.1 Who is the issuer of the securities?

Registration and Applicable Laws – The Company is incorporated as a European company (*Societas Europaea, SE*) in Germany and governed by German law, subject to the EU regulations on European companies, in particular the provisions of Council Regulation (EC) No. 2157/2001, as amended from time to time. The Company's domicile is Mainz, Germany, and it is registered with the commercial register (*Handelsregister*) of the local court (*Amtsgericht*) of Mainz, Germany, under number HRB 48720. The Company can be contacted at its business address: An der Goldgrube 12, 55131 Mainz, Germany, by telephone: +49 6131 9084-0, or via its website address: www.biontech.com. The Company's LEI is 894500UZJ5LG1F8J1U58.

Principal Activities – We believe we are a global next-generation immunotherapy company aiming to pioneer novel medicines against cancer, infectious diseases and other serious diseases. Since our founding in 2008, we have focused on harnessing the power of the immune system with the goal to address human diseases with unmet medical needs and major global health burdens. Our fully integrated model combines decades of research in immunology with a multi-technology innovation engine, Good Manufacturing Practice manufacturing, translational drug discovery, clinical development, commercial capabilities, computational medicine, data science and artificial intelligence, and machine learning, capabilities to discover, develop and commercialize our marketed product and product candidates. We have built a broad toolkit across multiple technology platforms, including a diverse range of potentially first-in-class therapeutic approaches. This includes investigational messenger ribonucleic acid, or mRNA immunotherapies, protein-based therapeutics (including targeted antibodies such as monoclonal, bispecific and antibody-drug conjugates) and cell therapies. We believe our multi-technology combination of platforms and product candidates positions us as pioneers in the field of individualized, patient-centric therapeutic approaches in oncology and infectious diseases. Our primary focus is oncology, where we endeavor to

address the full continuum of cancer from early to late disease stages. The root causes of cancer treatment failure are cancer heterogeneity and interindividual variability. Driven by random sequential mutations, every patient’s cancer is different and within one patient’s tumor, every cell is different. Addressing these two challenges is the core of our strategy. To augment anti-tumor activity and to counteract resistance

mechanisms, we seek to combine compounds with non-overlapping, potentially synergistic mechanisms of action. Our approach has generated a robust and diversified product candidate pipeline across a range of technologies in oncology and infectious disease, and has led to the approval of our first marketed product, *Comirnaty*.

Major Shareholders – AT Impf GmbH (the sole shareholder of which is ATHOS KG) holds 42.1% of the Company's ordinary shares and Medine GmbH (the sole shareholder of which is Prof. Ugur Sahin, M.D.) holds 16.7% of the shares or voting rights, with a further 0.5% of the shares held by Prof. Ugur Sahin, M.D. Pursuant to the deposit agreement governing the ADSs, the Company may instruct the ADSs' depositary to vote the shares that underly ADSs on uncontested agenda items for that portion of shares for which the depositary has not received specific voting instructions from the beneficial owners of ADSs. In prior shareholders' meetings of the Company, there were no contested agenda items, and AT Impf GmbH's (or, indirectly, ATHOS KG's) shareholding did not confer to it a majority of the votes cast at such meetings. Based solely on uncontested prior shareholders' meetings, if all Company-instructed votes were excluded from the voting tabulation, AT Impf GmbH (or, indirectly, ATHOS KG) would have voted a majority of the votes cast at such meetings and may therefore be considered to have *de facto* control over the Company.

Key Executive Directors – The members of the Company's management board (*Vorstand*) are Prof. Ugur Sahin, M.D. (Chief Executive Officer), Ramón Zapata-Gomez (Chief Financial Officer), Annemarie Hanekamp (Chief Commercial Officer), Sierk Poetting, Ph.D. (Chief Operating Officer), James Ryan, Ph.D. (Chief Legal Officer and Chief Business Officer) and Prof. Özlem Türeci, M.D. (Chief Medical Officer).

Auditors – The Company's auditor is EY GmbH & Co. KG Wirtschaftsprüfungsgesellschaft (formerly Ernst & Young GmbH Wirtschaftsprüfungsgesellschaft), Stuttgart, Germany, Cologne office, Börsenplatz 1, 50667 Cologne, Germany.

1.2.2 What is the key financial information regarding the issuer?

The unaudited interim condensed consolidated financial statements of the Company as of and for the three and six months ended June 30, 2025 were prepared by the Company in accordance with IFRS Accounting Standards as issued by the International Accounting Standards Board (IASB) applicable on interim financial reporting (IAS 34). The audited consolidated financial statements of the Company as of and for the year ended December 31, 2024 have been prepared by the Company in accordance with IFRS Accounting Standards as issued by the International Accounting Standards Board (IASB) and adopted by the European Union and the additional requirements of German commercial law pursuant to Section 315e para. 3 in conjunction with para. 1 of the German Commercial Code (*Handelsgesetzbuch*). The audited consolidated financial statements of the Company as of and for the years ended December 31, 2023 and December 31, 2022 have been prepared by the Company in accordance with International Financial Reporting Standards as adopted by the European Union and the additional requirements of German commercial law pursuant to Section 315e para. 3 in conjunction with para. 1 of the German Commercial Code (*Handelsgesetzbuch*).

In this summary of the Prospectus, where financial information is presented as "audited" in tables, this means that it was taken from the audited consolidated financial statements referred to above. Where financial information is presented in tables as "unaudited", this indicates that the financial information has not been taken from the audited consolidated financial statements referred to above but has been taken either from the unaudited interim condensed consolidated financial statements referred to above, or from the Company's accounting records or internal management reporting system, or has been calculated based on figures from the above-mentioned sources. Financial information presented in parentheses or preceded by a "minus" sign denotes a negative amount.

1.2.2.1 Key financial information from the consolidated statements of profit or loss

	Six months ended June 30,		Years ended December 31,		
	2025	2024	2024	2023	2022
(in millions €, unless otherwise indicated)	(unaudited)		(audited, unless otherwise indicated)		
Revenues	443.6	316.3	2,751.1	3,819.0	17,310.6
Period-on-period revenue growth (in %) (unaudited)	40.2	—	*(28.0)*	*(77.9)*	—
Operating profit / (loss)	(1,035.2)	(1,473.4)	(1,314.3)	690.4	12,642.7
Net profit / (loss)	(802.4)	(1,122.9)	(665.3)	930.3	9,434.4
Earnings / (Loss) per share					
Basic earnings / (loss) per share	*(3.33)*	*(4.67)*	*(2.77)*	*3.87*	*38.78*
Diluted earnings / (loss) per share	*(3.33)*	*(4.67)*	*(2.77)*	*3.83*	*37.77*

1.2.2.2 Key financial information from the consolidated statements of financial position

	As of June 30,	As of December 31,		
	2025	2024	2023	2022
(in millions €)	(unaudited)	(audited)		
Total assets	21,637.6	22,529.7	23,006.3	23,279.1
Total equity	18,505.1	19,411.1	20,245.9	20,055.6

1.2.2.3 Key financial information from the consolidated statements of cash flows

	Six months ended June 30,		Years ended December 31,		
	2025	2024	2024	2023	2022
(in millions €)	(unaudited)		(audited)		
Net cash flows from / (used in) operating activities	(634.2)	1,309.9	207.7	5,371.4	13,577.4
Net cash flows from / (used in) investing activities	1,182.4	(2,545.8)	(2,081.2)	(6,954.5)	(35.3)
Net cash flows used in financing activities	(27.1)	(30.7)	(45.9)	(778.6)	(1,419.3)
Cash and cash equivalents as of the end of the period	10,269.5	10,376.7	9,761.9	11,663.7	13,875.1

1.2.3 What are the key risks that are specific to the issuer?

An investment in the Offer ADSs is subject to a number of risks. The following risks are key risks specific to us:

- Demand for our COVID-19 vaccine, though difficult to predict, is expected to continue to decrease in the near future. Changing market dynamics will impact our revenues, which currently depends heavily on sales of our COVID-19 vaccine. Uncertainty in the demand for our COVID-19 vaccine and difficulties in targeting appropriate supply of our COVID-19 vaccines have in the past resulted, and may in the future result, in significant inventory write-downs and cancellations of contract manufacturing orders. Our business and financial condition could be materially affected by lowered COVID-19 vaccine revenues resulting from factors affecting demand for our COVID-19 vaccine, or by production and supply chain difficulties.
- The successful commercialization of our product candidates will depend in part on the extent to which governmental authorities, private health insurers and other third-party payors provide coverage and adequate reimbursement levels and implement pricing policies favorable to our product candidates. Failure to obtain or maintain coverage and adequate reimbursement for our product candidates, if approved, and/or delayed payments from government authorities could limit our ability to market those products and decrease our ability to generate revenues.
- If we are unable to continue to increase our marketing and sales capabilities on our own or through third parties, we may not be able to market and sell our product candidates effectively in the United States and other jurisdictions, if approved, or generate sufficient product sales revenue.
- Our operating results may fluctuate significantly, which makes our future operating results difficult to predict. If our operating results fall below expectations, the price of the ADSs representing our ordinary shares could decline.
- We may encounter difficulties in developing and expanding our company and managing such development and expansion, which could disrupt our operations.
- Our business is dependent on the successful development, regulatory approval and commercialization of product candidates based on our technology platforms. If we and our collaborators are unable to obtain approval for and effectively commercialize our product candidates for the treatment of patients in their intended indications, our business would be significantly harmed.
- Clinical development involves a lengthy and expensive process with an uncertain outcome, and delays can occur for a variety of reasons outside of our control. Clinical trials of our product candidates may be delayed, certain programs may never advance in the clinic or may be more costly to conduct than we anticipate, and we may have difficulty recruiting patients to participate in clinical trials, any of which can affect our ability to fund our company and would have a material adverse impact on our business.
- We and our collaborators or other contractors or consultants depend on information technology systems, and any failure of these systems could harm our business. Security breaches, loss of data and other disruptions could compromise sensitive information related to our business or prevent us from accessing critical information and expose us to liability, which could adversely affect our business, results of operations and financial condition.
- Our COVID-19 vaccine and product candidates are based on novel technologies and they may be complex and difficult to manufacture. We may encounter difficulties in manufacturing, product release, shelf life, testing, storage, supply chain management or shipping. If we or any of the third-party manufacturers we work with encounter such difficulties, our ability to supply materials for clinical trials or any approved product could be delayed or stopped.
- We rely on third parties in the conduct of significant aspects of our preclinical studies and clinical trials and intend to rely on third parties in the conduct of future clinical trials. If these third parties do not successfully carry out their contractual duties, fail to comply with applicable regulatory requirements or fail to meet expected deadlines, we may be unable to obtain regulatory approval for our product candidates.
- We and our collaborators rely on third parties to manufacture certain of our clinical product supplies, and we may have to rely on third parties to produce and process our product candidates, if approved.
- If our efforts to obtain, maintain, protect, defend and/or enforce the intellectual property related to our COVID-19 vaccine or our product candidates and technologies are not adequate, we may not be able to compete effectively in our market.
- The United States', the European or other comparable regulatory authorities may disagree with our regulatory plan and we may fail to obtain regulatory approval of our product candidates.
- Our COVID-19 vaccine and any other product candidates for which we receive approval or emergency use authorization are subject to continuing regulatory oversight, and we will be subject to ongoing regulatory obligations and continued regulatory review, which may result in significant additional expense. We may be subject to penalties if we fail to comply with regulatory requirements or experience unanticipated problems with our products or product candidates.

1.3 Key Information on the Securities

1.3.1 What are the main features of the securities?

The Prospectus relates to the Offer by the Company of 15,061,575 Offer ADSs in exchange for all issued CureVac Shares.

Number and Nature of ADSs	As of October 17, 2025, 101,103,358 ADSs were issued. Each ADSs represents one (1) ordinary registered share with no par value (*auf den Namen lautende Stückaktie*) of the Company, as described in section "*Underlying Shares*" below. The Offer ADSs will be ADSs of the same class. The Offer ADS will be registered and delivered by The Bank of New York Mellon as depositary. The Bank of New York Mellon is a banking corporation organized pursuant to the laws of the State of New York, whose registered office is at 240 Greenwich St, NY, NY 10286, United States of America (the "**United States**" or "**U.S.**"). The Bank of New York Mellon's LEI is WFLLPEPC7FZXENRZV188.
ISIN, and Denomination of the ADSs	The ADSs' ISIN is US09075V1026 and their Nasdaq Trading Symbol is "BNTX". The American Depositary Shares are denominated in U.S. dollars.

Rights Attached to the ADSs	The deposit agreement and any receipts created thereunder evidencing the American Depositary Shares are governed by the laws of the State of New York, United States. The deposit agreement provides for the following main features of the rights attached to the ADSs:
Voting Rights	ADS holders may instruct the depositary how to vote the number of deposited shares their ADSs represent. If the Company requests the depositary to solicit a holder's voting instructions (and the Company is not required to do so), the depositary will notify the holder of a shareholders' meeting and send or make voting materials available to it. Those materials will describe the matters to be voted on and explain how ADS holders may instruct the depositary how to vote. For instructions to be valid, they must reach the depositary by a date set by the depositary. The depositary will try, as far as practical, subject to the laws of the State of New York and the provisions of the Company's articles of association or similar documents, to vote or to have its agents vote the shares or other deposited securities as instructed by ADS holders. If the Company does not request the depositary to solicit a holder's voting instructions, a holder can still send voting instructions, and, in that case, the depositary may try to vote as instructed, but it is not required to do so. Except by instructing the depositary as described above, an ADS holder will not be able to exercise voting rights unless it surrenders its ADSs and withdraws the underlying ordinary shares. However, an ADS holder may not know about the shareholders' meeting enough in advance to withdraw the underlying ordinary shares.
Deposit and Withdrawal	The depositary will deliver ADSs if the ADS holder or its broker deposits shares or evidence of rights to receive shares with the custodian. Upon payment of its fees and expenses and of any taxes or charges, such as stamp taxes or stock transfer taxes or fees, the depositary will register the appropriate number of ADSs in the names the holder requests and will deliver the ADSs to or upon the order of the person or persons that made the deposit. An ADS holder may surrender its ADSs to the depositary for the purpose of withdrawal. Upon payment of its fees and expenses and of any taxes or charges, such as stamp taxes or stock transfer taxes or fees, the depositary will deliver the underlying ordinary shares and any other deposited securities underlying the ADSs to the ADS holder or a person the ADS holder designates at the office of the custodian. Or, at the ADS holder's request, risk and expense, the depositary will deliver the deposited securities at its office, if feasible. However, the depositary is not required to accept surrender of ADSs to the extent it would require delivery of a fraction of a deposited share or other security. The depositary may charge the ADS holder a fee and its expenses for instructing the custodian regarding delivery of deposited securities.
Dividend Rights and Other Distributions	The depositary has agreed to pay or distribute to ADS holders the cash dividends or other distributions it or the custodian receives on shares or other deposited securities, upon payment or deduction of its fees and expenses. ADS holders will receive these distributions in proportion to the number of shares their ADSs represent.
Underlying Shares	The shares underlying the ADSs are ordinary registered shares with no par value (*auf den Namen lautende Stückaktien*) with a notional amount attributable to each ordinary share of €1.00 in the Company's share capital and carry full dividend rights as from January 1, 2025, provided that the relevant shares shall carry full dividend rights as from January 1, 2026 if such new ordinary shares are issued after the Company's shareholders' meeting has resolved on the distribution of the accumulated profit for the financial year ended December 31, 2025. Their ISIN is: DE000A0V9BC4. The ordinary shares are denominated in euro. The ordinary shares resulting from the share capital increases which shall be implemented to issue the Company's shares that will underly the Offer ADSs shall be shares of the same class. Each of the ordinary registered shares of the Company shall entitle the shareholder to one vote at the Company's shareholders' meeting. The ordinary shares are subordinated to all other securities and claims in case of an insolvency of the Company. All shares entitle the shareholders to a share of any distributable liquidation proceeds or insolvency surpluses at the ratio of their proportion in the share capital. The shares are freely transferable in accordance with the legal requirements for registered shares (*Namensaktien*).
Transferability	American Depositary Shares evidenced by an American Depositary Receipt ("**ADR**"), when the ADR is properly endorsed or accompanied by proper instruments of transfer, are transferable as certificated registered securities under the laws of the State of New York. American Depositary Shares not evidenced by ADRs are transferable as uncertificated registered securities under the laws of the State of New York.
Dividend Policy	We do not anticipate paying any cash dividends on our ordinary shares in the foreseeable future. We intend to retain all available funds and any future earnings to fund the development and expansion of our business.

1.3.2 Where will the securities be traded?

The Offer ADSs will be listed on the Nasdaq Global Select Market under the symbol "BNTX". Application to trading of the Company's ordinary shares to any trading venue is not planned.

1.3.3 What are the key risks that are specific to the securities?

The following risk is a key risk specific to the ADSs:

- We have experienced and may continue to experience significant volatility in the market price of the BioNTech ADSs.

1.4 Key Information on the Offer of Securities to the Public and the Admission to Trading on a Regulated Market

1.4.1 Under which conditions and timetable can I invest in this security?

Under the Offer, the Company offers 15,061,575 Offer ADSs in exchange for all issued CureVac Shares. In exchange for each tendered CureVac Share, the Company offers a number of Offer ADSs determined by multiplying the number of tendered CureVac Shares with the Exchange Ratio, taken to five decimals. The Exchange Ratio is determined by dividing $5.4641 by the BioNTech ADS VWAP. The BioNTech ADS VWAP in turn

is determined as the volume-weighted average of the price per BioNTech ADS, taken to four decimal places, over the period of ten consecutive trading days ending on, and including, the fifth trading day immediately preceding the time on which the initial Offer expires (as it may be extended), and is subject to the following collar adjustment: In the event the BioNTech ADS VWAP is greater than or equal to $126.55, the Exchange Ratio will be 0.04318 and in the event the BioNTech ADS VWAP is less than or equal to $84.37, the Exchange Ratio will be 0.06476. The resulting number of Offer ADSs to be received is referred to as the Offer Consideration. From June 12, 2025, when BioNTech and CureVac announced the execution of the Purchase Agreement, through October 17, 2025, the BioNTech ADS VWAP was not greater than or equal to $126.55 or less than or equal to $84.37. Accordingly, the Offer Consideration at all times during that period represented a market value of $5.4641. However, were the BioNTech ADS VWAP to, for example, drop to $80 or go above $130 on the applicable calculation date, the market value of the Offer Consideration could be greater than or less than, respectively, $5.4641. Accordingly, as of the date of the Prospectus, CureVac Shareholders will not know, or be able to calculate, the exact market value of the consideration that they will receive upon closing of the Offer or completion of the post-offer reorganization. During the Offer, an indicative Exchange Ratio (calculated in the manner described in the Prospectus) will be

available at http://www.envisionreports.com/CureVacOffer, beginning on October 22, 2025. The Company will only deliver whole Offer ADSs. For any fractional Offer ADSs, the tendering CureVac Shareholder will instead receive an amount in cash, without interest and less any applicable tax withholding equal to the product of (i) the fractional Offer ADS interest such shareholder otherwise would be entitled to and (ii) the BioNTech ADS VWAP, rounded to the nearest cent.

The Offer is made in accordance with the terms of the Purchase Agreement and applicable rules and regulations. The Offer consists of (i) a public offer in the United States registered under the United States Securities Act of 1933, as amended pursuant to a registration statement on Form F-4 filed with the United States Securities and Exchange Commission ("**SEC**"), (ii) a public offer in Germany, Austria, France, Italy, the Netherlands and Spain and (iii) a public offer in the United Kingdom for which a UK prospectus exemption document has been published for the purposes of the Prospectus Regulation as it forms part of U.K. domestic law by virtue of the European Union (Withdrawal) Act 2018 (as amended). In addition, the Offer ADSs are offered through a public offer in Switzerland on the basis of the Prospectus in reliance on and pursuant to Article 54(2) of the Swiss Financial Services Act dated June 15, 2018.

1.4.1.1 Procedures for tendering

Upon commencement of the Offer, BioNTech will mail, or cause to be mailed, the offer to exchange, together with the letter of transmittal, to all CureVac Shareholders, in accordance with Rule 14d-4 under the U.S. Securities Exchange Act of 1934, as amended (the "**Exchange Act**"). If CureVac Shares are held through a broker, dealer, commercial bank, trust company, or other nominee, such person may receive such materials and may relay them to the shareholder in accordance with the arrangements governing that relationship.

- If CureVac Shares are directly registered in the shareholder's own name in CureVac's shareholders register, including if the shareholder is a record holder and holds shares in book-entry form on the books of CureVac's transfer agent, the following must be received by Computershare Trust Company, N.A. (the "**Exchange Agent**") prior to the Expiration Time: (i) the letter of transmittal, properly completed and duly executed, and (ii) any other documents required by the letter of transmittal.
- If CureVac Shares are held in "street" name and are being tendered by book-entry transfer into an account maintained at The Depository Trust Company ("**DTC**"), the following must be received by the Exchange Agent prior to the Expiration Time: (i) the letter of transmittal, properly completed and duly executed, or an agent's message; (ii) a book-entry confirmation from DTC; and (iii) any other required documents.
- If CureVac Shareholders hold their shares through a broker, dealer, commercial bank, trust company, or other nominee, they must contact their broker, dealer, commercial bank, trust company, or other nominee and give instructions that their shares be tendered.

The term "agent's message" means a message transmitted by DTC to, and received by, the Exchange Agent and forming a part of a book-entry confirmation, which states that DTC has received an express acknowledgment from the DTC participant tendering the CureVac Shares that are the subject of such book-entry confirmation, that such participant has received and agrees to be bound by the terms of the letter of transmittal and that the Company may enforce that agreement against such participant.

The Exchange Agent will establish an account with respect to the CureVac Shares at DTC for purposes of the Offer, and any eligible institution that is a participant in DTC may make book-entry delivery of the CureVac Shares by causing DTC to transfer such shares into the Exchange Agent's account at DTC in accordance with DTC's procedure for the transfer. Delivery of documents to DTC does not constitute delivery to the Exchange Agent.

Trustees, executors, administrators, guardians, attorneys-in-fact, officers of corporations, or others acting in a fiduciary or representative capacity who sign a letter of transmittal or any stock powers must indicate the capacity in which they are signing and must submit evidence of their power to act in that capacity unless waived by the Company.

The method of delivery of CureVac Shares and all other required documents, including delivery through DTC, is at the option and risk of the tendering CureVac Shareholder, and delivery will be deemed made only when actually received by the Exchange Agent.

1.4.1.2 Key Terms of the Offer

Initial Offer and Extension

The Offer will commence on October 21, 2025, 4:00 p.m. (New York City time), and will initially remain open until 9:00 a.m. (New York City time) on December 3, 2025. The Company may extend the initial Offer to such other date and time as may be agreed in writing by the Company and CureVac. The Company will also extend the initial Offer for any minimum period as required by the SEC or Nasdaq. Furthermore, if, at the scheduled Expiration Time, any of the offer conditions have not been satisfied or waived by the Company, the Company must extend the Offer on one or more occasions in consecutive periods of up to 10 business days each (or such other duration as may be agreed to by the Company and CureVac) in order to permit the satisfaction of such offer conditions. The Company may extend the Offer for up to 20 business days if it is not reasonably likely that, within such 10-business day extension period, a required antitrust approval will be obtained, or deemed to be obtained, and/or a legal restraint will not be removed. The Company is not required to extend the Offer on more than four occasions in consecutive periods of up to 10 business days each if the sole unsatisfied condition is the Minimum Condition (as defined below). The Company is not required to extend the Offer beyond March 12, 2026. If all conditions to the Offer, other than the required antitrust approvals, are satisfied or capable of being satisfied, the outside date of March 12, 2026 will be extended for up to two additional 90-day periods. Under the Purchase Agreement, if any of the resolutions of CureVac that are a condition to the closing of the Offer are not approved and adopted at a shareholder meeting, a subsequent shareholder meeting may be held to obtain the approval of the remaining outstanding resolutions.

Subsequent Offering Period	Following the Expiration Time and subject to the satisfaction or waiver of the offer conditions, the Company will accept for exchange any validly tendered CureVac Shares (such time, the "**Acceptance Time**"). Following the Acceptance Time, the Company will provide for a subsequent offering period in accordance with Rule 14d-11 promulgated under the Exchange Act of not less than 10 Business Days (calculated in accordance with Rule 14d-1(g)(3) promulgated under the Exchange Act) (the "**Subsequent Offering Period**").
Offer Conditions	The Company's obligation to acquire CureVac Shares validly tendered and not properly withdrawn pursuant to the Offer is subject to the satisfaction or waiver of various closing conditions, which are set forth in the Purchase Agreement. The offer conditions include, in addition to customary conditions: (i) CureVac Shares representing at least 80% of CureVac's share capital immediately prior to the Expiration Time have been validly tendered and not properly withdrawn immediately prior to the Expiration Time (the "**Minimum Condition**"); provided that the Company may reduce the Minimum Condition to 75% under certain circumstances; (ii) necessary antitrust and other regulatory approvals shall have been received, or be deemed to have been received and be in full force and effect; (iii) there having not been any fact, change, event, development, occurrence, or effect that, individually or in the aggregate, materially adversely affects, or would reasonably be expected to materially adversely affect, the business, assets, results of operations or condition of the Company and/or CureVac and their respective subsidiaries, taken as a whole (subject to certain exceptions); and (iv) the extraordinary general meeting of CureVac has adopted resolutions providing (a) for the appointment of the Company designees to CureVac's management board and supervisory board to replace the resigning members effective upon the closing of the Offer; (b) the approval of a post-offer reorganization; and (v) the Purchase Agreement not having been terminated in accordance with its terms.

Dilution	Based on the net asset value attributable to owners of the parent (net book value) in the consolidated statement of position of the Company as of June 30, 2025, 240,455,450 outstanding ordinary shares in the Company (i.e., excluding treasury shares) as of the date of the Prospectus, the (accretion) / dilution for new shareholders of the Company will be between approximately (6.0)% and approximately 38.2% and the accretion / (dilution) to existing shareholders of the Company will be between approximately (0.5)% and approximately 1.5%, in each case depending on the final Exchange Ratio. The shareholding percentage of BioNTech shareholders will decrease by between approximately 5.9% and approximately 4.0% (calculated on a basis excluding treasury shares), depending on the final Exchange Ratio.
Total Expenses	The costs related to the Offer are expected to total approximately €17.5 million.
Expenses Charged to Investors	CureVac Shareholders which are the record owner of their CureVac Shares and tender their shares directly to the Exchange Agent will not have to pay brokerage fees, commissions, or similar expenses. If CureVac Shares are owned through a broker, dealer, commercial bank, trust company, or other nominee and the CureVac Shareholder's broker, dealer, commercial bank, trust company, or other nominee tenders the CureVac Shares on such shareholders behalf, the broker, dealer, commercial bank, trust company, or nominee may charge a fee for doing so. CureVac Shareholders should consult their broker, dealer, commercial bank, trust company, or nominee to determine whether any charges will apply.

1.4.1.3 Anticipated timetable

The expected timetable for the Offer, which may be extended or shortened and remains subject to change, is as follows, assuming that the initial Offer will not be extended and that the conditions to closing of the Offer will be satisfied or waived and a Subsequent Offering Period of 10 business days applies:

October 20, 2025	Approval of the Prospectus by BaFin. Publication of the approved Prospectus on the website of BioNTech SE (https://investors.biontech.de under the "Investors — CureVac Tender Offer — CureVac Tender Offer Materials for EEA and Swiss Investors" section).
October 21, 2025, 4:00 p.m. (New York City time)	Commencement of the initial Offer.
November 25, 2025	Determination of the final Exchange Ratio.
By no later than November 26, 2025, 9:00 a.m. (New York City time)	Publication of the final Exchange Ratio by press release.
December 3, 2025, 9:00 a.m. (New York City time)	End of the initial Offer (Expiration Time).
By December 3, 2025, 6:00 p.m. (New York City time)	Occurrence of the Acceptance Time and publication of the result of the initial Offer on the same day.
December 4, 2025	Commencement of Subsequent Offering Period.
On or about December 4, 2025	Resolutions on the first share capital increase and the related share issuance for the ordinary shares that will underly the Offer ADSs for CureVac Shares to be acquired from CureVac Shareholders having tendered in the initial Offer.
On or about December 15, 2025	Registration of the Share Capital Increase with the Company's commercial register, delivery of the Offer ADSs to the Exchange Agent. The BioNTech ADSs are listed on Nasdaq as a class, and the Offer ADSs will be tradable upon their delivery.
On or about December 17, 2025	Onward delivery of the Offer ADSs and payment of any cash in lieu of fractional Offer ADSs to CureVac Shareholders having validly tendered CureVac Shares in the initial Offer.
December 18, 2025, 12:01 a.m. (New York City time)	End of Subsequent Offering Period and publication of the result of the Subsequent Offering Period on the same day.
On or about December 19, 2025	Resolutions on the second share capital increase and the related share issuance for the ordinary shares that will underly the Offer ADSs for CureVac Shares to be acquired from CureVac Shareholders having tendered in the Subsequent Offering Period.
On or about January 2, 2026	Registration of the Share Capital Increase with the Company's commercial register and delivery of the Offer ADSs to the Exchange Agent. The BioNTech ADSs are listed on Nasdaq as a class, and the Offer ADSs will be tradable upon their delivery.
On or about January 6, 2026	Onward delivery of the Offer ADSs and payment of any cash in lieu of fractional Offer ADSs to CureVac Shareholders having validly tendered CureVac Shares in the Subsequent Offering Period.

1.4.2 Who is the offeror and/or the person asking for admission to trading?

Offeror	The Company is the offeror of the Offer ADSs.
Admission to Trading	There will be no admission to trading on a regulated market within the meaning of Article 2 point (j) of the Prospectus Regulation. The Offer ADSs will be listed on the Nasdaq Global Select Market.

1.4.3 Why is this prospectus being produced?

Reasons for the Offer	The Company's boards believe that the acquisition of CureVac will have significant potential strategic benefits, including that the acquisition will support the global execution of the BioNTech's strategy to develop, manufacture, and commercialize mRNA-based medicines in oncology as well as expand BioNTech's capabilities to research, develop, manufacture, and commercialize mRNA-based medicines as a pan-tumor technology platform in oncology. As a result of the transaction, BioNTech will obtain complementary capabilities and proprietary technologies in target discovery, production, mRNA design, and delivery formulations. The transaction complements BioNTech's recent acquisitions in its other key pillars in oncology, including immunomodulators like bispecific antibodies and targeted therapies like antibody-drug conjugates.
Net Proceeds; Use of Proceeds	The Company intends to acquire all issued CureVac Shares under the Offer. The Company will not receive any proceeds from the Offer.

Tender and Support Agreements	Shareholders of CureVac representing approximately 57% of CureVac Shares, namely dievini Hopp BioTech holding GmbH & Co. KG and certain of its affiliates, Kreditanstalt für Wiederaufbau (KfW), Glaxo Group Limited and all members of CureVac's boards have entered into tender and support agreements pursuant to which they have agreed to (i) accept the Offer in respect of CureVac Shares held by them and (ii) vote in favor of all resolutions proposed by CureVac at its extraordinary general meetings resolving, among other things, on the post-offer reorganization and against certain proposals incompatible with the transactions contemplated by the Purchase Agreement, subject to the conditions and in accordance with the terms set forth therein. Other than these commitments, the Offer is not subject to any firm commitment.
Material Conflicts of Interest	There are no material conflicts of interest with respect to the Offer.

II. ZUSAMMENFASSUNG DES PROSPEKTS

1.1 Einleitung und Warnhinweise

BioNTech SE, eine Europäische Gesellschaft (*Societas Europaea, SE*) mit Sitz in Mainz, Bundesrepublik Deutschland („**Deutschland**“) und Geschäftsanschrift An der Goldgrube 12, 55131 Mainz, Deutschland, Legal Entity Identifier („**LEI**“) 894500UZJ5LG1F8J1U58 (die „**Gesellschaft**“, und gemeinsam mit ihren konsolidierten Tochtergesellschaften, “**BioNTech**“, die „**BioNTech-Gruppe**“, die „**Gruppe**“, „**wir**“, „**unser**“ und „**uns**“) hat einen Kaufvertrag (*Purchase Agreement*) abgeschlossen, datierend vom 12. Juni 2025, (der „**Kaufvertrag**“) zwischen der BioNTech SE und der CureVac N.V. Gemäß dem Kaufvertrag wird die BioNTech SE ein Angebot (das „**Angebot**“) an die Aktionäre der CureVac N.V. („**CureVac**“, und jeder Aktionär der CureVac, ein „**CureVac Aktionär**“) zum Erwerb aller ausgegebenen Stammaktien mit einem Nennwert von €0,12 je Aktie der CureVac (Nasdaq Trading Symbol: CVAC) (die „**CureVac-Aktien**“) unterbreiten, die von CureVac Aktionären angedient wurden. Im Tausch für jede angediente CureVac-Aktie bietet die Gesellschaft eine Anzahl von neu zu registrierenden American Depositary Shares der Gesellschaft (die „**Angebots-ADS**“), die durch Multiplikation der Anzahl angedienter CureVac-Aktien mit dem Umtauschverhältnis bestimmt wird, gerundet auf fünf Dezimalstellen. Das „**Umtauschverhältnis**“ wird bestimmt, indem $5,4641 durch den BioNTech-ADS-VWAP dividiert werden. Der „**BioNTech-ADS-VWAP**“ wiederum ist der volumen-gewichtete Durchschnittspreis für American Depositary Shares (wie nachfolgend definiert) der BioNTech SE, gerundet auf vier Dezimalstellen, über den Zeitraum von zehn aufeinanderfolgenden Handelstagen endend an dem fünften Handelstag (einschließlich) unmittelbar vor dem Zeitpunkt, an dem das ursprüngliche Angebot abläuft (wie gegebenenfalls verlängert), und unterliegt folgender Collar-Anpassung: In dem Fall, dass der BioNTech-ADS-VWAP größer oder gleich $126,55 ist, beträgt das Umtauschverhältnis 0,04318 und in dem Fall, dass der BioNTech-ADS-VWAP kleiner oder gleich $84,37 ist, beträgt das Umtauschverhältnis 0,06476. Die sich ergebende Anzahl von Angebots-ADSs die erhalten wird, wird als „**Angebotsgegenleistung**“ bezeichnet. Die Gesellschaft wird nur volle Angebots-ADSs liefern. Anstelle von Teil-Angebots-ADS erhält ein andienender CureVac-Aktionär einen Ausgleich in bar in Höhe des Produkts (i) der Teil-Angebots-ADS die der Aktionär ansonsten erhalten würde, und (ii) dem BioNTech-ADS-VWAP, aufgerundet auf den nächsten Cent, ohne Zinsen und vorbehaltlich etwaiger Steuerabzüge.

Der Prospekt (der „**Prospekt**“) bezieht sich auf das öffentliche Angebot der Angebots-ADS in Deutschland, Österreich, Frankreich, Italien, den Niederlanden und Spanien an die CureVac-Aktionäre zu den Bedingungen des Angebots. Zusätzlich werden die Angebots-ADSs auch durch ein öffentliches Angebot in der Schweiz, gestützt auf und in Anwendung von Artikel 54 Absatz 2 des Schweizerischen Finanzdienstleistungsgesetzes vom 15. Juni 2018, angeboten.

Die American Depositary Shares der Gesellschaft (die „**American Depositary Shares**“, „**ADS**“ oder „**BioNTech-ADS**“) sind, und die Angebots-ADS werden, im Nasdaq Global Select Market der Nasdaq Stock Market LLC („**Nasdaq**“) unter dem Symbol „BNTX“ gehandelt und haben die Internationale Wertpapier-Identifikationsnummer (International Securities Identification Number („**ISIN**“)) US09075V1026 und die Wertpapierkennnummer („**WKN**“): A2PSR2.

Der Prospekt datiert vom 20. Oktober 2025 und wurde von der Bundesanstalt für Finanzdienstleistungsaufsicht („**BaFin**“) als zuständiger Behörde gemäß Verordnung (EU) 2017/1129 (“**Prospektverordnung**”) an diesem Tag gebilligt. Die BaFin ist unter Marie-Curie-Str. 24-28, 60439 Frankfurt am Main, Deutschland, telefonisch unter +49 228 4108-0, oder über ihre Website: www.bafin.de erreichbar. Die BaFin wurde von der Gesellschaft darum ersucht, der österreichischen Aufsichtsbehörde *Österreichische Finanzmarktaufsicht*, der französischen Aufsichtsbehörde *Autorité des marchés financiers*, der niederländischen Aufsichtsbehörde *Autoriteit Financiële Markten*, der italienischen Aufsichtsbehörde *Commissione Nazionale per le Società e la Borsa* und der spanischen Aufsichtsbehörde *Comisión Nacional del Mercado de Valores* eine Bescheinigung über die Billigung gemäß Artikel 25 der Prospektverordnung zu übermitteln, aus der hervorgeht, dass der Prospekt im Einklang mit der Prospektverordnung erstellt wurde.

Diese Zusammenfassung sollte als Einleitung zu dem Prospekt verstanden werden. Bei jeder Entscheidung, in die Angebots-ADS der Gesellschaft zu investieren, sollte sich der Anleger auf den Prospekt als Ganzes stützen. Anleger können das gesamte angelegte Kapital oder einen Teil davon verlieren. Für den Fall, dass vor einem Gericht Ansprüche aufgrund der in dem Prospekt enthaltenen Informationen geltend gemacht werden, könnte der als Kläger auftretende Anleger nach nationalem Recht die Kosten für die Übersetzung des Prospekts vor Prozessbeginn zu tragen haben. Zivilrechtlich haften nur diejenigen Personen, die die Zusammenfassung samt etwaiger Übersetzungen vorgelegt und übermittelt haben, und dies auch nur für den Fall, dass die Zusammenfassung, wenn sie zusammen mit den anderen Teilen des Prospekts gelesen wird, irreführend, unrichtig oder widersprüchlich ist oder dass sie, wenn sie zusammen mit den anderen Teilen des Prospekts gelesen wird, nicht die Basisinformationen vermittelt, die in Bezug auf Anlagen in Angebots-ADS der Gesellschaft für die Anleger eine Entscheidungshilfe darstellen können.

1.2 Basisinformationen über die Emittentin

Der nachfolgende Abschnitt beschreibt die BioNTech SE als Emittenten der neuen Namensaktien, die durch die Angebots-ADS repräsentiert werden.

1.2.1 Wer ist die Emittentin der Wertpapiere?

Eintragung und geltendes Recht – Die Gesellschaft ist als Europäische Gesellschaft (*Societas Europaea, SE*) in Deutschland gegründet und unterliegt deutschem Recht, vorbehaltlich der EU-Verordnungen über Europäische Gesellschaften, insbesondere der Verordnung (EG) Nr. 2157/2001 des Rates in ihrer jeweils gültigen Fassung. Die Gesellschaft hat ihren Sitz in Mainz, Deutschland, und sie ist im Handelsregister des Amtsgerichts Mainz, Deutschland, unter HRB 48720 eingetragen. Die Gesellschaft kann unter ihrer Geschäftsadresse: An der Goldgrube 12, 55131 Mainz, Germany, telefonisch unter: +49 6131 9084-0, oder über ihre Website www.biontech.com kontaktiert werden. Die LEI der Gesellschaft ist 894500UZJ5LG1F8J1U58.

Haupttätigkeiten der Emittentin – Wir glauben, wir sind ein globales Immuntherapie-Unternehmen der nächsten Generation, mit dem Ziel, Vorreiter bei der Entwicklung neuartiger Medikamente gegen Krebs, Infektionskrankheiten und andere schwere Krankheiten zu sein. Seit unserer Gründung im Jahr 2008 konzentrieren wir uns darauf, die Kraft des Immunsystems zu nutzen, mit dem Ziel, menschliche Krankheiten mit ungedecktem medizinischem Bedarf und großen globalen Gesundheitsbelastungen zu beheben. Unser vollständig integriertes Modell kombiniert jahrzehntelange Forschung in der Immunologie mit einem technologieübergreifenden Innovationsmotor, Good-Manufacturing-Practice-Produktion,

translationaler Arzneimittelforschung, klinischer Entwicklung, kommerziellen Kapazitäten, computergestützter Medizin, Datenwissenschaft, künstlicher Intelligenz sowie maschinellem Lernen, um unser angebotenes Produkt und unsere Produktkandidaten zu erforschen, zu entwickeln und zu vermarkten. Wir haben ein breites Instrumentarium über mehrere

Technologieplattformen aufgebaut, das ein breites Spektrum an potenziell erstklassigen therapeutischen Ansätzen umfasst. Dazu gehören Boten-Ribonukleinsäure oder mRNA-Immuntherapien, proteinbasierte Therapeutika (einschließlich gezielter Antikörper wie monoklonale, bispezifische und Antikörper-Wirkstoff-Konjugate) und Zelltherapien. Wir glauben, dass uns unsere technologieübergreifende Kombination von Plattformen und Produktkandidaten als Vorreiter auf dem Gebiet der individualisierten, patientenzentrierten Therapieansätze in der Onkologie und bei Infektionskrankheiten positioniert. Unser Hauptaugenmerk liegt auf der Onkologie, wo wir versuchen, das gesamte Spektrum der Krebserkrankung vom frühen bis zum späten Krankheitsstadium zu adressieren. Die Hauptursachen für das Scheitern der Krebsbehandlung sind die Heterogenität des Krebses und die interindividuelle Variabilität. Durch zufällige, aufeinander folgende Mutationen ist der Krebs jedes Patienten anders und innerhalb des Tumors eines Patienten ist jede Zelle anders. Die Bewältigung dieser beiden Herausforderungen ist der Kern unserer Strategie. Um die Anti-Tumor-Aktivität zu verstärken und Resistenzmechanismen entgegenzuwirken, versuchen wir, Wirkstoffe mit sich nicht überschneidenden, potenziell synergistischen Wirkmechanismen zu kombinieren. Unser Ansatz hat eine robuste und diversifizierte Produktpipeline mit einer Reihe von Technologien in der Onkologie und bei Infektionskrankheiten hervorgebracht und zur Zulassung unseres ersten vermarkteten Produkts, *Comirnaty*, geführt.

Hauptanteilseigner – Die AT Impf GmbH (deren Alleingesellschafterin die ATHOS KG ist) hält 42,1 % der Aktien der Gesellschaft und die Medine GmbH (deren Alleingesellschaft Prof. Dr. Ugur Sahin ist) hält 16,7 % der Aktien oder Stimmrechte, wobei Prof. Dr. Ugur Sahin weitere 0,5 % der Aktien hält. Gemäß dem Verwahrstellenvertrag, dem die ADSs unterliegen, hat die Gesellschaft das Recht, die Verwahrstelle anzuweisen, bei nicht-streitigen Tagesordnungspunkten Stimmrechte aus solchen ADS unterliegenden Aktien auszuüben, für welche die wirtschaftlich berechtigten ADS-Inhaber keine Weisungen erteilt haben. Auf früheren Hauptversammlungen gab es keine streitigen Tagesordnungspunkte, sodass die Beteiligung der Impf GmbH (bzw. indirekt der ATHOS KG) dieser auf diesen Hauptversammlungen keine Mehrheit der abgegebenen Stimmen vermittelt hat. Allein auf der Basis dieser unstreitigen Hauptversammlungen hätte die Impf GmbH (bzw. indirekt die ATHOS KG) über eine Mehrheit der auf diesen Hauptversammlungen abgegebenen Stimmrechte verfügt, wenn man die nach Weisung der Gesellschaften abgestimmten Aktien unberücksichtigt lässt, und könnte deshalb als Inhaberin faktischer Kontrolle über die Gesellschaft angesehen werden.

Vorstand – Die Mitglieder des Vorstands der Gesellschaft sind Prof. Dr. Ugur Sahin (Chief Executive Officer), Ramón Zapata-Gomez (Chief Financial Officer), Annemarie Hanekamp (Chief Commercial Officer), Sierk Poetting, Ph.D. (Chief Operating Officer), James Ryan, Ph.D. (Chief Legal Officer and Chief Business Officer) und Prof. Dr. med. Özlem Türeci (Chief Medical Officer).

Abschlussprüfer – Der Abschlussprüfer der Gesellschaft ist EY GmbH & Co. KG Wirtschaftsprüfungsgesellschaft (vormals Ernst & Young GmbH Wirtschaftsprüfungsgesellschaft), Stuttgart, Deutschland, Büro Köln, Börsenplatz 1, 50667 Köln, Deutschland.

1.2.2 Welches sind die wesentlichen Finanzinformationen über die Emittentin?

Der ungeprüfte verkürzte Konzernzwischenabschluss der Gesellschaft für die zum 30. Juni 2025 endenden Drei- und Sechsmonatszeiträume wurde von der Gesellschaft in Übereinstimmung mit den vom International Accounting Standards Board (IASB) herausgegebenen IFRS Accounting Standards für Zwischenberichterstattung (IAS 34) erstellt. Der geprüfte Konzernabschluss der Gesellschaft für das zum 31. Dezember 2024 endende Geschäftsjahr wurde von der Gesellschaft in Übereinstimmung mit den vom International Accounting Standards Board (IASB) herausgegebenen IFRS Accounting Standards, wie sie in der Europäischen Union anzuwenden sind, und den ergänzend nach § 315e Abs. 3 in Verbindung mit Abs. 1 Handelsgesetzbuch anzuwendenden handelsrechtlichen Vorschriften erstellt. Die geprüften Konzernabschlüsse der Gesellschaft für die zum 31. Dezember 2023 und 31. Dezember 2022 endenden Geschäftsjahre wurden von der Gesellschaft in Übereinstimmung mit den International Financial Reporting Standards, wie sie in der Europäischen Union anzuwenden sind, und den ergänzend nach § 315e Abs. 3 in Verbindung mit Abs. 1 Handelsgesetzbuch anzuwendenden handelsrechtlichen Vorschriften erstellt.

Soweit in dieser Zusammenfassung Finanzinformationen in Tabellen als „geprüft“ bezeichnet sind, bedeutet dies, dass sie den vorstehend aufgeführten geprüften Konzernabschlüssen entnommen wurden. Wenn Finanzinformationen in Tabellen als „ungeprüft“ bezeichnet werden, bedeutet dies, dass die Finanzinformationen nicht den vorstehend aufgeführten geprüften Konzernabschlüssen, sondern entweder dem oben aufgeführten ungeprüften verkürzten Konzernzwischenabschluss oder der Buchhaltung bzw. dem internen Berichtswesen der Gesellschaft entnommen wurden oder auf Grundlage von Zahlen aus den vorgenannten Quellen berechnet wurden. Finanzinformationen, die in Klammern dargestellt oder denen ein Minuszeichen vorangestellt sind, kennzeichnen einen negativen Betrag.

1.2.2.1 Wesentliche Finanzinformationen aus der Konzern-Gewinn-und-Verlustrechnung

	Sechsmonatszeitraum zum 30. Juni,		Geschäftsjahre zum 31. Dezember		
	2025	2024	2024	2023	2022
(in Millionen €, soweit nicht anders angegeben)	(ungeprüft)		(geprüft, soweit nicht anders angegeben)		
Umsatzerlöse	443,6	316,3	2.751,1	3.819,0	17.310,6
Umsatzwachstum im Vergleich zum Vorjahreszeitraum (in %) (ungeprüft)	40,2	—	*(28.0)*	*(77.9)*	—
Betriebsergebnis	(1.035,2)	(1.473,4)	(1.314,3)	690,4	12.642,7
Nettogewinn / (verlust)	(802,4)	(1.122,9)	(665,3)	930,3	9.434,4
Ergebnis je Aktie					
Unverwässertes Ergebnis je Aktie	*(3,33)*	*(4,67)*	*(2,77)*	*3,87*	*38,78*
Verwässertes Ergebnis je Aktie	*(3,33)*	*(4,67)*	*(2,77)*	*3,83*	*37,77*

1.2.2.2 Wesentliche Finanzinformationen aus der Konzern-Bilanz

(in Millionen €)	Zum 30. Juni (ungeprüft)	Zum 31. Dezember 2024 (geprüft)	2023 (geprüft)	2022 (geprüft)
Bilanzsumme	21.637,6	22.529,7	23.006,3	23.279,1
Summe Eigenkapital	18.505,1	19.411,1	20.245,9	20.055,6

1.2.2.3 Wesentliche Finanzinformationen aus der Konzern-Kapitalflussrechnung

(in Millionen €)	Sechsmonatszeitraum zum 30. Juni, 2025 (ungeprüft)	2024 (ungeprüft)	Geschäftsjahre zum 31. Dezember 2024 (geprüft)	2023 (geprüft)	2022 (geprüft)
Cashflows aus der betrieblichen Tätigkeit	(634,2)	1.309,9	207,7	5.371,4	13.577,4
Cashflows aus der Investitionstätigkeit	1.182,4	(2.545,8)	(2.081,2)	(6.954,5)	(35,3)
Cashflows aus der Finanzierungstätigkeit	(27,1)	(30,7)	(45,9)	(778,6)	(1.419,3)
Zahlungsmittel und Zahlungsmitteläquivalente zum Ende des Berichtzeitraums	10.269,5	10.376,7	9.761,9	11.663,7	13.875,1

1.2.3 Welches sind die zentralen Risiken, die für die Emittentin spezifisch sind?

Eine Investition in die Angebots-ADS ist mit einer Reihe von Risiken verbunden. Die folgenden Risiken sind wesentliche, für uns spezifische Risiken:

- Die Nachfrage nach unserem COVID-19 Impfstoff ist zwar schwer vorhersehbar, aber es wird erwartet, dass sie in naher Zukunft weiter zurückgehen wird. Sich ändernde Marktdynamiken werden sich auf unsere Umsatzerlöse auswirken, die derzeit stark vom Absatz unseres COVID-19-Impfstoffs abhängen. Die unsichere Nachfrage nach unserem COVID-19-Impfstoff und die Schwierigkeiten bei der gezielten Beschaffung unserer COVID-19-Impfstoffe haben in der Vergangenheit zu erheblichen Abschreibungen von Vorräten und Stornierungen von Aufträgen zur Auftragsfertigung geführt und könnten dies auch in Zukunft tun. Unsere Geschäfts- und Finanzlage könnte durch einen Rückgang der COVID-19-Impfstoffeinnahmen aufgrund von Faktoren, die sich auf die Nachfrage nach unserem COVID-19-Impfstoff auswirken, oder durch Produktions- und Lieferkettenschwierigkeiten erheblich beeinträchtigt werden.
- Die erfolgreiche Vermarktung unserer Produktkandidaten wird zum Teil davon abhängen, inwieweit staatliche Behörden, private Krankenversicherungen und andere Kostenträger die Kostenübernahme und angemessene Erstattungssätze gewähren und eine für unsere Produktkandidaten günstige Preispolitik betreiben. Sollte es uns nicht gelingen, die Kostenübernahme und angemessene Erstattungssätze für unsere Produktkandidaten, falls sie zugelassen werden, zu erreichen oder aufrechtzuerhalten, und/oder sollten sich Zahlungen staatlicher Behörden verzögern, könnte dies unsere Fähigkeit, diese Produkte zu vermarkten, einschränken und unsere Möglichkeit, Umsatzerlöse zu erzielen, verringern.
- Wenn wir nicht in der Lage sind, unsere Marketing- und Vertriebskapazitäten selbst oder durch Dritte weiter auszubauen, könnten wir nicht in der Lage sein, unsere Produktkandidaten in den Vereinigten Staaten und anderen Ländern effektiv zu vermarkten und zu verkaufen, falls sie zugelassen werden, oder ausreichende Produktumsätze zu erzielen.
- Unser Betriebsergebnis kann erheblich schwanken, was eine Vorhersage unseres künftigen Betriebsergebnisses erschwert. Falls unser Betriebsergebnis hinter den Erwartungen zurückbleibt, könnte der Preis der ADS, die unsere Stammaktien repräsentieren, fallen.
- Wir könnten bei der Entwicklung und Expansion unseres Unternehmens und bei der Steuerung dieser Entwicklung und Expansion auf Schwierigkeiten stoßen, die unseren Betrieb stören könnten.
- Unser Geschäft hängt von der erfolgreichen Entwicklung, behördlichen Zulassung und Vermarktung von Produktkandidaten ab, die auf unseren Technologieplattformen basieren. Sollten wir und unsere Kooperationspartner nicht in der Lage sein, die Zulassung unserer Produktkandidaten für die Behandlung von Patienten in den vorgesehenen Indikationen zu erhalten und diese effektiv zu vermarkten, würde dies unser Geschäft erheblich beeinträchtigen.
- Klinische Entwicklung ist ein langwieriger und teurer Prozess mit ungewissem Ausgang, und Verzögerungen können aus verschiedenen Gründen auftreten, die außerhalb unserer Kontrolle liegen. Klinische Studien für unsere Produktkandidaten könnten sich verzögern, bestimmte Programme könnten nie in die klinische Entwicklung eintreten oder ihre Durchführung könnte kostspieliger sein als erwartet, und wir könnten Schwierigkeiten haben, Patienten für die Teilnahme an klinischen Studien zu rekrutieren, was jeweils unsere Fähigkeit zur Finanzierung unseres Unternehmens beeinflussen und eine wesentliche negative Auswirkung auf unser Geschäft haben könnte.
- Wir und unsere Kooperationspartner oder andere Vertragspartner oder Berater sind von informationstechnischen Systemen abhängig, und jeder Ausfall dieser Systeme könnte unser Geschäft beeinträchtigen. Verletzungen von Systemsicherheit, Datenverluste und andere Störungen könnten sensible Informationen in Bezug auf unser Geschäft gefährden oder uns daran hindern, auf wichtige Informationen zuzugreifen, und uns Haftung aussetzen, was sich negativ auf unsere Geschäftstätigkeit, unsere Betriebsergebnisse und unsere Finanzlage auswirken könnte.
- Unser COVID-19 Impfstoff- und Produktkandidaten basieren auf neuartigen Technologien und können komplex und schwierig herzustellen sein. Wir könnten auf Schwierigkeiten bei der Herstellung, Produktfreigabe, Haltbarkeit, Prüfung, Lagerung, dem Lieferkettenmanagement oder Versand stoßen. Falls wir oder einer der Dritt-Hersteller, mit denen wir zusammenarbeiten, auf solche Schwierigkeiten stoßen, könnte unsere Fähigkeit, Materialien für klinische Studien oder ein zugelassenes Produkt zu liefern, verzögert oder gestoppt werden.

- Wir verlassen uns bei der Durchführung wesentlicher Aspekte unserer vorklinischen Studien und klinischen Versuche auf Dritte und beabsichtigen, uns bei der Durchführung künftiger klinischer Studien auf Dritte zu verlassen. Wenn diese Dritten ihre vertraglichen Pflichten nicht erfolgreich erfüllen, die geltenden behördlichen Anforderungen nicht einhalten oder die erwarteten Fristen nicht einhalten, sind wir möglicherweise nicht in der Lage, behördliche Zulassungen für unsere Produktkandidaten zu erhalten.

- Wir und unsere Kooperationspartner sind bei der Herstellung einiger unserer klinischen Produkte auf Dritte angewiesen, und es kann sein, dass wir auch bei der Herstellung und Verarbeitung unserer Produktkandidaten auf Dritte angewiesen, falls diese zugelassen werden.
- Wenn unsere Bemühungen, geistiges Eigentum im Zusammenhang mit unserem COVID-19-Impfstoff oder unseren Produktkandidaten und Technologien zu erhalten, aufrechtzuerhalten, zu schützen, zu verteidigen und/oder durchzusetzen, nicht ausreichend sind, könnten wir nicht in der Lage sein, auf unserem Markt effektiv zu konkurrieren.
- Die U.S.-amerikanischen, die europäischen oder andere vergleichbare Regulierungsbehörden könnten mit unserem Zulassungsplan nicht einverstanden sein, und wir könnten keine Zulassung für unsere Produktkandidaten erhalten.
- Unser COVID-19-Impfstoff und andere Produktkandidaten, für die wir eine Zulassung oder eine Notfallgenehmigung erhalten, sind Gegenstand einer fortlaufenden regulatorischen Überwachung, und wir werden laufenden regulatorischen Verpflichtungen und einer fortlaufenden regulatorischen Überwachung unterliegen, was zu erheblichen zusätzlichen Ausgaben führen kann. Wir können mit Bußgeldern belegt werden, wenn wir die behördlichen Anforderungen nicht erfüllen oder unvorhergesehene Probleme mit unseren Produkten oder Produktkandidaten auftreten.

1.3 Basisinformationen über die Wertpapiere

1.3.1 Welches sind die wichtigsten Merkmale der Wertpapiere?

Der Prospekt bezieht sich auf das Angebot der Gesellschaft von 15.061.575 Angebots-ADS im Tausch gegen alle ausgegebenen CureVac-Aktien.

Anzahl und Gattung der ADS

Zum 17. Oktober 2025 waren 101.103.358 ADSs ausgegeben. Jede ADS repräsentiert eine auf den Namen lautende Stückaktie der Gesellschaft, wie in nachfolgendem Abschnitt "*Unterliegende Aktien*" beschrieben. Die Angebots-ADS sind ADS derselben Gattung.

Die Angebots-ADS werden von der The Bank of New York Mellon als Verwahrstelle registriert und geliefert. Die The Bank of New York Mellon ist eine nach dem Recht des Bundesstaats New York organisierte Bankgesellschaft mit Sitz in 240 Greenwich St, NY, NY 10286, Vereinigte Staaten von Amerika (die "**Vereinigten Staaten**" oder "**USA**"). Die LEI der The Bank of New York Mellon ist WFLLPEPC7FZXENRZV188.

ISIN und Denominierung der ADS

Die ISIN der ADS lautet US09075V1026 und ihr Nasdaq Trading Symbol ist "BNTX". Die American Depositary Shares sind in U.S. Dollar denominiert.

Mit den ADS verbundene Rechte

Der Hinterlegungsvertrag (*deposit agreement*) und etwaige damit verbundenen Zertifikate, die die American Depositary Shares verbriefen, unterliegen dem Recht des Bundesstaats New York, Vereinigte Staaten. Der Hinterlegungsvertrag sieht die folgenden Hauptmerkmale der mit den ADSs verbundenen Rechte vor:

Stimmrechte

ADS-Inhaber können die Verwahrstelle anweisen, wie sie für die Anzahl der hinterlegten Aktien, die ihre ADS repräsentieren, abstimmen sollen. Wenn die Gesellschaft die Verwahrstelle auffordert, die Stimmanweisungen eines Inhabers einzuholen (wozu die Gesellschaft nicht verpflichtet ist), wird die Verwahrstelle den Inhaber über eine Hauptversammlung informieren und ihm Abstimmungsunterlagen zusenden oder zur Verfügung stellen. In diesen Unterlagen werden die abzustimmenden Tagesordnungspunkte beschrieben und erläutert, wie die ADS-Inhaber der Verwahrstelle Anweisungen zur Stimmabgabe erteilen können. Damit die Anweisungen gültig sind, müssen sie bis zu einem von der Verwahrstelle festgelegten Datum bei der Verwahrstelle eingehen. Die Verwahrstelle wird sich bemühen, soweit praktisch möglich, vorbehaltlich der Gesetze des Staates New York und der Bestimmungen der Satzung der Gesellschaft oder ähnlicher Dokumente, für die Aktien oder anderen hinterlegten Wertpapiere gemäß den Anweisungen der ADS-Inhaber abzustimmen oder durch ihre Vertreter abstimmen zu lassen. Wenn die Gesellschaft die Verwahrstelle nicht auffordert, die Abstimmungsanweisungen eines Inhabers einzuholen, kann ein Inhaber dennoch Abstimmungsanweisungen übermitteln, und in diesem Fall kann die Verwahrstelle versuchen, entsprechend den Anweisungen abzustimmen, ist dazu aber nicht verpflichtet.

Außer durch die oben beschriebene Anweisung an die Verwahrstelle kann ein ADS-Inhaber keine Stimmrechte ausüben, es sei denn, er reicht seine ADS ein und fordert die Herausgabe der zugrunde liegenden Stammaktien. Es kann jedoch sein, dass ein ADS-Inhaber nicht rechtzeitig von der Hauptversammlung erfährt, um die zugrunde liegenden Stammaktien herauszuverlangen.

Einlieferung und Herausgabe

Die Verwahrstelle wird ADSs liefern, wenn der ADS-Inhaber oder sein Makler Aktien oder Nachweise über Rechte zum Erhalt von Aktien bei der Unterverwahrstelle hinterlegt. Nach Zahlung ihrer Gebühren und Auslagen sowie etwaiger Steuern oder Abgaben, wie z. B. Stempel- oder Aktienübertragungssteuern oder -gebühren, registriert die Verwahrstelle die entsprechende Anzahl von ADSs auf den vom Inhaber gewünschten Namen und liefert die ADSs an die Person(en), die die Hinterlegung vorgenommen hat/haben, oder in deren Auftrag.

Ein ADS-Inhaber kann seine ADS bei der Verwahrstelle zum Zwecke eines Herausgabeverlangens einreichen. Nach Zahlung ihrer Gebühren und Auslagen sowie etwaiger Steuern oder Abgaben, wie z. B. Stempel- oder Aktienübertragungssteuern oder -gebühren, liefert die Verwahrstelle die zugrundeliegenden Stammaktien und alle anderen hinterlegten Wertpapiere, die den ADS zugrunde liegen, an den ADS-Inhaber oder eine vom ADS-Inhaber benannte Person am Sitz der Unterverwahrstelle aus. Auf Wunsch, Risiko und Kosten des ADS-Inhabers liefert die Verwahrstelle die hinterlegten Wertpapiere auch in ihrem Büro aus, sofern möglich. Die Verwahrstelle ist jedoch nicht verpflichtet, die Einreichung von ADSs zu akzeptieren, soweit dies die Lieferung eines Bruchteils einer hinterlegten Aktie oder eines anderen Wertpapiers erfordern würde. Die Verwahrstelle kann dem ADS-Inhaber eine Gebühr und ihre Auslagen für die Beauftragung der Unterverwahrstelle mit der Lieferung der hinterlegten Wertpapiere in Rechnung stellen.

Dividendenrechte und andere Ausschüttungen	Die Verwahrstelle hat sich verpflichtet, die Bardividenden oder anderen Ausschüttungen, die sie oder die Unterverwahrstelle auf Aktien oder andere hinterlegte Wertpapiere erhält, nach Zahlung oder Abzug ihrer Gebühren und Auslagen an die ADS-Inhaber zu zahlen oder auszuschütten. Die ADS-Inhaber erhalten diese Ausschüttungen im Verhältnis zu der Anzahl der Aktien, die ihre ADS repräsentieren.
Unterliegende Aktien	Die den ADS unterliegenden Aktien sind auf den Namen lautende Stückaktien mit einem rechnerischen Anteil am Grundkapital der Gesellschaft von €1,00 je Stammaktie und sind ab dem 1. Januar 2025 voll dividendenberechtigt, wobei die unterliegenden Aktien erst ab dem 1. Januar 2026 dividendenberechtigt sein werden, wenn ihre Ausgabe nach dem Beschluss der Hauptversammlung der Gesellschaft über die Verteilung des Bilanzgewinns des zum 31. Dezember 2025 endenden Geschäftsjahres erfolgt. Ihre ISIN ist DE000A0V9BC4. Die Stammaktien lauten auf Euro. Die Stammaktien aus den Kapitalerhöhungen, die durchgeführt werden sollen, um die den Angebots-ADS zugrundezulegenden Aktien der Gesellschaft auszugeben, sind Aktien derselben Gattung. Jede Namensstammaktie der Gesellschaft berechtigt den Aktionär zu einer Stimme in der Hauptversammlung der Gesellschaft. Die Stammaktien sind im Falle einer Insolvenz der Gesellschaft gegenüber allen anderen Wertpapieren und Forderungen nachrangig. Alle Aktien berechtigen die Aktionäre zu einem Anteil an einem ausschüttungsfähigen Liquidationserlös oder Insolvenzüberschuss im Verhältnis ihres Anteils am Grundkapital. Die Aktien sind nach Maßgabe der gesetzlichen Bestimmungen für Namensaktien frei übertragbar.

Übertragbarkeit	Durch ein American Depositary Receipt („**ADR**“) verbriefte American Depositary Shares sind, wenn das ADR ordnungsgemäß indossiert oder von ordnungsgemäßen Übertragungsurkunden begleitet ist, als verbriefte Namenspapiere nach dem Recht des Bundesstaats New York übertragbar. American Depositary Shares, die nicht durch ADR verbrieft sind, sind als unverbriefte Namenspapiere nach dem Recht des Staates New York übertragbar.
Dividendenpolitik	Wir gehen davon aus, dass wir in absehbarer Zukunft keine Bardividenden auf unsere Stammaktien zahlen werden. Wir beabsichtigen, alle verfügbaren Mittel und alle künftigen Gewinne einzubehalten, um die Entwicklung und Expansion unseres Unternehmens zu finanzieren

1.3.2 Wo werden die Wertpapiere gehandelt?

Die Angebots-ADS werden im Nasdaq Global Select Market unter dem Symbol “BNTX” gelistet. Die Beantragung der Zulassung der Stammaktien der Gesellschaft zu einem Handelsplatz ist nicht beabsichtigt.

1.3.3 Welches sind die zentralen Risiken, die für die Wertpapiere spezifisch sind?

Das folgende Risiko ist ein wesentliches, für die ADS der Gesellschaft spezifisches Risiko:

- Der Marktpreis der BioNTech-ADSs war in der Vergangenheit und kann auch in Zukunft erheblichen Schwankungen unterliegen.

1.4 Basisinformation über das öffentliche Angebot von Wertpapieren und die Zulassung zum Handel an einem geregelten Markt

1.4.1 Zu welchen Konditionen und nach welchem Zeitplan kann ich in dieses Wertpapier investieren?

Im Rahmen des Angebots bietet die Gesellschaft 15.061.575 Angebots-ADS im Tausch gegen alle ausgegebenen CureVac-Aktien an. Im Tausch für jede angediente CureVac-Aktie bietet die Gesellschaft eine Anzahl von Angebots-ADS, die durch Multiplikation der Anzahl angedienter CureVac-Aktien mit dem Umtauschverhältnis bestimmt wird, gerundet auf fünf Dezimalstellen. Das Umtauschverhältnis wird bestimmt, indem $5,4641 durch den BioNTech-ADS-VWAP dividiert werden. Der BioNTech-ADS-VWAP ist der volumen-gewichtete Durchschnittspreis für American Depositary Shares der BioNTech SE, gerundet auf vier Dezimalstellen, über den Zeitraum von zehn aufeinanderfolgenden Handelstagen endend an dem fünften Handelstag (einschließlich) unmittelbar vor dem Zeitpunkt, an dem das ursprüngliche Angebot abläuft (wie gegebenenfalls verlängert), und unterliegt folgender Collar-Anpassung: In dem Fall, dass der BioNTech-ADS-VWAP größer oder gleich $126,55 ist, beträgt das Umtauschverhältnis 0,04318 und in dem Fall, dass der BioNTech-ADS-VWAP kleiner oder gleich $84,37 ist, beträgt das Umtauschverhältnis 0,06476. Die sich ergebende Anzahl von Angebots-ADSs die erhalten wird, wird als Angebotsgegenleistung bezeichnet. Vom 12. Juni 2025, dem Tag an dem BioNTech und CureVac den Abschluss des Kaufvertrags bekanntgaben, bis zum 17. Oktober 2025, war der BioNTech-ADS-VWAP nicht größer oder gleich $126,55 oder kleiner oder gleich to $84,37. Dementsprechend hat die Angebotsgegenleistung zu jedem Zeitpunkt während dieses Zeitraums einen Marktwert von $5,4541 repräsentiert. Sollte jedoch der BioNTech-ADS-VWAP beispielsweise am jeweiligen Berechnungstag auf $ 80 fallen oder über $130 steigen, könnte der Marktwert der Angebotsgegenleistung größer bzw. kleiner als $5,4641 sein. Dementsprechend werden die CureVac-Aktionäre zum Zeitpunkt des Prospekts den genauen Marktwert der Gegenleistung, die sie bei Vollzug des Angebots oder nach Abschluss der Nach-Angebots-Reorganisation erhalten werden, nicht kennen oder berechnen können. Während des Angebots wird ein indikatives Umtauschverhältnis (berechnet in der im Prospekt beschriebenen Weise) auf http://www.envisionreports.com/CureVacOffer veröffentlicht, beginnend am 22. Oktober 2025. Die Gesellschaft wird nur volle Angebots-ADSs liefern. Anstelle von Teil-Angebots-ADS erhält ein andienender CureVac-Aktionär einen Ausgleich in bar in Höhe des Produkts (i) der Teil-Angebots-ADS die der Aktionär ansonsten erhalten würde und (ii) dem BioNTech-ADS-VWAP, aufgerundet auf den nächsten Cent, ohne Zinsen und vorbehaltlich etwaiger Steuerabzüge.

Das Angebot erfolgt gemäß den Bedingungen des Kaufvertrags und geltenden Gesetzen und Rechtsvorschriften. Das Angebot besteht aus (i) einem öffentlichen Angebot der Angebots-ADS in den Vereinigten Staaten gemäß dem United States Securities Act of 1933, in seiner jeweils gültigen Fassung, gemäß einem Registrierungsformular auf Form F-4, das bei der United States Securities and Exchange Commission („**SEC**“) eingereicht wird, (ii) einem öffentlichen Angebot der Angebots-ADS in Deutschland, Österreich, Frankreich, Italien, den Niederlanden und Spanien und (iii) einem öffentlichen Angebot im Vereinigten Königreich für welches ein UK-Prospekt-Befreiungsdokument für die Zwecke der Prospektverordnung, wie sie Teil des nationalen Rechts des Vereinigten Königreichs durch den European Union (Withdrawal) Act 2018 (in seiner gültigen Fassung) geworden ist, veröffentlicht wurde. Zusätzlich werden die Angebots-ADSs auch durch ein öffentliches Angebot in der Schweiz auf Basis des Prospekts, gestützt auf und in Anwendung von Artikel 54 Absatz 2 des Schweizerischen Finanzdienstleistungsgesetzes vom 15. Juni 2018, angeboten.

1.4.1.1 Verfahren für die Teilnahme

Sobald das Angebot beginnt, wird BioNTech das Angebot zum Umtausch zusammen mit dem *letter of transmittal* an alle CureVac-Aktionäre im Einklang mit Rule 14d-4 des U.S. Securities Exchange Act von 1934, in seiner jeweils gültigen Fassung (der „**Exchange Act**“) versenden oder versenden lassen. Falls CureVac-Aktien über einen Makler, Händler, eine Geschäftsbank, Treuhandgesellschaft oder anderen Beauftragten gehalten werden, kann diese Person solche Unterlagen erhalten und sie an die Aktionäre entsprechend der Vereinbarungen der jeweiligen Geschäftsbeziehung weiterleiten.

Wenn CureVac-Aktien direkt auf den Namen des Aktionärs in CureVacs Aktienregister eingetragen sind, einschließlich wenn der Aktionär ein eingetragener Inhaber ist und Aktien in den Büchern von CureVacs Transferstelle buchmäßig erfasst sind, muss Folgendes vor Ablauf der Angebotsfrist bei Computershare Trust Company, N.A. (die „**Umtauschstelle**“) eingehen: (i) der ordnungsgemäß ausgefüllte und ordnungsgemäß ausgefertigte *letter of transmittal* und (ii) alle anderen im *letter of transmittal* geforderten Dokumente.

Wenn CureVac Aktien durch einen Legitimationsaktionär (*in „street name“*) gehalten werden und durch buchmäßige Übertragung auf ein bei The Depository Trust Company („**DTC**“) geführtes Konto angedient werden, muss Folgendes bei der Umtauschstelle vor Ablauf der Angebotsfrist eingehen: (i) der ordnungsgemäß ausgefüllte und ordnungsgemäß ausgefertigte *letter of transmittal* oder eine Nachricht des Handlungsbevollmächtigten; (ii) eine Buchungsbestätigung von DTC; und (iii) alle anderen erforderlichen Unterlagen.

Wenn CureVac-Aktionäre ihre Aktien über einen Makler, Händler, eine Geschäftsbank, eine Treuhandgesellschaft oder einen anderen Beauftragten halten, müssen sie sich mit Ihrem Makler, Händler, Ihrer Geschäftsbank, Ihrer Treuhandgesellschaft oder ihrem anderen Beauftragten in Verbindung setzen und Anweisung geben, dass ihre Aktien angedient werden.

Der Begriff „Nachricht des Handlungsbevollmächtigten“ bezeichnet eine von DTC an die Umtauschstelle übermittelte und von dieser empfangene Nachricht, die Bestandteil einer Buchungsbestätigung ist und aus der hervorgeht, dass DTC eine ausdrückliche Bestätigung

des DTC-Teilnehmers erhalten hat, der die CureVac-Aktien, die Gegenstand der Buchungsbestätigung sind, angedient hat, dass dieser Teilnehmer die Bedingungen des *letter of transmittal* erhalten hat und damit einverstanden ist, an dieses gebunden zu sein, und dass die Gesellschaft diese Vereinbarung gegenüber diesem Teilnehmer durchsetzen kann.

Die Umtauschstelle wird für die Zwecke des Angebots ein Konto für die Aktien bei DTC einrichten, und jedes berechtigte Institut, das Teilnehmer von DTC ist, kann die Aktien buchmäßig liefern, indem es DTC veranlasst, diese Aktien gemäß dem Übertragungsverfahren von DTC auf das Konto der Umtauschstelle bei der DTC zu übertragen. Die Zustellung von Dokumenten an DTC gilt nicht als Zustellung an die Umtauschstelle.

Treuhänder, Testamentsvollstrecker, Verwalter, Vormünder, Sachwalter, leitende Angestellte von Unternehmen oder andere Personen, die in einer treuhänderischen oder repräsentativen Funktion handeln und einen *letter of transmittal* oder eine Aktienvollmacht unterzeichnen, müssen die Funktion angeben, in der sie unterzeichnen, und einen Nachweis ihrer Befugnis vorlegen, in dieser Funktion zu handeln, sofern die Gesellschaft nicht darauf verzichtet.

Die Art der Lieferung der CureVac-Aktien und aller anderen erforderlichen Dokumente, einschließlich der Lieferung über DTC, erfolgen nach Wahl und auf Risiko des andienenden CureVac-Aktionärs, und die Lieferung gilt nur dann als erfolgt, wenn sie tatsächlich bei der Umtauschstelle eingegangen ist.

1.4.1.2 Hauptbedingungen des Angebots

Ursprüngliches Angebot und Verlängerung	Das Angebot beginnt am 21. Oktober 2025, 16:00 Uhr (New York City Zeit), und wird zunächst bis 9:00 Uhr (New Yorker Ortszeit) am 3. Dezember 2025 offen sein. Die Gesellschaft kann das ursprüngliche Angebot bis zu einem anderen Datum und einer anderen Uhrzeit verlängern, die von der Gesellschaft und CureVac schriftlich vereinbart werden können. Die Gesellschaft wird das ursprüngliche Angebot zudem um jeden Mindestzeitraum verlängern, der von der SEC oder der Nasdaq verlangt wird. Ferner, wenn innerhalb der geplanten Angebotsfrist eine der Angebotsbedingungen nicht erfüllt ist oder die Gesellschaft darauf verzichtet hat, muss die Gesellschaft das Angebot einmal oder mehrmals in aufeinanderfolgenden Zeiträumen von jeweils bis zu 10 Geschäftstagen (oder einer anderen zwischen der Gesellschaft und CureVac vereinbarten Dauer) verlängern, um die Erfüllung dieser Angebotsbedingungen zu ermöglichen. Die Gesellschaft kann das Angebot um bis zu 20 Geschäftstage verlängern, wenn es nicht hinreichend wahrscheinlich ist, dass innerhalb dieses Verlängerungszeitraums von 10 Geschäftstagen eine erforderliche kartellrechtliche Genehmigung eingeholt wird oder als eingeholt gilt und/oder ein rechtliches Hindernis nicht beseitigt wird. Die Gesellschaft ist nicht verpflichtet, das Angebot mehr als viermal in aufeinanderfolgenden Zeiträumen von jeweils bis zu 10 Werktagen zu verlängern, wenn die einzige nicht erfüllte Bedingung die Mindestannahmebedingung (wie unten definiert) ist. Die Gesellschaft ist nicht verpflichtet, das Angebot über den 12. März 2026 hinaus zu verlängern. Wenn alle Bedingungen des Angebots, mit Ausnahme der erforderlichen kartellrechtlichen Genehmigungen, erfüllt sind oder erfüllt werden können, wird die Ausschlussfrist über den 12. März 2026 hinaus um bis zu zwei weitere 90-Tage-Perioden verlängert. Gemäß dem Kaufvertrag kann, wenn einer der Beschlüsse von CureVac, die eine Bedingung für den Vollzug des Angebots sind, auf einer Hauptversammlung nicht genehmigt und angenommen werden, eine nachfolgende Hauptversammlung abgehalten werden, um die Genehmigung der verbleibenden ausstehenden Beschlüsse zu erhalten.
Nachangebotsfrist	Nach Ablauf der Angebotsfrist und vorbehaltlich der Erfüllung oder des Verzichts auf die Angebotsbedingungen wird die Gesellschaft alle wirksam angedienten CureVac-Aktien zum Tausch annehmen (dieser Zeitpunkt, der „**Annahmezeitpunkt**“). Nach dem Annahmezeitpunkt wird die Gesellschaft eine Nachangebotsfrist gemäß der unter dem Exchange Act erlassenen Rule 14d-11 von mindestens zehn Geschäftstagen (berechnet gemäß der unter dem Exchange Act erlassenen Rule 14d-11) einräumen (die „**Nachangebotsfrist**“).
Angebots-bedingungen	Die Verpflichtung der Gesellschaft zum Erwerb von CureVac-Aktien, die im Rahmen des Angebots gültig angedient und nicht ordnungsgemäß zurückgezogen wurden, unterliegt der Erfüllung oder dem Verzicht auf verschiedene Vollzugsbedingungen, die im Kaufvertrag festgelegt sind. Zu den Angebotsbedingungen zählen neben weiteren üblichen Vollzugsbedingungen: (i) CureVac-Aktien, die mindestens 80 % von CureVacs Grundkapitals unmittelbar vor Ablauf der Angebotsfrist ausmachen, wurden unmittelbar vor Ablauf der Angebotsfrist gültig angedient und nicht ordnungsgemäß zurückgezogen (die „**Mindestannahmebedingung**“); wobei gilt, dass die Gesellschaft die Mindestannahmebedingung unter bestimmten Umständen auf 75 % senken kann; (ii) bestimmte erforderliche kartellrechtliche und andere regulatorische Genehmigungen liegen vor oder ihr Vorliegen wird fingiert, und sie sind in vollem Umfang wirksam; (iii) es sind keine Tatsachen, Veränderungen, Ereignisse, Entwicklungen, Vorkommnisse oder Auswirkungen eingetreten, die einzeln oder insgesamt die Geschäftstätigkeit, die Vermögens- oder Ertragslage oder die Lage der Gesellschaft und/oder CureVac sowie ihrer jeweiligen Tochtergesellschaften in ihrer Gesamtheit wesentlich nachteilig beeinträchtigen (vorbehaltlich bestimmter Ausnahmen); (iv) die außerordentliche Hauptversammlung von CureVac hat Beschlüsse gefasst im Hinblick auf (a) Ernennung der von der Gesellschaft benannten Mitglieder des Vorstands und des Aufsichtsrats der CureVac als Ersatz für die bei Vollzug des Angebots ausscheidenden Mitglieder und (b) die Genehmigung einer Nach-Angebots-Reorganisation; und (v) der Kaufvertrag wurde nicht gemäß seiner Bestimmungen gekündigt.
Verwässerung	Auf der Grundlage des den Eigentümern des Mutterunternehmens zuzurechnenden Nettovermögenswerts (Nettobuchwert) in der Konzern-Bilanz der Gesellschaft zum 30. Juni 2025 und den 240.455.450 ausstehenden Stammaktien der Gesellschaft (d.h. ausschließlich eigener Aktien) zum Datum des Prospekts, wird die (Wertsteigerung) / Verwässerung für die neuen Aktionäre der Gesellschaft zwischen etwa (6,0) % und etwa 38,2 % betragen und wird die Wertsteigerung / (Wertverlust) für die bestehenden Aktionäre der Gesellschaft zwischen etwa (0,5) % und etwa 1,5 % betragen, jeweils abhängig von dem endgültigen Umtauschverhältnis. Die Beteiligungsquote der BioNTech-Aktionäre wird sich um zwischen etwa 5,9 % und etwa 4,0 % verringern (berechnet auf Basis ohne eigene Aktien), abhängig von dem endgültigen Umtauschverhältnis.
Gesamtkosten	Die Kosten im Zusammenhang mit dem Angebot werden sich voraussichtlich auf etwa €17.5 Millionen.

Kosten, die dem Anleger in Rechnung gestellt werden	CureVac-Aktionäre, die als Eigentümer ihrer CureVac-Aktien eingetragen sind und ihre Aktien direkt bei der Umtauschstelle einreichen, müssen keine Maklergebühren, Provisionen oder ähnliche Kosten zahlen. Wenn CureVac-Aktien über einen Makler, Händler, eine Geschäftsbank, eine Treuhandgesellschaft oder einen anderen Beauftragten gehalten werden und der Makler, Händler, die Geschäftsbank, die Treuhandgesellschaft oder der andere Beauftragte des CureVac-Aktionärs die CureVac-Aktien im Namen dieses Aktionärs einreicht, kann der Makler, Händler, die Geschäftsbank, die Treuhandgesellschaft oder der Beauftragte dafür eine Gebühr verlangen. CureVac-Aktionäre sollten sich bei ihrem Makler, Händler, ihrer Geschäftsbank, Treuhandgesellschaft oder ihrem Beauftragten erkundigen, ob Gebühren anfallen.

1.4.1.3 Voraussichtlicher Zeitplan

Der voraussichtliche Zeitplan für das Angebot, welches verlängert oder verkürzt werden und Änderungen unterliegen kann, sieht unter der Annahme, dass das ursprüngliche Angebot nicht verlängert wird und dass die Bedingungen für die Durchführung des Angebots erfüllt oder abbedungen sind und eine Nachangebotsfrist von zehn Geschäftstagen eingeräumt wird, wie folgt aus:

20. Oktober 2025	Billigung des Prospekts durch die BaFin.
	Veröffentlichung des gebilligten Prospekts auf der Website der BioNTech SE (https://investors.biontech.de im Abschnitt „Investoren — CureVac Tauschangebot — Unterlagen zum CureVac Tauschangebot für EEA und Schweizer Investoren").
21. Oktober 2025, 16:00 Uhr (New York City Zeit)	Beginn des ursprünglichen Angebots.
25. November 2025	Bestimmung des endgültigen Umtauschverhältnisses.
Bis 26. November 2025, 9:00 Uhr (New York City Zeit)	Veröffentlichung des endgültigen Umtauschverhältnisses durch Pressemitteilung.
3. Dezember 2025, 9:00 Uhr (New York City Zeit)	Ende des ursprünglichen Angebots (Angebotsfrist).
Bis 3. Dezember 2025, 18:00 Uhr (New York City Zeit)	Eintritt des Annahmezeitpunkts und Bekanntgabe des Ergebnisses des ursprünglichen Angebots am selben Tag.
4. Dezember 2025	Beginn der Nachangebotsfrist.
Am oder um den 4. Dezember 2025	Beschluss des Vorstands der Gesellschaft über die erste Kapitalerhöhung und die diesbezügliche Ausgabe von Stammaktien zur Unterlegung der Angebots-ADS für CureVac-Aktien, die von CureVac-Aktionären erworben werden, die diese während des ursprünglichen Angebots angedient haben.
Am oder um den 15. Dezember 2025	Eintragung der ersten Kapitalerhöhung im Handelsregister der Gesellschaft und Lieferung der Angebots-ADS an den Exchange Agent. Die BioNTech ADSs sind als Gattung an der Nasdaq gelisted, und die Angebots-ADS werden bei Lieferung handelbar sein.
Am oder um den 17. Dezember 2025	Weiterlieferung der Angebots-ADS und Barzahlung für Teil-Angebots-ADSs an CureVac-Aktionäre, welche ihre CureVac-Aktien während dem ursprünglichen Angebot angedient haben.
18. Dezember 2025, 00:01 Uhr (New York City Zeit)	Ende der Nachangebotsfrist und Bekanntgabe des Ergebnisses der Nachangebotsfrist am selben Tag.
Am oder um den 19. Dezember 2025	Beschluss des Vorstands der Gesellschaft über die zweite Kapitalerhöhung und die diesbezügliche Ausgabe von Stammaktien zur Unterlegung der Angebots-ADS für CureVac-Aktien, die von CureVac-Aktionären erworben werden, die diese während der Nachangebotsfrist angedient haben.
Am oder um den 2. Januar 2026	Eintragung der zweiten Kapitalerhöhung im Handelsregister der Gesellschaft und Lieferung der Angebots-ADS an den Exchange Agent. Die BioNTech ADSs sind als Gattung an der Nasdaq gelisted, und die Angebots-ADS werden bei Lieferung handelbar sein.
Am oder um den 6. Januar 2026	Weiterlieferung der Angebots-ADS und Barzahlung für Teil-Angebots-ADSs an CureVac-Aktionäre, welche ihre CureVac-Aktien während dem Nachangebotsfrist angedient haben.

1.4.2 Wer ist der Anbieter und/oder die die Zulassung zum Handel beantragende Person?

Anbieter	Die Gesellschaft ist die Anbieterin der Angebots-ADS.
Zulassung zum Handel	Es erfolgt keine Zulassung zum Handel an einem regulierten Markt im Sinne von Artikel 2 Buchstabe (j) der Prospektverordnung. Die Angebots-ADS werden im Nasdaq Global Select Market gelistet.

1.4.3 Weshalb wird dieser Prospekt erstellt?

Gründe für das Angebot	Die Organe der Gesellschaft sind der Auffassung, dass die Übernahme von CureVac bedeutende potenzielle strategische Vorteile mit sich bringt, einschließlich der Tatsache, dass die Übernahme die globale Umsetzung der Strategie von BioNTech zur Entwicklung, Herstellung und Vermarktung von mRNA-basierten Arzneimitteln in der Onkologie unterstützen und die Fähigkeiten von BioNTech zur Erforschung, Entwicklung, Herstellung und Vermarktung von mRNA-basierten Arzneimitteln als eine tumorübergreifende Technologieplattform in der Onkologie erweitern wird. Durch die Transaktion erhält BioNTech ergänzende Fähigkeiten und geschützte Technologien in den Bereichen Ziel-Entdeckung, Produktion, mRNA-Design und Verabreichungsformulierungen. Die Transaktion ergänzt die jüngsten Akquisitionen von BioNTech in anderen wichtigen Bereichen der Onkologie, darunter Immunmodulatoren wie bispezifische Antikörper und zielgerichtete Therapien wie Antikörper-Wirkstoff-Konjugate.
Nettobetrag der Erlöse; Zweckbestimmung der Erlöse	Die Gesellschaft beabsichtigt, alle ausgegebenen CureVac-Aktien im Rahmen des Angebots zu erwerben. Die Gesellschaft wird keine Erlöse aus dem Angebot erhalten.

Annahme- und Unterstützungsvereinbarungen	Aktionäre von CureVac, die ungefähr 57% der CureVac-Aktien repräsentieren, namentlich dievini Hopp BioTech holding GmbH & Co. KG und bestimmte mit ihr verbundene Unternehmen, die Kreditanstalt für Wiederaufbau (KfW), Glaxo Group Limited und alle Mitglieder der Gesellschaftsorgane der CureVac N.V., haben Tender and Support Agreements abgeschlossenen, gemäß denen sie sich verpflichtet haben, (i) das Angebot für die von ihnen gehaltenen CureVac-Aktien anzunehmen und (ii) für alle Beschlussvorschläge von CureVac auf den außerordentlichen Hauptversammlungen zu stimmen, die, unter anderem, über die Nach-Angebotsreorganisation beschließen, und gegen bestimmte Beschlussvorschläge zu stimmen, die nicht im Einklang mit den im Kaufvertrag vereinbarten Transaktionen stehen, vorbehaltlich der Bedingungen und im Einklang mit den Bestimmungen in den Tender and Support Agreements. Abgesehen von diesen Verpflichtungen unterliegt das Angebot keiner festen Verpflichtung.
Wesentlichste Interessenkonflikte	Es bestehen keine wesentlichen Interessenkonflikte in Bezug auf das Angebot.

1 RISK FACTORS

*Prospective investors should carefully consider the risk factors set out below in this section "1 Risk Factors" of this Prospectus, before investing in American Depositary Shares of BioNTech SE, or the "**Company**", and together with its consolidated subsidiaries, "**BioNTech**", the "**BioNTech Group**", the "**Group**", "**we**", "**us**" and "**our**".*

*In accordance with Article 16 of Regulation (EU) 2017/1129, as amended, or the "**Prospectus Regulation**", the risk factors presented in the Prospectus are limited to risks specific to the Company or its American Depositary Shares, or "**American Depositary Shares**", "**ADSs**", or "**BioNTech ADSs**", and material for taking an informed investment decision. Therefore, the following risks are only those risks that are – based on the Company's current assessment – material and specific to the Group, its business, the industry in which the Group operates and to the BioNTech ADSs. However, they are not the only risks and uncertainties relating to the Group and the BioNTech ADSs. Additional risks and uncertainties relating to the Group that are not currently known to the Group, or that the Group currently deems immaterial, may individually or cumulatively also have a significant negative impact on the Group's business, results of operations, financial condition and/or prospects and may also cause the price of the BioNTech ADSs, to decline and cause investors to lose all or part of their investment. The materiality of the risk factors has been assessed based on the probability of their occurrence and their expected impact.*

The risk factors are presented in categories depending on their nature. The risks mentioned could materialise individually or cumulatively, and some risks may be interdependent. Investors could lose all or part of their investment. An investment in the BioNTech ADSs is, thus, suitable only for investors who can adequately evaluate the risks of such an investment and have sufficient resources to be able to bear any losses that may result therefrom.

1.1 Risks Related to our COVID-19 Vaccine and the Commercialization of our Pipeline

1.1.1 Demand for our COVID-19 vaccine, though difficult to predict, is expected to continue to decrease in the near future. Changing market dynamics will impact our revenues, which currently depends heavily on sales of our COVID-19 vaccine, and result in challenges relating to production of our COVID-19 vaccine.

Prior to the commercialization of our COVID-19 vaccine, we had not sold or marketed any products in our pipeline. As a result, a majority of our total revenues to date are attributable to sales of our COVID-19 vaccine. However, we have experienced and we expect to continue to experience increasing reductions in demand for COVID-19 vaccination generally, including for our vaccine, now that the virus has entered an endemic stage and as a growing proportion of the population becomes vaccinated. We expect that future revenues from sales of our COVID-19 vaccine will decrease as demand for vaccination wanes. Such revenues will depend on numerous factors, including:

- the extent to which a COVID-19 vaccine, including any booster shot, continues to be necessary while COVID-19 remains an endemic virus;
- competition from other COVID-19 vaccines, including those with different mechanisms of action and different manufacturing and distribution constraints, on the basis of, among other things, efficacy, cost, convenience of storage and distribution, breadth of approved use, side-effect profile and durability of immune response;
- our ability to successfully and timely develop effective vaccines targeting new variants and mutations of COVID-19;

- the extent to which changes in local, national and state government policy preferences in the United States of America, or the "**United States**" or "**U.S.**", and other jurisdictions resulting from new elected leadership and evolving public sentiment affect demand for COVID-19 vaccines or mRNA therapeutics and our ability to successfully commercialize our product candidates, if approved;
- our ability to receive full regulatory approvals where we currently have, or previously have had, emergency use authorizations or equivalents;
- our ability to expand our geographic customer base;
- our pricing and reimbursement negotiations with governmental authorities, private health insurers and other third-party payors after our initial sales to national governments, including the transition towards ordinary-course insurance coverage in the public and private sectors;
- the ability of countries and jurisdictions to store and distribute doses of our COVID-19 vaccine to end users at cold temperatures;
- the safety profile of our COVID-19 vaccine, including if previously unknown undesirable effects or increased incidence or severity of known undesirable effects are identified with our COVID-19 vaccine;
- intellectual property, or "**IP**", litigation involving our COVID-19 vaccine and COVID-19 vaccines in general; and
- our manufacturing and distribution capabilities for our COVID-19 vaccine.

We cannot accurately predict the revenues our COVID-19 vaccine will generate in future periods or for how long our COVID-19 vaccine will continue to generate material revenues, and we cannot ensure it will maintain its competitive position. Uncertainty in the demand for our COVID-19 vaccine and difficulties in targeting appropriate supply of our COVID-19 vaccines have in the past resulted, and may in the future result, in significant inventory write-downs and cancellations of contract manufacturing orders. Our business and financial condition could be materially affected by lowered COVID-19 vaccine revenues resulting from any of the above factors, or by production and supply chain difficulties. In addition, if our revenues or market share of, or other financial metrics relating to, our COVID-19 vaccine do not meet the expectations of investors or securities analysts, the market price of the ADSs representing our ordinary shares may decline.

1.1.2 The successful commercialization of our product candidates will depend in part on the extent to which governmental authorities, private health insurers and other third-party payors provide coverage and adequate reimbursement levels and implement pricing policies favorable to our product candidates. Failure to obtain or maintain coverage and adequate reimbursement for our product candidates, if approved, and/or delayed payments from government authorities could limit our ability to market those products and decrease our ability to generate revenues.

The availability and extent of reimbursement by governmental and private payors is essential for most patients to be able to afford certain treatments, including our COVID-19 vaccine and other product candidates we may develop and sell. In addition, because our mRNA product candidates represent an entirely new therapeutic modality, we cannot accurately estimate how future products we may develop and sell would be priced, whether reimbursement could be obtained, or any potential revenue. Sales of our product candidates will depend substantially, both domestically and abroad, on the extent to which the costs of our product candidates will be paid by health maintenance, managed care, pharmacy benefit, and similar healthcare management organizations, or reimbursed by government health administration authorities, private health coverage insurers and other third-party payors. If reimbursement is not available, or is available only to limited levels, we may not be able to successfully commercialize our product candidates. Even if coverage is provided, the approved reimbursement amount may not be high enough to allow us to establish or maintain pricing sufficient to realize an adequate return on our investment in any of our products. Additionally, even if pricing terms with governmental authorities are agreed upon, there may be delayed or denied payments, which could negatively impact our cash flows and, in the case of denied payments, result of operations.

There is significant uncertainty related to the insurance coverage and reimbursement for newly approved products in particular in the United States, including genetic medicines. In the United States, the principal

decisions about reimbursement for new medicines are typically made by the Centers for Medicare & Medicaid Services, or "**CMS**", an agency within the U.S. Department of Health and Human Services, or "**HHS**", as CMS decides whether and to what extent a new medicine will be covered and reimbursed under Medicare. Private payors tend to follow CMS to a substantial degree. It is difficult to predict what CMS will decide with respect to reimbursement for novel products such as ours. Reimbursement agencies in Europe may be more conservative than CMS. For example, a number of cancer drugs have been approved for reimbursement in the United States but have not been approved for reimbursement in certain European countries.

Outside the United States, certain countries, including a number of member states of the European Union, set prices and reimbursement for pharmaceutical products, with limited participation from the marketing authorization holders. We cannot be sure that such prices and reimbursement will be acceptable to us or our collaborators. If the regulatory authorities in these jurisdictions set prices or reimbursement levels that are not commercially attractive for us or our collaborators, our revenues from sales by us or our collaborators, and the potential profitability of our drug products, in those countries would be negatively affected. An increasing number of countries are taking initiatives to attempt to reduce large budget deficits by focusing cost-cutting efforts on pharmaceuticals for their state-run health care systems. These international price control efforts have impacted all regions of the world but have been most drastic in the European Union. Additionally, some countries require approval of the sale price of a product before it can be marketed. In many countries, the pricing review period begins after marketing or product licensing approval is granted. As a result, we might obtain marketing approval for a product in a particular country, but then may experience delays in the reimbursement approval of our product or be subject to price regulations that would delay our commercial launch of the product, possibly for lengthy time periods, which could negatively impact the revenues we are able to generate from the sale of the product in that particular country.

Moreover, increasing efforts by governmental and third-party payors in the United States and abroad to cap or reduce healthcare costs may cause such organizations to limit both coverage and level of reimbursement for new products approved and, as a result, they may not cover or provide adequate payment for our product candidates. The Inflation Reduction Act, or "**IRA**", enacted in August 2022 allows HHS to negotiate the price of certain drugs and biologics that CMS reimburses under Medicare Part B and Part D. The IRA's negotiation program will apply to high-expenditure single-source drugs that have been approved for at least 7 years (11 years for biologics), among other negotiation selection criteria. The negotiated prices, which will become effective in 2026 for the first round of selected drugs, will be capped at a statutorily-determined ceiling price. The IRA also penalizes drug manufacturers that increase prices of Medicare Part B and Part D drugs at a rate greater than the rate of inflation. In addition, the law eliminates the "donut hole" under Medicare Part D beginning in 2025 by significantly lowering the beneficiary maximum out-of-pocket cost and requiring manufacturers to subsidize, through a newly established manufacturer discount program, once the out-of-pocket maximum has been reached. The IRA permits the Secretary of HHS to implement many of these provisions through guidance, as opposed to regulation, for the initial years. Manufacturers that fail to comply with the IRA may be subject to various penalties, including civil monetary penalties. These IRA provisions have begun to take effect progressively starting in 2023, although the drug negotiation provisions of the IRA are currently the subject of legal challenges. The effects of the IRA on our business and the healthcare industry in general are not yet known. These laws and regulations may result in additional reductions in Medicare and other healthcare funding and otherwise affect the prices we may obtain for any of our products for which we may obtain regulatory approval or the frequency with which any such product is prescribed or used, which could negatively impact the revenues we are able to generate from and margins we achieve with the sale of any such product. At the state level, legislatures are increasingly passing legislation and implementing regulations designed to control pharmaceutical and biological product pricing, including price or patient reimbursement constraints, discounts, restrictions on certain product access, and marketing cost disclosure and transparency measures, and, in some cases, designed to encourage importing from other countries and bulk purchasing. Officials appointed by the new presidential administration to oversee the implementation of the IRA may take a different approach, and the new administration and Congress could also pursue statutory changes to the program, either of which could negatively affect our revenues.

We expect to experience pricing pressures in connection with the sale of any of our product candidates due to the trend toward managed healthcare, the increasing influence of health maintenance organizations and additional legislative changes. The downward pressure on healthcare costs in

general, particularly prescription drugs, surgical procedures and other treatments, has become very intense, which may negatively affect our ability to generate revenues from products that are high enough to allow us to realize an adequate return on our investment in any of our products. As a result of the downward pressure, increasingly high barriers are being erected to the entry of new products in the marketplace.

1.1.3 If we are unable to continue to increase our marketing and sales capabilities on our own or through third parties, we may not be able to market and sell our product candidates effectively in the United States and other jurisdictions, if approved, or generate sufficient product sales revenue.

We have only relatively recently developed our sales, distribution or marketing capabilities in the Federal Republic of Germany, or "**Germany**", and Türkiye, and, other than for our COVID-19 vaccine, we have not historically designed our preclinical studies and clinical trials with specific commercialization or marketing considerations in mind. In addition, with respect to our COVID-19 vaccine, we rely heavily on the sales, distribution, and marketing capabilities of our partners, except in Germany and Türkiye. To successfully commercialize any other products that may result from our development programs, several of which are undergoing pivotal clinical trials, we will need to continue developing sales and marketing capabilities in the United States, Europe and other regions, either on our own or with others. We may enter into collaborations with other entities to utilize their mature marketing and distribution capabilities, but we may be unable to enter into marketing agreements on favorable terms, if at all. If our current and future collaborators do not commit sufficient resources to further commercialize our COVID-19 vaccine and our future products, if any, and we are unable to develop the necessary marketing capabilities on our own, we may be unable to generate sufficient product sales revenues to sustain our business. We compete with many companies that currently have extensive and well-funded marketing and sales operations. Without continuing to grow our internal team or obtaining the support of third parties to perform marketing and sales functions, we may be unable to compete successfully against these more established companies.

1.1.4 Our reported commercial revenues are based in part on preliminary estimates of COVID-19 vaccine sales and costs from Pfizer that are likely to change in future periods, which may impact our reported financial results.

Our reported commercial revenues are based in part on preliminary estimates from Pfizer Inc., or "**Pfizer**", and other assumptions and judgments that we have made, which may be subject to significant uncertainties. Our commercial revenues include preliminary estimates in part due to a difference in Pfizer's financial quarter for subsidiaries outside the United States, which consequently creates an additional time lag between the recognition of revenues and the receipt of payment. Although our revenue recognition policy is based on facts and circumstances known to us and various other assumptions that we believe to be reasonable under the circumstances, our actual results may deviate from such reported revenues.

We depend on Pfizer to determine and provide estimates of the costs and profits to be shared with us in the countries where it is commercializing our COVID-19 vaccine under our collaboration agreement with Pfizer for our COVID-19 vaccine, which we refer to as the "**Pfizer Agreement**". Because the information supplied by Pfizer is preliminary and subject to change, the commercial revenues we report based on such information is also subject to finalization. This is particularly true for vaccine sales outside of the United States, where Pfizer has a different reporting cycle than ours. As a result, we may not have the complete sales and costs results outside of the United States for months not covered by the reporting period, but we are nonetheless required to report estimated figures.

Pfizer has historically provided us with profit figures for our COVID-19 vaccine sales in the United States using standard U.S. transfer prices and manufacturing and shipping cost variances (as far as those have been identified) that could be subject to adjustment (e.g., due to changes in manufacturing costs or the price of our COVID-19 vaccine). Pfizer has also provided estimated profits for COVID-19 vaccine sales outside of the United States that were preliminary in nature for the last month of a quarter, as Pfizer's subsidiaries outside of the United States have a different reporting cycle than ours. These estimated figures have changed, and in the future such estimated figures are likely to change, as we receive final data from Pfizer for the applicable period in accordance with the reporting cycle of Pfizer's ex-U.S. subsidiaries and as actual costs become known. Further, to the extent that Pfizer does not provide such

preliminary information in the future, our provisional sales figures for territories outside of the United States will be subject to an even greater level of estimate and judgment. Any changes to the preliminary data we report herein may have an impact on our reported revenues and expenses, profitability or financial position.

1.1.5 We may be unsuccessful in adapting our COVID-19 vaccine or developing future versions of our COVID-19 vaccine to protect against variants of the SARS-CoV-2 virus, and even if we are successful, a market for vaccines against these variants may not develop and our ability to continue to generate income from sales of our COVID-19 vaccine is uncertain.

The COVID-19 disease itself is unpredictable and each variant comes with varying levels of transmissibility and severity. Consequently, the burden of the disease may wane or dissipate such that our and other COVID-19 vaccines may be considered less essential from individual and public health perspectives.

Our COVID-19 vaccine was initially developed based upon the genetic sequence of the original SARS-CoV-2 virus that was first detected. The SARS-CoV-2 virus continues to evolve, and new strains of the virus or those that are already in circulation may prove more transmissible or cause more severe forms of COVID-19 disease than the predominant strains observed to date. Our vaccine may not be as effective in protecting against existing and future variant strains of the SARS-CoV-2 virus as it is against the original virus or currently known strains of the SARS-CoV-2 virus. We and Pfizer intend to continue to observe our COVID-19 vaccine, including variant-adapted vaccine candidates, in global clinical trials. It is possible that subsequent data from these clinical trials may not be as favorable as data we submitted to regulatory authorities to support our applications for emergency use authorization or marketing or conditional marketing approval or that concerns about the safety of our variant-adapted COVID-19 vaccines will arise from widespread use outside of clinical trials. While we continue to monitor emerging SARS-CoV-2 strains, undertake investigations into the immunogenicity of our COVID-19 vaccine against new variants as they emerge and develop modified versions of our COVID-19 vaccine against new variants, these efforts may be unsuccessful, and failure to timely and successfully adapt our vaccine to variants of the SARS-CoV-2 virus could lead to significant reputational harm and adversely affect our financial results. Furthermore, variant-adapted COVID-19 vaccines may not receive approval or emergency use authorization in all jurisdictions, which could adversely affect our business prospects. It is also possible that we may expend significant resources adapting our COVID-19 vaccine to protect against certain variants of the SARS-CoV-2 virus, but that a market for adapted vaccines does not develop for one or more variants or that demand does not align with our projections or cost expenditures, which may result in us not being able to recover cost expenditures. Moreover, even if we are successful in developing an adapted vaccine and there is a market for the new vaccine, new variants continue to emerge, and any adapted vaccine may not be as effective in protecting against such future variant strains, which may again require us to adapt our COVID-19 vaccines and subjects us to the aforementioned risks, which may negatively affect our prospects, revenues we may be able to generate with such vaccines or result in unrecoverable cost. In addition, we may incur charges as a result of write-downs of inventories.

1.1.6 If we discover safety issues with our products, including our COVID-19 vaccine, that were not known at the time of approval, commercialization efforts for our products could be negatively affected, approved products could lose their approval or sales could be suspended, we could be subject to product liability claims and our business and reputation could be materially harmed.

Our COVID-19 vaccine and any other product candidates for which we receive approval or emergency use authorization are subject to continuing regulatory oversight, including the review of additional safety information. Billions of doses of our COVID-19 vaccine have been delivered worldwide, and our COVID-19 vaccine is being more widely used by patients as an authorized product than it was used in clinical trials. As a result, undesirable effects and other problems may be observed that were not seen or anticipated, or were not as prevalent or severe, during clinical trials. We cannot provide assurance that newly discovered or developed safety issues will not arise, and we have received, and expect to continue to receive, product liability claims relating to our COVID-19 vaccine. With the use of any vaccine by a wide patient population, serious adverse events may occur from time to time that did not arise in

clinical trials or that initially appeared to be unrelated to the vaccine itself and only with the collection of subsequent information were found to be causally related to the product. Safety events that arise outside of a clinical trial setting are difficult to monitor and given the widespread use of our COVID-19 vaccine, we have experienced difficulty tracking potential treatment-related adverse events on a global basis. Any safety issues could cause us to suspend or cease marketing of our approved products, possibly subject us to substantial liabilities, and adversely affect our ability to generate revenues and our financial condition. The subsequent discovery of previously unknown problems with a product could negatively affect commercial sales of the product, result in restrictions on the product or lead to the withdrawal of the product from the market. The reporting of adverse safety events involving our products or public speculation about such events could cause the price of the ADSs representing our ordinary shares to decline or experience periods of volatility.

Unexpected safety issues, including any that we have not yet observed in our clinical trials for our COVID-19 vaccine or in real world data, could lead to significant reputational damage for us and our product development platforms going forward and other issues, including delays in our other programs, the need for re-design of our clinical trials and the need for significant additional financial resources.

1.1.7 Government policies, including relating to manufacturing, export controls, or tariffs, and negative public perception regarding vaccines and mRNA-based therapeutics could severely and adversely impact the manufacturing and sales of our COVID-19 vaccine and other product candidates we may develop, if approved.

There is a heightened risk that vaccines could be subject to export controls, adverse emergency actions or supply requirements by governmental and other authorities. In the past, the European Union, or "**EU**" and other regions have imposed, or threatened to impose, export controls that would limit or block the delivery of COVID-19 vaccines manufactured in or outside their territories in instances where manufacturers have been delayed or have not fully satisfied their delivery obligations to such governments, which could have prohibited us from delivering our COVID-19 vaccine to other jurisdictions. More recently, on April 2, 2025, the Trump administration imposed tariffs including a 10% baseline tariff on all countries, with that baseline supplemented in certain cases by additional tariffs that vary by nation, product or industry. Reciprocal tariffs on U.S. goods have been imposed by, among others, China, Canada, and the European Union. On July 28, 2025, the Trump administration announced a trade agreement with the European Union that included a 15% tariff on most imports from the European Union. Furthermore, on September 25, 2025, the Trump administration announced a 100% tariff on certain imported branded pharmaceuticals, subject to certain exceptions. While tariffs with certain countries have been temporarily reduced or paused, the imposition of new tariffs will likely be met with further reciprocal tariffs, thus increasing the possibility of a global trade war. If trade restrictions or tariffs reduce global economic activity, potential impacts could include declining sales; increased costs; volatility in foreign exchange rates; and a decline in the value of our financial assets. Issued or future executive orders or other new or changes in laws, regulations or policy regarding tariffs could have a material adverse effect on our business, earnings and financial guidance. The actual impact of the new tariffs on our business is subject to a number of factors including, but not limited to, restrictions on trade, the effective date and duration of such tariffs, countries included in the scope of tariffs, changes to amounts of tariffs, potential retaliatory tariffs imposed by other countries, and the extent to which tariffs are imposed on finished or unfinished pharmaceutical products. Vaccines are also at risk of being subject to adverse emergency actions taken by governmental entities in certain countries, including intellectual property expropriation, compulsory licenses, strict price controls or other actions, such as the requirement that specific quantities of vaccine doses be set aside for designated purposes or geographic areas. Additional changes in governmental policy preferences and regulatory decision-making may have an adverse effect on our ability to commercialize products or, if approved, product candidates.

Furthermore, public sentiment regarding commercialization of vaccines, the safety and efficacy of our COVID-19 vaccine, other COVID-19 vaccines and treatments, and other public perceptions and misinformation relating to COVID-19, mRNA technology, and our and other COVID-19 vaccines may limit our ability to generate income from sales of our COVID-19 vaccine and other product candidates we may develop and sell, including due to changes in local, national and state government policies in the U.S. and other jurisdictions, and cause reputational damage.

1.1.8 We face significant competition with other makers of COVID-19 vaccines and may be unable to maintain a competitive market share for our COVID-19 vaccine.

A number of vaccine manufacturers, academic institutions and other organizations currently have programs to develop COVID-19 vaccine candidates, including vaccines developed by Moderna, Inc. and Novavax, Inc. Our competitors pursuing vaccine candidates may have greater financial, product candidate development, manufacturing and marketing resources than we do. Larger pharmaceutical and biotechnology companies have extensive experience in clinical testing and obtaining regulatory approval for their products, and may have the resources to invest heavily to accelerate discovery and development of their vaccine candidates.

Our efforts to continue successful commercialization of our COVID-19 vaccine may fail if competitors develop and commercialize COVID-19 vaccines that are safer, more effective, produce longer immunity against COVID-19, require fewer administrations, have fewer or less severe undesirable effects, have broader market acceptance, are more convenient to administer or distribute or are less expensive than any vaccine candidate that we have developed or we may develop.

As a result of these factors, our competitors may compete more effectively, we may lose market share for our marketed COVID-19 vaccines or fail to gain the expected market share for any new, adapted COVID-19 vaccines, which may have a negative effect on our ability to generate revenues and the returns we may achieve on our products. Competitive COVID-19 vaccines may make any newly developed COVID-19 vaccines obsolete or non-competitive before we can recover the expenses of developing and commercializing such products, if approved.

1.1.9 Our COVID-19 vaccine is sensitive to temperature, shipping and storage conditions and could be subject to risk of loss or damage.

Our COVID-19 vaccine is, and other product candidates we develop could be, sensitive to temperature, storage and handling conditions. In particular, while we have improved the required shipping and storage conditions of our COVID-19 vaccine, it must be shipped and stored at cold temperatures. Loss in supply of our COVID-19 vaccine and our product candidates could occur if the product or product intermediates are not stored or handled properly. Shelf life for our product candidates may vary by product, and it is possible that supply of our COVID-19 vaccine or our product candidates could be lost due to expiration prior to use, which may result in inventory write-down charges. This has in the past led, and could in the future lead, to additional manufacturing costs and delays in our ability to supply required quantities for clinical trials or for commercial purposes. Such distribution challenges may make our COVID-19 vaccine a less attractive product than other COVID-19 vaccines that do not require as cold storage, and our COVID-19 vaccine may become increasingly less competitive as additional other vaccines become authorized for emergency use. If we, our partners and customers are unable to adequately manage these issues, we may be exposed to product liability claims and the market opportunity for our COVID-19 vaccine may be reduced, each of which could adversely affect our business prospects and materially harm our financial condition.

1.1.10 We are developing other product candidates and services in an environment of rapid technological and scientific change, and our failure to effectively compete would prevent us from achieving significant market penetration. Most of our competitors have significantly greater resources than we do and we may not be able to compete successfully.

The pharmaceutical market is intensely competitive and rapidly changing. Many large pharmaceutical and biotechnology companies, academic institutions, governmental agencies, and other public and private research organizations are pursuing the development of novel drugs for the same diseases that we are targeting or expect to target. Many of our competitors have:

- greater financial, technical and human resources than we have at every stage of the discovery, development, manufacture and commercialization of products;
- more extensive experience in preclinical testing, conducting clinical trials, obtaining regulatory approvals and manufacturing, marketing and selling drug products;
- product candidates that are based on previously tested or accepted technologies;

- products that have been approved or are in late stages of development; and
- collaborative arrangements in our target markets with leading companies and research institutions.

We will continue to face intense competition from products that have already been approved and accepted by the medical community for the treatment of the conditions for which we may develop products in the future. We also expect to face competition from new products that enter the market. There are a number of products currently under development, which may become commercially available in the future, for the treatment of conditions for which we are trying, or may in the future try, to develop drugs. These drugs may be more effective, safer, less expensive, or marketed and sold more effectively than any products we develop.

We anticipate competing with the largest pharmaceutical companies in the world, many of which are currently conducting research in the fields of infectious diseases, immuno-oncology, rare genetic diseases and cancer immunotherapies. Some of these companies have greater financial and human resources than we currently have. In addition to these large pharmaceutical companies, we may directly compete with fully-integrated biopharmaceutical companies and other immunotherapy-focused oncology companies, as well as a number of companies focused on immunotherapies or shared tumor antigen and neoantigen therapeutics, some of which have entered into collaboration and funding agreements with larger pharmaceutical or biotechnology companies.

If we successfully develop other product candidates, and obtain approval for them, we will face competition based on many different factors, including:

- the safety and effectiveness of our products relative to alternative therapies, if any;
- the ease with which our products can be administered and the extent to which patients accept relatively new routes of administration;
- the timing and scope of regulatory approvals for these products;
- the availability and cost of manufacturing, marketing and sales capabilities;
- the price of any approved immunotherapy;
- reimbursement coverage; and
- intellectual property position.

Following our acquisition of InstaDeep Ltd., or "**InstaDeep**", we also face competition in the rapidly growing and developing artificial intelligence, or AI, industry. Our competitors may develop or commercialize products and services with significant advantages over any products we develop based on any of the factors listed above or on other factors. In addition, our competitors may develop collaborations with or receive funding from larger pharmaceutical, biotechnology or technology companies, providing them with an advantage over us. Our competitors therefore may be more successful in commercializing their products and services than we are, which could adversely affect our competitive position and business. Competitive products and services may make any products and services we develop obsolete or non-competitive before we can recover the expenses of developing and commercializing such products, if approved, and services.

1.1.11 The market opportunities for some of our product candidates may be small due to the rarity of the disease, or limited to those patients who are ineligible for or have failed prior treatments. As the target patient populations for some of our programs are small, we may be unable to achieve or maintain profitability in future periods without obtaining regulatory approval for additional indications.

The U.S. Food and Drug Administration, or the "**FDA**", often approves new cancer therapies initially only for use by patients with relapsed or refractory advanced cancer. We expect to seek approval initially for some of our product candidates in this context. Subsequently, for those products that prove to be sufficiently beneficial, we would expect to seek approval in earlier lines of treatment and potentially as a first-line therapy, but there is no guarantee that our product candidates, even if approved, would be approved for earlier lines of therapy, and, prior to any such approvals, we may have to conduct additional clinical trials. We are also developing product candidates for the treatment of rare diseases.

Our projections of the number of people who have or will have the diseases we may be targeting may prove to be incorrect. Further, new studies may change the estimated incidence or prevalence of these diseases. The number of trial participants may turn out to be lower than expected. Additionally, the potentially addressable patient population for our product candidates may be limited or may not be amenable to treatment with our product candidates. Even if we obtain significant market share for our products, if approved, because the potential target populations may be small, we may be unable to achieve or maintain profitability in future periods without obtaining regulatory approval for additional indications.

1.1.12 Our ability to achieve or maintain profitability in future periods depends in part on our and our collaborators' ability to penetrate global markets, where we would be subject to additional regulatory burdens and other risks and uncertainties associated with international operations that could materially adversely affect our business.

Our ability to achieve or maintain profitability in future periods will depend in part on our ability and the ability of our collaborators to commercialize any products that we or our collaborators may develop in markets throughout the world. Commercialization of products in various markets could subject us to risks and uncertainties, including:

- obtaining, on a country-by-country basis, the applicable marketing authorization from the competent regulatory authority;
- the burden of complying with complex and changing regulatory, tax, accounting, labor and other legal requirements in each jurisdiction that we or our collaborators pursue;
- reduced protection for intellectual property rights;
- differing medical practices and customs affecting acceptance in the marketplace;
- import or export licensing requirements;
- governmental controls, trade restrictions or changes in tariffs;
- economic weakness, including inflation, or political instability;
- production shortages resulting from any events affecting raw material supply or manufacturing capabilities abroad;
- longer accounts receivable collection times;
- longer lead times for shipping;
- language barriers;
- foreign currency exchange rate fluctuations;
- the impact of epidemics, pandemics and other public health developments, such as COVID-19, on employees and the global economy;
- reimbursement, pricing and insurance regimes; and
- the interpretation of contractual provisions governed by local laws in the event of a contract dispute.

We do not have prior experience in all of these areas, and the experience we do have in some of these areas is limited. Our collaborators may have limited experience in these areas as well. Failure to successfully navigate these risks and uncertainties may limit or prevent market penetration for any products that we or our collaborators may develop, which would limit their commercial potential and our revenues.

1.1.13 Even if we obtain regulatory approval for our product candidates, the products may not gain the market acceptance among physicians, patients, hospitals, treatment centers and others in the medical community necessary for commercial success.

Even with the requisite approvals, the commercial success of our products will depend in part on the medical community, patients, and third-party or governmental payors accepting immunotherapies in general, and our products in particular, as medically useful, cost-effective and safe.

Any product that we bring to the market may not gain market acceptance by physicians, trial participants, third-party payors, and others in the medical community. Additionally, ethical and legal concerns and social preferences about research involving mRNA could result in additional regulations restricting or prohibiting the products and processes we may use. If these products do not achieve an adequate level of acceptance, we may not generate significant product sales revenues and may not be able to achieve or maintain profitability in future periods. The degree of market acceptance of our product candidates, if approved for commercial sale, will depend on a number of factors, including:

- the potential efficacy and potential advantages over alternative treatments;
- the ability to offer our products, if approved, at competitive prices;
- the prevalence and severity of any undesirable effects, including any limitations or warnings contained in a product's approved labeling;
- the prevalence and severity of any undesirable effects resulting from checkpoint inhibitors or other drugs or therapies with which our products are administered;
- the relative convenience and ease of transportation, storage and administration;
- any restrictions on the use of our products, if approved, together with other medications;
- the willingness of the target patient population to try new therapies, such as mRNA vaccines and therapies, and of physicians to prescribe these therapies;
- the strength of marketing and distribution support and timing of market introduction of competitive products;
- the extent to which changes in local, national and state government policy preferences in the United States and other jurisdictions resulting from new elected leadership and evolving public sentiment affect demand for COVID-19 vaccines or mRNA therapeutics and our ability to successfully commercialize our product candidates, if approved;
- publicity concerning our products or competing products and treatments; and
- sufficient third-party insurance coverage or reimbursement, and patients' willingness to pay out-of-pocket in the absence of third-party coverage or adequate reimbursement.

Even if a potential product displays a favorable efficacy and safety profile in preclinical studies and clinical trials, market acceptance of the product will not be known until after it is launched. Our efforts to educate the medical community and third-party payors on the benefits of the products may require significant resources and may never be successful. Our efforts to educate the marketplace may require more resources than are required by the conventional technologies marketed by our competitors due to the complexity and uniqueness of our programs.

In addition, for our products that are approved for marketing, we and/or our collaborator are subject to significant regulatory obligations regarding the submission of safety and other post-marketing information and reports for such product, and will need to continue to comply (or ensure that our third-party providers comply) with current GMP and current good clinical practices, or "**GCP**", for any clinical trials that we or a collaborator conduct post-approval and current good manufacturing practices, or "**GMP**". Failure to follow these requirements could lead to adverse regulatory action, including suspension or withdrawal of regulatory approvals for specific drugs, the issuance of untitled or warning letters, or initiation of enforcement actions. This could result in our inability to use a manufacturing facility to make our product, a determination that inventories are not safe for commercial sale, product recalls and seizures, operating restrictions and/or criminal prosecutions. Any of these factors could adversely affect our business prospects and our financial position could be materially harmed. In addition, there is always the risk that we or a collaborator or regulatory authority might identify previously unknown

problems with a product post-approval, such as adverse events of unanticipated severity or frequency. Compliance with these requirements is costly, and any such failure to comply or other issues with our product candidates identified post-approval could have a material adverse impact on our business, financial condition and results of operations.

1.1.14 Coverage and reimbursement may be limited or unavailable or change in the future in certain market segments for our product candidates, which could make it difficult for us to sell our product candidates, if approved, profitably.

Successful sales of our product candidates, if approved, depend on the availability of coverage and adequate reimbursement from third-party payors including governmental healthcare programs, such as Medicare and Medicaid in the United States, managed care organizations and commercial payors, among others. Significant uncertainty exists as to the coverage and reimbursement status of any product candidates for which we obtain regulatory approval. In addition, because certain of our product candidates represent new approaches to the treatment of cancer, we cannot accurately estimate the potential revenues from our product candidates.

Patients who are provided medical treatment for their conditions generally rely on third-party payors to reimburse all or part of the costs associated with their treatment. Obtaining coverage and adequate reimbursement from third-party payors is critical to new product acceptance.

Third-party payors decide which drugs and treatments they will cover and the amount of reimbursement. Reimbursement by a third-party payor may depend upon a number of factors, including, but not limited to, the third-party payor's determination that use of a product is:

- a covered benefit under its health plan;
- safe, effective and medically necessary;
- appropriate for the specific patient;
- cost-effective; and
- neither experimental nor investigational.

Obtaining coverage and reimbursement of a product from a government or other third-party payor is a time-consuming and costly process that could require us to provide to the payor supporting scientific, clinical and cost-effectiveness data for the use of our products. Third-party payors could require us to conduct additional studies, including post-marketing studies related to the cost effectiveness of a product, to qualify for reimbursement, which could be costly and divert our resources. Even if we obtain coverage for a given product, if the resulting reimbursement rates are insufficient, hospitals may not approve our product for use in their facility or third-party payors may require co-payments that patients find unacceptably high. Patients are unlikely to use our product candidates unless coverage is provided and reimbursement is adequate to cover a significant portion of the cost of our product candidates. Separate reimbursement for the product itself may or may not be available. Instead, the hospital or administering physician may be reimbursed only for providing the treatment or procedure in which our product is used. Further, from time to time, CMS revises the reimbursement systems used to reimburse healthcare providers, including the Medicare Physician Fee Schedule and Outpatient Prospective Payment System, which may result in reduced Medicare payments. In some cases, private third-party payors rely on all or portions of Medicare payment systems to determine payment rates. Changes to government healthcare programs that reduce payments under these programs may negatively impact payments from private third-party payors and reduce the willingness of physicians to use our product candidates. As a result, if we fail to obtain coverage and reimbursement, the commercial prospects for those products will be harmed. Even if we achieve coverage, if the reimbursement rates prove to be insufficient, this could have a negative effect on demand for our products and materially impair our ability to generate revenues and an adequate return on our investments.

In the United States, no uniform policy of coverage and reimbursement for products exists among third-party payors. Therefore, coverage and reimbursement for products can differ significantly from payor to payor. Further, one payor's determination to provide coverage for a product does not assure that other payors will also provide coverage for the product. Adequate third-party reimbursement may not be available to enable us to maintain price levels sufficient to realize an appropriate return on our investment in product development.

1.1.15 The advancement of healthcare reform legislation and changes to the regulatory environment in the United States, the European Union and elsewhere may increase the difficulty and cost for us to obtain marketing approval of and commercialize any product candidates we or our collaborators develop and may adversely affect the prices for such product candidates.

In the United States, there have been and continue to be a number of legislative initiatives to contain healthcare costs. For example, in March 2010, the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act of 2010, or the "**ACA**", was passed, which substantially changed the way health care is financed by both governmental and private insurers, and significantly impacted the U.S. pharmaceutical industry. The ACA, among other things, increased the minimum Medicaid rebates owed by manufacturers under the Medicaid Drug Rebate Program and extended the rebate program to individuals enrolled in Medicaid managed care organizations, established annual fees and taxes on manufacturers of certain branded prescription drugs, and promoted a new Medicare Part D coverage gap discount program. Considerable uncertainty remains regarding the implementation and impact of the ACA.

In August 2022, the IRA was enacted, which sets forth meaningful changes to drug product reimbursement by Medicare. The IRA is anticipated to have significant effects on the pharmaceutical industry and may reduce the prices we can charge and reimbursement we can receive for our products in the United States, among other effects. Any reduction in reimbursement from Medicare resulting from the IRA or other legislative or policy changes or from other government programs may result in a similar reduction in payments from private payers. On August 16, 2024, CMS announced the results of a first round of discounted prices effectively set by CMS under the IRA, applicable to ten products of other manufacturers; those discounted prices, set to take effect for calendar year 2026, were as high as 79% from 2023 list prices. Additional products will be discounted in future years. We cannot be sure whether additional legislative changes will be enacted, or the effect of forthcoming guidance implementing the IRA, or what the impact of such changes on our products and product candidates may be. Officials appointed by the new presidential administration to oversee the implementation of the IRA or other statutes may take a different approach, and the new administration and Congress could also pursue statutory changes to this or other programs, either of which could negatively affect our revenues.

The delivery of healthcare in the European Union, including the establishment and operation of health services and the pricing and reimbursement of medicines, is almost exclusively a matter for national, rather than European Union, law and policy. National governments and health service providers have different priorities and approaches to the delivery of healthcare and the pricing and reimbursement of products in that context. In general, however, the healthcare budgetary constraints in most EU member states have resulted in restrictions on the pricing and reimbursement of medicines by relevant health service providers. Coupled with ever-increasing European Union and national regulatory burdens on those wishing to develop and market products, this could prevent or delay marketing approval of our product candidates, restrict or regulate post-approval activities, and affect our ability to commercialize any products for which we obtain marketing approval.

We expect that additional healthcare reform measures or proposals will be adopted in the future, any of which could limit the amounts that governments will pay for healthcare products and services, including public health measures, which could result in reduced demand for our products and product candidates or additional pricing pressures. In the event that the pricing structures for healthcare products, such as the product candidates we are developing, change materially and limit payments for such product candidates, our business will be adversely impacted as our products may no longer be commercially viable based on their expected net present value; we may have invested significant resources in product candidates that cannot be commercially developed; or we may determine that assets that have reached an early phase of development cannot or will not be taken into further development, notwithstanding their clinical viability. In addition, development assets or clinical programs that are part of our collaborations may no longer be deemed commercially viable to pursue based on our collaborators' assessments of the impact of any proposed, announced, or legislated pricing reforms.

We cannot predict what healthcare reform initiatives may be adopted in the future. Further legislative and regulatory developments are likely, and we expect ongoing initiatives to increase pressure on drug pricing. Such reforms could have an adverse effect on anticipated revenues from our approved products and from product candidates that we may successfully develop and for which we may obtain regulatory approval, and may affect our overall financial condition and ability to develop product candidates.

1.1.16 Drug marketing and reimbursement regulations in the European Union and elsewhere may materially affect our ability to market and receive coverage for our products in the member states of the European Union and elsewhere.

Our COVID-19 vaccine is currently approved in the United States, the European Union, and other jurisdictions, and we intend to seek approval to market other product candidates in the United States, the European Union and other selected jurisdictions. If we obtain approval for our products or product candidates in a particular jurisdiction, we will be subject to rules and regulations in that jurisdiction. In some countries, particularly those in the European Union, the pricing of biologics is subject to governmental control and other market regulations that could put pressure on the pricing and usage of our products or product candidates. In these countries, pricing negotiations with governmental authorities can take considerable time after obtaining marketing approval of a product candidate. In addition, market acceptance and sales of our product candidates will depend significantly on the availability of adequate coverage and reimbursement from third-party payors for our product candidates and may be affected by existing and future healthcare reform measures.

In addition, in most countries outside the United States, the proposed pricing for a drug must be approved before it may be lawfully marketed. The requirements governing drug pricing and reimbursement vary widely from country to country. For example, the European Union provides options for its member states to restrict the range of medicinal products for which their national health insurance systems provide reimbursement and to control the prices of medicinal products for human use. Reference pricing used by various member states and parallel distribution, or arbitrage between low-priced and high-priced member states, can further reduce prices. A member state may approve a specific price for the medicinal product or it may instead adopt a system of direct or indirect controls on the profitability of the company placing the medicinal product on the market. In some countries, we may be required to conduct a clinical trial or other studies that compare the cost-effectiveness of any of our product candidates to other available therapies in order to obtain or maintain reimbursement or pricing approval. There can be no assurance that any country that has price controls or reimbursement limitations for pharmaceutical products will allow favorable reimbursement and pricing arrangements for any of our products. Historically, products launched in the European Union do not follow price structures of the United States and, generally, prices tend to be significantly lower in the European Union. Publication of discounts by third-party payors or authorities may lead to further pressure on the prices or reimbursement levels within the country of publication and other countries. If pricing is set at unsatisfactory levels or if reimbursement of our products is unavailable or limited in scope or amount, our revenues from sales by us or our collaborators and the potential profitability of any of our product candidates in those countries would be negatively affected. Even if favorable coverage and reimbursement status is attained for one or more products for which we receive regulatory approval, less favorable coverage policies and reimbursement rates may be implemented in the future.

The downward pressure on health care costs has become very intense. As a result, increasingly high barriers are being erected to the entry of new products into the marketplace. In addition, in some countries, cross-border imports from low-priced markets exert a commercial pressure on pricing within a country and we expect downward pressure on pharmaceutical pricing to continue, which may have a material adverse effect on our business and results of operations.

1.2 Risks Related to our Financial Condition and Capital Requirements

1.2.1 Our operating results may fluctuate significantly, which makes our future operating results difficult to predict. If our operating results fall below expectations, the price of the ADSs representing our ordinary shares could decline.

Our financial condition and operating results have varied in the past and will continue to fluctuate from one financial period to the next due to a variety of factors, many of which are beyond our control.

Factors relating to our business that may contribute to these fluctuations include the following, as well as other factors described in this section "*1 Risk Factors*":

- the size and timing of orders for our COVID-19 vaccine;
- delays or failures in advancement of existing or future product candidates into the clinic or in clinical trials;
- the occurrence of adverse events during our clinical trials or post marketing authorization;
- our ability to develop and manufacture our product candidates and commercialize and manufacture our COVID-19 vaccine and, if approved, our product candidates, at commercial scale, including risks associated with quality compliance, such as product design, manufacturing processes, supply chain management, and compliance with regulatory requirements;
- our ability to manage our growth and spending;
- our ability to execute our corporate objectives;
- strategic decisions related to portfolio prioritization, which may result in certain potential one-time effects and charges and other material adverse effects on our financial condition and results of operations;
- the outcomes of research programs, clinical trials, or other product development or approval processes conducted by us and our collaborators;
- the ability of our collaborators to develop and successfully commercialize products developed from our suite of therapeutic classes;
- our relationships, and any associated exclusivity terms, with collaborators;
- our contractual or other obligations to provide resources to fund our product candidates, and to provide resources to our collaborators or to the collaborations themselves, including take-or-pay or similar obligations;
- the extent to which we repurchase outstanding ADSs under any share repurchase plans we may enter into in the future;
- risks associated with the international aspects of our business, including the conduct of clinical trials in multiple locations, and the risks associated with potential international commercialization, including regulatory approval, market competition, public sentiment and consumer demand, supply chain disruptions, and changes to the law and regulatory policy, such as increases in tariffs, in different jurisdictions, such as the United States;
- our ability to minimize and manage product recalls or inventory losses caused by unforeseen events, cold chain interruption, testing difficulties or decreased demand, and our ability to write down certain inventory;
- our ability to report our financial results accurately and in a timely manner;
- our dependence on, and the need to attract and retain, key management and other personnel;
- our ability to obtain, protect, maintain, defend and enforce our intellectual property rights;
- our ability to prevent the theft or infringement, misappropriation or other violation of our intellectual property, trade secrets, know-how or technologies;
- our and our collaborators' ability to defend against claims of infringement of the intellectual property rights of third parties;
- potential advantages that our competitors and potential competitors may have in securing funding, obtaining the rights to critical intellectual property or developing competing technologies or products;
- our ability to obtain additional capital that may be necessary to expand our business;
- our collaborators' ability to obtain and devote additional capital that may be necessary to develop and commercialize products under our collaboration agreements, including our COVID-19 vaccine;

- our ability to minimize and manage product liability claims arising from the use of our COVID-19 vaccine and our product candidates and other future products, if approved;
- business interruptions such as power outages, strikes, acts of terrorism or natural disasters;
- our ability to use our net operating loss carryforwards to offset future taxable income;
- risks of counterparty defaults within our asset management portfolio; and
- increased or unpredictable pricing for the commodities we rely on, including as a result of inflation.

Each of the factors listed above may be affected by the changing impact of COVID-19 on the global community and the global economy.

Due to the various factors mentioned above, and others, the results of any of our periods should not be relied upon as indications of our future operating performance. Our operating results may fluctuate significantly from one reporting period to the next, such that a period-to-period comparison of our results of operations may not be a good indication of our future performance.

In any particular period, our operating results could be below the expectations of securities analysts or investors, which could cause the price of the ADSs to decline. While as a general matter we intend to periodically report on the status of our product candidate pipeline, including articulating anticipated next steps in the form of development plans or potential data readouts, we may not always be able to provide forward-looking guidance on the timing of those next steps. In addition, we do not control the timing of disclosures of any milestones related to any of our programs that are managed by our collaborators. Any disclosure by a collaborator of data that are perceived as negative, whether or not such data are related to other data that we or others release, may have a material adverse impact on the price of the ADSs or our overall valuation. The price of the ADSs may decline as a result of unexpected clinical trial results in one or more of our programs, including adverse safety events reported for any of our programs.

1.2.2 We may encounter difficulties in developing and expanding our company and managing such development and expansion, which could disrupt our operations.

To manage our anticipated development and expansion, we must continue to implement and improve our managerial, operational, legal, compliance and financial systems, expand our facilities, and continue to recruit and train additional qualified personnel. This includes our acquisition in January 2025 of Biotheus, Inc., or "**Biotheus**", a clinical-stage biotechnology company, as part of our oncology strategy, and our strategic initiatives more generally. In addition, our management may need to divert a disproportionate amount of its attention away from its day-to-day activities and devote a substantial amount of time to managing these development activities.

As an evolving biotechnology company, we are actively pursuing drug classes, platforms and product candidates in many therapeutic areas and across a wide range of diseases. Successfully developing products for, and fully understanding the regulatory and manufacturing pathways to, all of these therapeutic areas and disease states requires a significant depth of talent, resources and corporate processes in order to allow simultaneous execution across multiple areas. Due to our limited resources, we may not be able to effectively manage this simultaneous execution and the expansion of certain operations or recruit and train additional qualified personnel. This may result in weaknesses in our infrastructure and/or give rise to operational mistakes, legal or regulatory compliance failures, loss of business opportunities, loss of employees and reduced productivity among remaining employees. The physical expansion of our operations may lead to significant costs and may divert financial resources from other projects, such as the development of our product candidates. If our management is unable to effectively manage our expected development, our expenses may increase more than expected, our ability to generate or increase our revenues could be reduced and we may not be able to effectively implement our business strategy. Our future financial performance and our ability to compete effectively and commercialize our COVID-19 vaccine and our product candidates, if approved, will depend in part on our ability to effectively manage the current and future development of our Group.

1.2.3 Long-term sustainable profitability is difficult to achieve and maintain over time and is highly dependent on various factors.

Our ability to continue to generate revenues and achieve and maintain long-term sustainable profitability depends on our ability, alone or with collaborators, to successfully complete the development of, and

obtain the regulatory approvals necessary to commercialize, our product candidates. We continue to generate revenues from sales of our COVID-19 vaccine and additional limited revenues from other transactions. While we expect to maintain revenues from ongoing COVID-19 vaccine sales, future demand for COVID-19 vaccination is subject to uncertainty. Although we anticipate COVID-19 vaccination rates to remain relatively stable in the near term, variations driven by factors such as new virus variants, regional policy changes, and public health measures may impact long-term demand. Consequently, our revenue projections are influenced by this inherent unpredictability. The amount of long-term revenues from such sales, including the sales of our COVID-19 vaccine, is uncertain at this time. Our ability to generate future revenues from pharmaceutical product sales and sales of our other products and services depends heavily on our success in:

- completing research and preclinical and clinical development of our product candidates;
- seeking and obtaining U.S. and non-U.S. marketing approvals for product candidates for which we complete clinical trials;
- seeking and obtaining market access and favorable pricing terms in the United States, the European Union, and other key geographies;
- furthering the development of our own manufacturing capabilities and manufacturing relationships with third parties in order to provide adequate (in amount and quality) products and services to support clinical development and the market demand for our approved products and product candidates, if approved;
- obtaining market acceptance of our approved products and product candidates as a treatment option;
- launching and commercializing products for which we obtain marketing approval and reimbursement, either through collaborations or, if launched independently, by establishing a sales force, marketing and distribution infrastructure;
- addressing any competing technological and market developments, in particular, declining demand for any of our approved products;
- implementing additional internal systems and infrastructure;
- negotiating favorable terms in any collaboration, licensing or other arrangements into which we may enter;
- managing our expenses;
- maintaining, defending, protecting, enforcing and expanding our portfolio of intellectual property rights, including patents, trade secrets and know-how; and
- attracting, hiring and retaining qualified personnel.

Additionally, we have incurred significant costs associated with the commercialization of our COVID-19 vaccine. Our expenses could increase beyond our expectations if we are required by the FDA, the European Medicines Agency, or "**EMA**", or other regulatory agencies to perform clinical and other trials or make changes to our manufacturing or quality systems in addition to those that we currently anticipate. Accordingly, such costs could adversely affect our future ability to achieve and maintain profitability.

1.2.4 We have incurred significant losses in the past and we may incur significant losses in the future.

Prior to the first full year of commercialization of our COVID-19 vaccine, during the year ended December 31, 2024, and during the three and six months ended June 30, 2025, we incurred significant losses from operations due to our significant research and development expenses and our investment in our manufacturing capabilities. Prior to commercialization of our COVID-19 vaccine, we funded our operations primarily from private placements or issuances of ordinary shares (including in the form of ADSs) in connection with our public offerings, generation of proceeds under our collaboration agreements, secured bank loans and issuance of a convertible note.

We have experienced, and we expect to continue to experience, increasing reductions in demand for COVID-19 vaccination generally, including for our vaccine. We expect that future revenues from sales of our COVID-19 vaccine will decrease as demand for vaccination wanes. We plan to continue to invest heavily in research and development as we make a strong drive to build out our global development organization and diversify our therapeutic area footprint. Additionally, we plan to enhance capabilities through complementary acquisitions, technologies, infrastructure and manufacturing. Even for those products for which we have obtained or may obtain regulatory approval or emergency use authorization, our future revenues will depend upon the size of any markets in which such products have received approval or authorization to market, our ability to achieve sufficient market acceptance, reimbursement from third-party payors, and adequate market share in those markets.

If achieved, profitability is difficult to maintain over time and is highly dependent on various factors. Our future financial results will depend, in part, on the rate of our future expenditures, the extent to which we experience long-term success of our commercial products and our ability to obtain funding through revenues from commercial sales, equity or debt financings, sales of assets, collaborations or grants.

As part of our capital allocation strategy, we expect to continue to incur significant and increasing operating expenses for the foreseeable future. We anticipate that our expenses will increase substantially if and as we and our collaborators:

- continue, expand, or modify our research or development of our programs in preclinical development;
- continue, expand, or modify the scope of our clinical trials for our product candidates;
- initiate additional preclinical, clinical, or other trials for our product candidates, including under our collaboration agreements;
- execute on our strategic decisions related to portfolio prioritization, which may result in certain potential one-time effects and charges and other material adverse effects on our financial condition and results of operations;
- continue to invest in our immunotherapy platforms to conduct research to identify novel technologies;
- change our manufacturing capacity or capability;
- change or add additional suppliers;
- make changes to our infrastructure in connection with our quality control, quality assurance, legal, compliance and other groups to support our operations as a public company and our product development and commercialization efforts, including changes to our sites globally;
- attract and retain skilled personnel;
- seek marketing approvals and reimbursement for our product candidates;
- develop our sales, marketing, and distribution infrastructure for our COVID-19 vaccine and any other products for which we may obtain marketing approval or emergency use authorization;
- seek to identify and validate additional product candidates;
- acquire or in-license other product candidates and technologies;
- acquire other companies;
- make milestone or other payments under any in-license agreements;
- maintain, protect, defend, enforce and expand our intellectual property portfolio; and
- experience any delays or encounter issues with any of the above.

1.2.5 The amount of, and our ability to use, net operating losses and research and development credits to offset future taxable income may be subject to certain limitations and uncertainty. In addition, pending and future tax audits within our Group, disputes with tax authorities and changes in tax law or fiscal regulations could lead to additional tax liabilities. We are subject to routine tax audits by the respective local tax authorities. Any additional tax liability could have an adverse effect on our business, financial conditions, results of operations or prospects.

In Germany, we have unused German tax loss carryforwards for corporate taxes for German group entities with pre-tax group losses, though we generally have not recognized deferred tax assets related to such loss carryforwards for reporting purposes under IFRS Accounting Standards as issued by the International Accounting Standards Board (IASB) as of June 30, 2025. Deferred tax assets are recognized for unused tax losses only to the extent that it is probable that taxable profit will be available against which the losses can be utilized. In general, net operating loss, or "**NOL**", carryforwards in Germany do not expire. Furthermore, under current German tax laws, certain substantial changes in the Company's ownership and business may further limit the amount of NOL carryforwards that can be used annually to offset future taxable income.

For the German tax group, we incurred tax losses up to and including December 31, 2020. Even though we recognized deferred tax assets on a majority of German tax loss carry forwards in 2020 which were fully utilized in 2021, they are, however, subject to review and possible adjustment by the German tax authorities. In addition, the incurred tax losses up to and including December 31, 2024 also remain subject to review.

In addition, we have U.S. federal and state NOL carryforwards due to our subsidiaries in the United States, which may be subject to limitations on use after an ownership change.

We may not be able to utilize a material portion of our historic or current NOLs or credits in either Germany (resulting from our German tax group or non-tax group entities in Germany) or the United States until these have been finally assessed by the tax authorities or when the limitation period has passed. In addition, the rules regarding the timing of revenues and expense recognition for tax purposes in connection with various transactions are complex and uncertain in many respects, and, if challenged, our recognition may be subject to a revised assessment. In the event any such challenge is sustained, our NOLs could be materially reduced, or we could be determined to be a material cash taxpayer for one or more years, which could have an adverse effect on our business, financial conditions, results of operations or prospects.

Furthermore, our ability to use our NOLs or credits is conditioned upon our attaining profitability and generating taxable income. Taxable income exceeding NOLs will be subject to taxation resulting in tax liabilities. As described above, we incurred significant net losses in every year since our inception other than 2018, 2021, 2022 and 2023 and anticipate that in the future, we may incur losses for the majority of the group entities. Our ability to utilize our NOL or credit carryforwards in the United States and for some other group entities is uncertain; however, we do recognize deferred tax assets on NOLs and tax credit carryforwards in the United States, as the requirements of IAS 12 are fulfilled.

1.2.6 Under German tax laws, we are obligated to withhold a percentage of wage tax and social security contributions on personnel expenses if contract services providers are considered to be our internal employees and remit those withholdings to German tax authorities and social security institutions. Late payments may subject us to penalties and fees.

Under German tax and social security laws, we are obligated to withhold a percentage of payments we make to third parties in consideration of the services provided, in case these are considered employment payments, and remit those withholdings to German tax authorities and social security institutions. After a significant volume of service providers were engaged to assist with research, development, manufacturing and supply of our COVID-19 vaccine, we discovered after internal review that we and certain of our subsidiaries did not withhold, report and remit certain German wage taxes and social security contributions in connection with certain contract service providers engaged in a manner comparable to internal employees, which we notified tax authorities about. If we do not properly and timely make required payments in the future, we could be subjected to fees, administrative offenses or other proceedings or penalties.

It is not possible to seek the refund of these wage taxes or social security contributions from either the German tax authorities or social security institutions after filing returns. In Germany, employers are considered secondarily liable for wage taxes.

In addition, value added taxes, or "**VAT**", on invoices received by contract services providers who are considered internal employees are considered non-deductible and must be repaid to the German tax authorities. It is possible to reclaim the VAT repaid to the German tax authorities from the service provider. There is a possibility that the relevant input VAT claims against the contract service providers may, in some instances, not be enforceable as a result of a contract service provider no longer existing, the lapse of time or any other facts preventing the enforcement of such claims, which may have a negative effect on our financial position.

1.2.7 We may require substantial additional financing to achieve our goals, and a failure to obtain this capital on acceptable terms, or at all, could force us to delay, limit, reduce or terminate our product development programs, commercialization efforts or other operations.

Our operating plans may change as a result of many factors currently unknown to us, and we may need to seek additional funds sooner than planned, through public or private equity or debt financings, government or other third-party funding, sales of assets, marketing and distribution arrangements, other collaborations and licensing arrangements, or a combination of these approaches. We may require additional capital to obtain regulatory approval for, and to commercialize, future product candidates. Even if we believe we have sufficient funds for our current or future operating plans, we may seek additional capital if market conditions are favorable or if we have specific strategic considerations. Our spending will vary based on new and ongoing development and corporate activities. Due to the high uncertainty of the length of time and activities associated with discovery and development of our product candidates, we are unable to estimate the actual funds we will require for development, marketing and commercialization activities.

Our future funding requirements, both near and long term, will depend on many factors, including, but not limited to:

- the initiation, progress, timing, costs, and results of preclinical or nonclinical studies and clinical trials for our product candidates;
- the amount and timing of revenues and associated costs from sales of our COVID-19 vaccine;
- the results of research and our other platform activities;
- the clinical development plans we establish for our product candidates;
- the terms of any agreements with our current or future collaborators, and the achievement of any milestone payments under such agreements to be paid to us or our collaborators;
- the terms of any other strategic transactions, including relating to any acquisitions, into which we enter;
- the number and characteristics of product candidates that we develop or may in-license;
- the outcome, timing and cost of meeting regulatory requirements established by the FDA, the EMA and other comparable regulatory authorities;
- the cost of filing, prosecuting, obtaining, maintaining, protecting, defending and enforcing our patent claims and other intellectual property rights, including actions for patent and other intellectual property infringement, misappropriation and other violations brought by third parties against us regarding our products or product candidates or actions by us challenging the patent or intellectual property rights of others;
- the effect of competing technological and market developments, including other products that may compete with one or more of our product candidates;

- the cost and timing of completion and further expansion of clinical and commercial scale manufacturing activities sufficient to support all of our current and future programs, including the development of modular production and clinical facilities in various markets via our *BioNTainer* network; and
- the cost of establishing sales, marketing, and distribution capabilities for any product candidates for which we may receive marketing approval and reimbursement in regions where we choose to commercialize our products on our own.

To date, we have financed our operations primarily through the sale of equity securities, revenues from collaborations, and revenues from sales of our COVID-19 vaccine. While we are currently generating product sales and royalty revenues to finance our operations, we cannot be certain that we will continue to generate sufficient revenues from product sales and royalties to finance our operations. If we were to seek financing from outside sources, that additional funding may not be available on favorable terms, or at all. Should our revenues from product sales sufficiently decrease in the future, we expect to finance our future cash needs through a combination of product sales, public or private equity offerings, debt financings, collaborations, licensing arrangements, and other marketing or distribution arrangements. Any fundraising efforts may divert our management from their day-to-day activities, which may adversely affect our ability to develop and commercialize our product candidates. In addition, we cannot guarantee that future financing will be available in sufficient amounts, at the right time, on favorable terms, or at all, including as a result of the impact that the shift of COVID-19 towards an endemic phase and other global events, such as political upheavals and economic downturns, may have on the capital markets.

Negative clinical trial data or setbacks, or perceived setbacks, in our programs or with respect to our technology could impair our ability to raise additional financing on favorable terms, or at all. Moreover, the terms of any financing may adversely affect the holdings or the rights of our shareholders, and the issuance of additional securities, whether equity or debt, by us, or the possibility of such issuance, may cause the market price of the ADSs representing our ordinary shares to decline. If we raise additional funds through public or private equity offerings, the terms of these securities may include liquidation or other preferences that may adversely affect our shareholders' rights.

Further, to the extent that we raise additional capital through the sale of ADSs, ordinary shares or securities convertible or exchangeable into ordinary shares or ADSs, share ownership interests will be diluted. If we raise additional capital through debt financing, we would be subject to fixed payment obligations and may be subject to security interests in our assets and covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, making capital expenditures or declaring dividends. If we raise additional capital through marketing and distribution arrangements, sales of assets, collaborations, or licensing arrangements with third parties, we may have to relinquish certain valuable rights to our product candidates, technologies, future revenue streams or research programs. We also could be required to seek collaborators for one or more of our current or future product candidates at an earlier stage than otherwise would be desirable or relinquish our rights to product candidates or intellectual property that we otherwise would seek to develop or commercialize ourselves. If we are unable to raise additional capital in sufficient amounts, at the right time, on favorable terms, or at all, we may have to significantly delay, scale back or discontinue the development or commercialization of one or more of our products or product candidates, or one or more of our other research and development initiatives. Any of the above events could significantly harm our business, prospects, financial condition and results of operations, cause the price of the ADSs to decline, and negatively impact our ability to fund operations.

1.2.8 We have various international trade obligations, including customs value calculation, customs tariff number classification and other related securities requirements. Late payments to customs authorities may subject us to penalties and fees.

Our supply chain, production and distribution network across the globe creates an increasing level of complexity in customs and foreign trade processes. The requirements for internal control systems are increasing and must be developed simultaneously. The risk management system for customs and foreign trade, which we are continuously improving, determines which stakeholders, goods, and means of transport should be examined and to what extent. These risks include the potential for non-compliance with customs value calculation, customs tariff number classification, trade restrictions, security regulations as well as the potential failure to facilitate international trade. We have in the past discovered that certain of our and our subsidiaries' customs value calculations were not applied correctly, following which we notified the customs authorities of potential late payments.

We are, and will likely continue to be, subject to various audits that arise from time to time, including customs and potential future foreign trade audits. If we do not properly address our international trade and customs requirements, we could be subjected to penalties and fees.

1.2.9 As a "foreign private issuer", we are exempt from a number of rules under the U.S. securities laws, as well as Nasdaq rules, and we are permitted to file less information with the SEC than U.S. companies. This may limit the information available to holders of the ADSs and may make our ordinary shares and the ADSs less attractive to investors.

We are a "foreign private issuer", as defined in the rules and regulations of the SEC, and, consequently, we are not subject to all of the disclosure requirements applicable to companies organized within the United States. For example, we are exempt from certain rules under the U.S. Securities Exchange Act of 1934, as amended, or the "**Exchange Act**", that regulate disclosure obligations and procedural requirements related to the solicitation of proxies, consents or authorizations applicable to a security registered under the Exchange Act. In addition, our officers and directors are exempt from the reporting and "short-swing" profit recovery provisions of Section 16 of the Exchange Act and related rules with respect to their purchases and sales of our securities. Moreover, we are not required to file periodic reports and financial statements with the U.S. Securities and Exchange Commission, or "**SEC**", as frequently or as promptly as U.S. public companies. Accordingly, there may be less publicly available information concerning our Group than there is for U.S. public companies.

As a foreign private issuer, we file an annual report on Form 20-F within four months of the close of each year ending December 31 and reports on Form 6-K relating to certain material events promptly after we publicly announce these events. Additionally, we rely on a provision in Nasdaq Stock Market LLC ("**Nasdaq**")'s Listed Company Manual that allows us to follow German company law and European law applicable to European stock corporations in general, the German Stock Corporation Act (*Aktiengesetz*), the Council Regulation (EC) No 2157/2001 of October 8, 2001 on the Statute for a European company (SE), or the "**SE Regulation**", and the German Act on the Implementation of Council Regulation (EC) No 2157/2001 of October 8, 2001 on the Statute for a European company (SE) (*Gesetz zur Ausführung der Verordnung (EG) NR. 2157/2001 des Rates vom 8. Oktober 2001 über das Statut der Europäischen Gesellschaft (SE)*) (*SE-Ausführungsgesetz – SEAG*), in particular with regard to certain aspects of corporate governance. This allows us to follow certain corporate governance practices that differ in significant respects from the corporate governance requirements applicable to U.S. companies listed on Nasdaq.

For example, we are exempt from regulations of Nasdaq that require a listed U.S. company to:

- have a majority of the board of directors consist of independent directors;
- require non-management directors to meet on a regular basis without management present;
- adopt a code of conduct and promptly disclose any waivers of the code for directors or executive officers that should address certain specified items;
- have an independent compensation committee;
- have an independent nominating committee;
- solicit proxies and provide proxy statements for all shareholder meetings;
- review related party transactions; and
- seek shareholder approval for the implementation of certain equity compensation plans and issuances of ordinary shares.

As a foreign private issuer, we are permitted to follow home country practice in lieu of the above requirements. We therefore continue to follow German corporate governance practices in lieu of the corporate governance requirements of Nasdaq in certain respects. In particular, we follow German corporate governance practices in connection with the distribution of annual and interim reports to

shareholders, the application of our code of conduct to our employees and the Company's supervisory board (*Aufsichtsrat*), or the "**Supervisory Board**", executive remuneration disclosure, proxy solicitation in connection with shareholders' meetings, and obtaining shareholder approval in connection with the establishment of, or material amendment to, certain equity-based compensation plans.

Our audit committee is required to comply with the provisions of Section 301 of the Sarbanes-Oxley Act and Rule 10A-3 of the Exchange Act, both of which are also applicable to U.S. companies listed on Nasdaq. As we are a foreign private issuer, however, our audit committee is not subject to additional requirements of Nasdaq applicable to listed U.S. companies, including an affirmative determination that all members of the audit committee are "independent", using more stringent criteria than those applicable to us as a foreign private issuer.

Due to the above exemptions for foreign private issuers, our shareholders will not be afforded the same protections or information generally available to investors holding shares in public companies organized in the United States, some investors may find the ADSs less attractive as a result, and there may be a less active trading market for the ADSs.

1.2.10 Our insurance policies are expensive and protect us only from some business risks, which leaves us exposed to significant uninsured liabilities.

We do not carry insurance for all categories of risk that our business may encounter and insurance coverage is becoming increasingly expensive. We do not know if we will be able to maintain existing insurance with adequate levels of coverage, and any liability insurance coverage we acquire in the future may not be sufficient to reimburse us for any expenses or losses we may suffer. We currently maintain insurance coverage for losses relating to property damage, business interruption, transportation, product liability, cyber matters, clinical trials, and several other areas of coverage. For example, attracting and retaining qualified individuals to serve on the Company's Supervisory Board and the Company's management board (*Vorstand*), or the "**Management Board**", requires that we obtain and maintain adequate director and officer liability insurance, which has increased in cost as our operations have evolved. We are dedicating resources to exploring additional avenues for more adequate coverage as our business evolves. However, the coverage or coverage limits of our insurance policies may not be adequate. If our losses exceed our insurance coverage, our financial condition would be adversely affected. In the event of contamination or injury, we could be held liable for damages or be penalized with fines in an amount exceeding our resources. Clinical trials or regulatory approvals for any of our product candidates could be suspended, which could adversely affect our results of operations and business, including by preventing or limiting the development and commercialization of any product candidates that we or our collaborators may develop.

Additionally, operating as a public company has made it more expensive for us to obtain director and officer liability insurance. As a result, it may be more difficult for us to attract and retain qualified individuals to serve on the Supervisory Board, the Management Board, or our board committees.

1.2.11 Adverse developments affecting financial institutions, companies in the financial services industry or the financial services industry generally, such as actual events or concerns involving liquidity, defaults or non-performance, could adversely affect our operations and liquidity.

Actual events involving limited liquidity, defaults, non-performance or other adverse developments that affect financial institutions or other companies in the financial services industry or the financial services industry generally, or concerns or rumors about any events of these kinds, have in the past and may in the future lead to market-wide liquidity problems.

There is no guarantee that the U.S. Department of Treasury, the Federal Deposit Insurance Corporation, and Federal Reserve Board will provide access to uninsured funds in a timely fashion, or at all, in the event of the closure of banks or financial institutions.

While we maintain our cash and cash equivalents in multiple financial institutions worldwide, our access to our cash and cash equivalents in amounts adequate to finance our operations could be significantly impaired by the financial institutions with which we have arrangements directly facing liquidity constraints or failures. In addition, investor concerns regarding the U.S. or international financial systems could

result in less favorable commercial financing terms, including higher interest rates or costs and tighter financial and operating covenants, or systemic limitations on access to credit and liquidity sources, thereby making it more difficult for us to acquire financing on acceptable terms or at all. Any material decline in available funding or our ability to access our cash and cash equivalents could adversely impact our ability to meet our operating expenses, result in breaches of our contractual obligations or result in violations of federal or state wage and hour laws, any of which could have material adverse impacts on our operations and liquidity.

1.3 Risks Related to our Business

1.3.1 Our business is dependent on the successful development, regulatory approval and commercialization of product candidates based on our technology platforms. If we and our collaborators are unable to obtain approval for and effectively commercialize our product candidates for the treatment of patients in their intended indications, our business would be significantly harmed.

Even if we complete the necessary preclinical studies and clinical trials, the marketing approval process is expensive, time-consuming and uncertain, and we may not be able to obtain approvals for the commercialization of product candidates we may develop. Any product candidates we may develop and the activities associated with their development and commercialization, including design, testing, manufacture, recordkeeping, labeling, storage, approval, advertising, promotion, sale and distribution, are subject to comprehensive regulation by the FDA and by comparable global health authorities. To obtain the requisite regulatory approvals required to commercialize any of our product candidates, we and our collaborators must demonstrate through extensive preclinical studies and clinical trials that our product candidates are safe and effective for their intended use in the relevant target population. Successful completion of clinical trials is a prerequisite to submitting a biologics license application, or "**BLA**", or a new drug application, or "**NDA**", to the FDA, a Marketing Authorization Application, or "**MAA**", to the EMA, and similar marketing applications to comparable global regulatory authorities, for each product candidate and, consequently, the ultimate approval and commercial marketing of any product candidates.

Failure to obtain marketing approval for a product candidate will prevent us from commercializing the product candidate in a given jurisdiction. Although our COVID-19 vaccine has received emergency use authorization and/or regulatory approvals in certain countries, it is possible that none of our other product candidates, or any product candidates we may seek to develop in the future, will ever obtain regulatory approval. We have limited experience in filing and supporting the applications necessary to gain marketing approvals and may need to rely on third-party contract research organizations, or "**CROs**", regulatory consultants or collaborators to assist us in this process. We expect to submit initial BLAs/MAAs for our mRNA-based product candidates in the United States, the European Union and in other countries globally. In some of these jurisdictions, mRNA-based medicinal products may be classified in different ways and may be subject to specific requirements. Securing regulatory approval requires the submission of extensive quality, preclinical and clinical data and supporting information to the various regulatory authorities for each therapeutic indication to establish the product candidate's safety and efficacy. Securing regulatory approval also requires the submission of information about the product manufacturing process to, and inspection of manufacturing facilities by, the relevant regulatory authority. Benefit and risk are regularly assessed, and any product candidates we develop may not be effective, may be only moderately effective, or may prove to have undesirable or unintended side effects, toxicities or other characteristics that may preclude our obtaining marketing approval or prevent or limit commercial use.

The process of obtaining marketing approvals in the United States, the European Union and elsewhere is expensive, may take many years if additional clinical trials are required, if approval is obtained at all, and can vary substantially based upon a variety of factors, including the type, complexity and novelty of the product candidates involved. Changes in marketing approval policies and standards of care during the development period, changes in or the enactment of additional statutes or regulations, or changes in regulatory review for each submitted product application may cause delays in the approval or rejection of an application. The FDA, EMA and comparable regulatory authorities in other countries have substantial discretion in the approval process and may refuse to accept any application or may decide that the data are insufficient for approval and require additional preclinical, clinical or other trials. In

addition, varying interpretations of the data obtained from preclinical and clinical testing could delay, limit or prevent marketing approval of a product candidate. Any marketing approval we ultimately obtain may be limited or subject to restrictions or post-approval commitments that render the approved product not commercially viable. Additional delays or non-approval may result if an FDA panel of experts, referred to as an Advisory Committee, or other regulatory authority recommends non-approval or restrictions on approval. In addition, we may experience delays or rejections based upon additional government regulation from future legislation or administrative action, or changes in regulatory agency policy during the period of product development, clinical trials, and the review process. Officials appointed by the new U.S. presidential administration to oversee the agencies involved with approval of drugs and biologics may seek to change regulatory requirements for approval or the approach to reviewing applications. Together with changes of regulatory policy priorities and allocated resources, this could cause further delays, expense or non-approvals.

Regulatory agencies also may approve a product candidate for fewer or more limited indications or patient populations than requested or may grant approval subject to the conduct of post-marketing studies. In addition, regulatory agencies may not approve the labeling claims that are necessary or desirable for the successful commercialization of our product candidates.

The FDA, EMA and other regulatory agencies review the Quality or Chemistry, Manufacturing and Controls, or "**CMC**", section of regulatory filings. Any aspects found unsatisfactory by regulatory agencies may result in delays in clinical trials and commercialization. In addition, the regulatory agencies typically conduct pre-approval inspections at the time of a BLA, MAA or comparable filing. Any findings by regulatory agencies and failure to comply with requirements may lead to delay in approval and failure to commercialize the potential mRNA product candidate.

If we experience delays in obtaining, or if we fail to obtain, approval of any product candidates we may develop, the commercial prospects for those product candidates will be harmed, and our ability to generate revenues will be materially impaired. Additionally, even if we are successful in obtaining marketing approval for product candidates, because our preclinical studies and clinical trials have not been designed with specific commercialization considerations, the commercial prospects for those product candidates could be harmed, and our ability to generate revenues could be materially impaired.

1.3.2 Clinical development involves a lengthy and expensive process with an uncertain outcome, and delays can occur for a variety of reasons outside of our control. Clinical trials of our product candidates may be delayed, certain programs may never advance in the clinic or may be more costly to conduct than we anticipate, and we may have difficulty recruiting patients to participate in clinical trials, any of which can affect our ability to fund our company and would have a material adverse impact on our business.

Clinical testing is expensive and complex and can take many years to complete. Its outcome is inherently uncertain. We may not be able to initiate, may experience delays in, or may have to discontinue clinical trials for our product candidates. We and our collaborators also may experience numerous unforeseen events during, or as a result of, any clinical trials that we or our collaborators conduct that could delay or prevent us or our collaborators from successfully developing our product candidates, including:

- the FDA, other regulators, institutional review boards, or "**IRBs**", or ethics committees may not authorize us or our investigators to commence a clinical trial or conduct a clinical trial at a prospective trial site for any number of reasons, including concerns regarding safety and aspects of the clinical trial design;
- we may experience delays in reaching, or fail to reach, agreement on favorable terms with prospective trial sites and prospective CROs, the terms of which can be subject to extensive negotiation and may vary significantly among different CROs and trial sites;
- we have optimized in the past and may in the future optimize our manufacturing processes, including through changes to the scale and site of manufacturing, which may lead to additional studies (including bridging and bioequivalence studies) or potentially significant changes in our clinical trial designs, requiring additional cost and time, and, as a consequence, lead to a delay in plans for progressing one or more product candidates;

- the outcome of our preclinical studies and our early clinical trials may not be predictive of the success of later clinical trials, and interim results of a clinical trial do not necessarily predict final results;
- we may be unable to establish clinical endpoints that applicable regulatory authorities would consider clinically meaningful;
- in an effort to optimize product features, we have made in the past and may continue to make changes to our product candidates after we commence clinical trials of a medicine which may require us to repeat earlier stages of clinical testing or delay later-stage testing of the medicine;
- clinical trials of any product candidates may fail to show safety or efficacy, or may produce negative or inconclusive results, and we may decide, or regulators may require us, to conduct additional nonclinical studies or clinical trials, or we may decide to abandon product development programs;
- differences in trial design between early-stage clinical trials and later-stage clinical trials may make it difficult to extrapolate the results of earlier clinical trials to later clinical trials;
- preclinical and clinical data are often susceptible to varying interpretations and analyses, and many product candidates believed to have performed satisfactorily in preclinical studies and clinical trials have nonetheless failed to obtain marketing approval;
- our product candidates may have undesirable effects or other unexpected characteristics. One or more of such effects or events could cause regulators to impose a clinical hold on the applicable trial, or cause us or our investigators, IRBs or ethics committees to suspend or terminate the trial of that product candidate or any other of our product candidates for which a clinical trial may be ongoing;
- the number of trial participants required for clinical trials of any product candidates may be larger than we anticipate, identification of trial participants for such trials may be limited, enrollment in these clinical trials may be slower than we anticipate due to perceived adverse effects, limited patient populations, competitive trials, risks related to COVID-19 or other reasons, or participants may withdraw from clinical trials or fail to return for post-treatment follow-up at a higher rate than we anticipate;
- despite robust sponsor oversight, our and our collaborators' third-party contractors may fail to comply with regulatory requirements or meet their contractual obligations in a timely manner, or at all, or may deviate from the clinical trial protocol or withdraw from the trial, which may require the addition of new clinical trial sites;
- regulators may elect to impose a clinical hold, or we, our investigators, IRBs or ethics committees may elect to suspend or terminate clinical research or trials for various reasons, including noncompliance with regulatory requirements or a finding that the participants are being exposed to an unacceptable benefit-risk ratio;
- with respect to infectious disease vaccine trials in particular, we have to wait for particular level of infection in the placebo arm in order to assess protection provided by vaccine, and we cannot control the rate of exposure or infection which can make timing uncertain;
- the cost of preclinical or nonclinical testing and studies and clinical trials of any product candidates may be greater than we anticipate;
- the supply or quality of our product candidates or other materials necessary to conduct clinical trials may be insufficient or inadequate;
- safety or efficacy concerns regarding our product candidates may result from any concerns arising from nonclinical or clinical testing of other therapies targeting a similar disease state or other therapies, such as gene therapy, that are perceived as similar to ours; and
- the FDA or other regulatory authorities may require us to submit additional data, such as long-term toxicology studies, or impose other requirements before permitting us to initiate a clinical trial.

We could also encounter delays if a clinical trial is suspended or terminated by us, the FDA or other regulatory authorities, ethics committees, or the IRBs of the institutions in which such trials are being conducted, or if such trial is recommended for suspension or termination by the Data Safety Monitoring Board, or "**DSMB**". We may in the future be delayed in gaining clearance from the FDA or other regulators to initiate clinical trials through, among other things, the imposition of a clinical hold in order

to address comments from such regulators on our clinical trial design or other elements of our clinical trials. A suspension or termination may be imposed due to a number of factors, including failure to conduct the clinical trial in accordance with regulatory requirements or our clinical protocols; inspection of the clinical trial operations or trial site by the FDA or other regulatory authorities resulting in the imposition of a clinical hold; unforeseen safety issues or adverse side effects; failure to demonstrate a benefit, or adequate benefit-risk ratio, from using a product candidate; failure to establish or achieve clinically meaningful trial endpoints; changes in governmental regulations or administrative actions; or lack of adequate funding to continue the clinical trial. Many of the factors that cause or lead to a delay in the commencement or completion of clinical trials may also ultimately lead to the denial of regulatory approval of our product candidates. We could also experience delays if physicians encounter unresolved ethical issues associated with enrolling patients in clinical trials of our product candidates in lieu of prescribing existing treatments that have established safety and efficacy profiles. We must also complete extensive work on CMC activities that require extensive manufacturing processes and analytical development, which are uncertain and lengthy.

Significant additional preclinical or nonclinical testing and studies or clinical trial delays for our product candidates also could allow our competitors to bring products to market before we do, potentially impairing our ability to successfully commercialize our product candidates and harming our business and results of operations. Any delays in the development, or the suspension of development, of our product candidates may harm our business, financial condition and prospects significantly.

In addition, on June 28, 2024, the Supreme Court of the United States overturned the *Chevron* doctrine in the combined cases of *Loper Bright Enterprises v. Raimondo* and *Relentless Inc. v. Department of Commerce*. The *Chevron* doctrine gave deference to regulatory agencies in litigation against the FDA and other agencies. In addition, the Supreme Court decided *Corner Post, Inc. v. Board of Governors of the Federal Reserve System*, which lengthened the time in which some challenges to agency rules can be initiated. As a result of these cases, more plaintiffs may bring lawsuits against the FDA to challenge longstanding decisions and policies of the FDA, which could undermine the FDA's authority, lead to uncertainties in the industry, and disrupt the FDA's normal operations, which could delay the FDA's review of our marketing applications.

1.3.3 We and our collaborators or other contractors or consultants depend on information technology systems, and any failure of these systems could harm our business. Security breaches, loss of data and other disruptions could compromise sensitive information related to our business or prevent us from accessing critical information and expose us to liability, which could adversely affect our business, results of operations and financial condition.

Our internal computer systems and those of our current and any future collaborators, vendors, and other contractors or consultants are vulnerable to damage from computer viruses, unauthorized access, natural disasters, terrorism, cybersecurity threats, war, and telecommunication and electrical failures. If any such material system failure, accident or security breach were to occur and cause interruptions in our operations, it could result in a material disruption of our development programs and our business operations, whether due to a loss of our trade secrets or other proprietary information or other similar disruptions. For example, the loss of clinical trial data from one or more ongoing or completed or future clinical trials could result in delays in our regulatory approval efforts and significantly increase our costs to recover or reproduce the data. In addition, because of our approach of running multiple clinical trials in parallel, any breach of our computer systems may result in a loss of data or compromised data integrity across many of our programs in many stages of development. Any such breach, loss or compromise of clinical trial participant personal data may also subject us to civil fines and penalties, including under the EU General Data Protection Regulation, or the "**GDPR**", relevant law of an EU member state, the United States' Health Insurance Portability and Accountability Act, and other relevant state and federal privacy laws in the United States or in other jurisdictions. To the extent that any disruption or security breach were to result in a loss of, or damage to, data or applications, or inappropriate disclosure of confidential or proprietary information, we could incur liability, our competitive position could be harmed, and the further development and commercialization of our product candidates could be delayed.

While we have not experienced any material system failures, accidents or security breaches to date, in December 2020, we were informed by the EMA that the agency was subject to a cyberattack and that some documents relating to our regulatory submission for our COVID-19 vaccine candidate, which was stored on an EMA server, had been unlawfully accessed. None of our systems were breached in connection with this incident and we are unaware that any study participants were identified through the data being accessed.

We have put systems and procedures in place to minimize the likelihood of such incidents reoccurring; however, we cannot guarantee that third parties will not be able to gain unauthorized access to or otherwise breach our systems in the future. Any such unauthorized access or breach could adversely affect our business, results of operations and financial condition.

1.3.4 mRNA drug development carries substantial clinical development and regulatory risks.

We expect the novel nature of our product candidates to create further challenges in obtaining regulatory approval. For example, the FDA and regulatory authorities in other jurisdictions have limited experience with commercial development of several of our technologies. To our knowledge, other than our and Moderna, Inc.' COVID-19 vaccines, no mRNA immunotherapies have been approved or received emergency use authorization or conditional marketing authorization to date by the FDA or the EMA. Successful discovery and development of mRNA-based (and other) immunotherapies by either us or our collaborators is highly uncertain and depends on numerous factors, many of which are beyond our or their control. The FDA may require an Advisory Committee to deliberate on the adequacy of the safety and efficacy data to support licensure. The opinion of the Advisory Committee, although not binding, may have a significant impact on our ability to obtain licensure of the product candidates based on the completed clinical trials, as the FDA often adheres to the Advisory Committee's recommendations. Accordingly, the regulatory approval pathway for our product candidates may be uncertain, complex, expensive and lengthy, and approval may not be certain. Our product candidates that appear promising in the early phases of development may fail to advance, experience delays in the clinic or clinical holds, or fail to reach the market for many reasons, including:

- discovery efforts aimed at identifying potential immunotherapies may not be successful;
- nonclinical or preclinical study results may show product candidates to be less effective than desired or have harmful or problematic side effects;
- clinical trial results may show the product candidates to be less effective than expected, including a failure to meet one or more endpoints or have unacceptable side effects or toxicities;
- manufacturing or distribution failures or insufficient supply of GMP materials for clinical trials or higher than expected cost could delay or set back clinical trials, or make our product candidates commercially unattractive;
- our improvements in the manufacturing processes may not be sufficient to satisfy the clinical or commercial demand of our product candidates or regulatory requirements for clinical trials;
- changes that we make to optimize our manufacturing, testing or formulating of GMP materials could impact the safety, tolerability and efficacy of our product candidates;
- pricing or reimbursement issues or other factors could delay clinical trials or make any immunotherapy uneconomical or noncompetitive with other therapies;
- changing social and political preferences regarding vaccines and mRNA therapies;
- the failure to timely advance our programs or receive the necessary regulatory approvals, or a delay in receiving such approvals, due to, among other reasons, slow or failure to complete enrollment in clinical trials, withdrawal by trial participants from trials, failure to achieve trial endpoints, additional time requirements for data analysis, data integrity issues, BLA, MAA or the equivalent application, discussions with the FDA or the EMA, a regulatory request for additional nonclinical or clinical data, or safety formulation or manufacturing issues may lead to our inability to obtain sufficient funding; and
- the proprietary rights, products and technologies of our competitors may prevent our immunotherapies from being commercialized.

Moreover, the FDA and other regulatory authorities have indicated that, prior to commencing later stage clinical trials for our mRNA-based product candidates, we will need to scale up and further refine assays to measure and predict the potency of a given dose of these product candidates. Any delay in the scaling and refining of assays that are acceptable to the FDA or other regulatory authorities could delay the start of future clinical trials. Further, the FDA or other regulatory authorities may disagree with our clinical trial design and our interpretation of data for our clinical trials or may change the requirements for approval even after they have reviewed and commented on the design for our clinical trials.

1.3.5 Our product candidates may not work as intended, may cause undesirable effects or may have other properties that could delay or prevent their regulatory approval, limit the commercial profile of an approved label, or result in significant negative consequences following marketing approval, if any.

As with most medicinal products, use of our product candidates could be associated with undesirable effects or adverse events which can vary in severity from minor reactions to death and in frequency from infrequent to prevalent. The potential for adverse events is especially acute in the oncology setting, where patients may have advanced disease, have impaired organ function, compromised immune and other systems and may be receiving numerous other therapies. Undesirable side effects or unacceptable toxicities caused by our product candidates could cause us or regulatory authorities to interrupt, delay or halt clinical trials and could result in a more restrictive label or the delay or denial of regulatory approval by the FDA, the EMA or comparable regulatory authorities. Results of our trials could reveal a high and unacceptable severity and prevalence of side effects.

If unacceptable side effects arise in the development of our product candidates, we, the FDA, competent authorities of EU member states, ethics committees, the IRBs at the institutions in which our studies are conducted, or the DSMB could suspend or terminate our clinical trials. The FDA or comparable regulatory authorities could also order us to cease clinical trials or deny approval of our product candidates for any or all targeted indications. Treatment-related side effects could also affect patient recruitment or the ability of enrolled patients to complete any of our clinical trials or result in product liability claims. In addition, these side effects may not be appropriately recognized or managed by the treating medical staff. We expect to have to train medical personnel using our product candidates to understand the side effect profiles for our clinical trials and upon any commercialization of any of our product candidates. Inadequate training in recognizing or managing the potential side effects of our product candidates could result in patient injury or death. Any of these occurrences may harm our business, financial condition and prospects significantly.

1.3.6 Clinical trials are strictly regulated and monitored by regulatory agencies, ethics committees, and sponsors. Despite this rigorous oversight, unexpected events may occur that could adversely impact patients' safety and/or affect our ability to obtain regulatory approvals and, if approved, commercialize our product candidates.

In our ongoing and planned clinical trials, we have contracted, and are expected to continue to contract, with academic medical centers and hospitals experienced in the assessment and management of toxicities arising during clinical trials. Nonetheless, these centers and hospitals may have difficulty observing patients and treating toxicities, which may be more challenging due to personnel changes, inexperience, shift changes, house staff coverage or related issues. This could lead to more severe or prolonged toxicities or even patient deaths, which could result in us or the FDA, the EMA or other comparable regulatory authority delaying, suspending or terminating one or more of our clinical trials, and which could jeopardize regulatory approval. The centers using our products, if and when approved, could also have difficulty managing any adverse effects of our products, or use medicines that do not adequately control such undesirable effects or that have a detrimental impact on the efficacy of the treatment.

In addition, even if we successfully advance our product candidates into and through clinical trials, such trials will likely only include a limited number of patients and limited duration of exposure to our product candidates. As a result, we cannot be assured that adverse effects of our product candidates will not be uncovered when a significantly larger number of patients are exposed to the product candidate. Further, any clinical trials may not be sufficient to determine the effects and safety consequences of taking our product candidates over a multi-year period.

If any of our product candidates receives marketing approval and we or others later identify undesirable effects caused by such products, a number of potentially significant negative consequences could result, including:

- regulatory authorities may withdraw their approval of the product;
- we may be required to recall a product or change the way such product is administered to patients;
- additional restrictions may be imposed on the marketing of the particular product or the manufacturing processes for the product or any component thereof;
- regulatory authorities may require the addition of labeling statements, such as a "black box" warning or a contraindication;
- we may be required to implement a Risk Evaluation and Mitigation Strategy, or "**REMS**", or create a Medication Guide outlining the risks of such side effects for distribution to patients;
- we could be sued and held liable for harm caused to patients;
- the product may become less competitive; and
- our reputation may be negatively impacted.

Any of the foregoing events could prevent us from achieving or maintaining market acceptance of the particular product candidate, if approved, and result in the loss of significant revenues to us, which would materially and adversely affect our results of operations and business. In addition, if one or more of our product candidates or our immunotherapy approach generally prove to be unsafe, our technology platforms and pipeline could be affected, which would have a material and adverse effect on our business, financial condition, results of operations and prospects.

1.3.7 Preclinical development is uncertain. Our preclinical programs may experience delays or may never advance to clinical trials, which would adversely affect our ability to obtain regulatory approvals or commercialize these programs on a timely basis or at all and would have an adverse effect on our business.

Much of our pipeline is in preclinical development and these programs could be delayed or not advance into the clinic. Before we can initiate clinical trials for product candidates, we must complete extensive preclinical studies, including IND-enabling Good Laboratory Practice toxicology testing, that support our planned Investigational New Drug applications, or "**INDs**", in the United States or similar applications in other jurisdictions. We must also complete extensive work on CMC activities (including collecting yield, purity and stability data) to be included in the IND filing. CMC activities for a new category of medicines such as mRNA therapies require extensive manufacturing processes and analytical development, which are uncertain and lengthy. For instance, batch failures have occurred as we scale up our manufacturing and may occur in the future. In addition, we have had in the past, and may in the future have, difficulty identifying appropriate buffers and storage conditions to enable sufficient shelf life of batches of our preclinical or clinical product candidates. If we are required to produce new batches of our product candidates due to insufficient shelf life, it may delay the commencement or completion of preclinical or clinical trials of such product candidates. For example, we cannot be certain of the timely completion or outcome of our preclinical testing and studies and cannot predict if the FDA or other regulatory authorities will accept the results of our preclinical testing or our proposed clinical programs or if the outcome of our preclinical testing, studies and CMC activities will ultimately support the further development of our programs. As a result, we cannot be sure that we will be able to submit INDs or similar applications for our preclinical programs on the timelines we expect, if at all, and we cannot be sure that submission of INDs or similar applications will result in the FDA or other regulatory authorities allowing clinical trials to begin, which would adversely affect our ability to commercialize these programs on a timely basis or at all and would have an adverse effect on our business.

1.3.8 If we or our collaborators encounter difficulties enrolling participants in our clinical trials, our clinical development activities could be delayed or otherwise adversely affected.

We depend on enrollment of participants in our clinical trials for our product candidates. In the past, our collaborators have found, and we or our collaborators may in the future find, it difficult to enroll trial participants in our clinical studies, which could delay or prevent clinical studies of our product candidates. Identifying and qualifying trial participants to participate in clinical studies of our product candidates is critical to our success. The timing of our clinical studies depends on the speed at which we can recruit trial participants to participate in testing our product candidates. Delays in enrollment may result in increased costs or may affect the timing or outcome of the planned clinical trials, which could prevent completion of these trials and adversely affect our ability to advance the development of our product candidates. If trial participants are unwilling to participate in our studies because of negative publicity from adverse events in our trials or other trials of similar products, or those related to specific a therapeutic area, or for other reasons, including competitive clinical studies for similar patient populations, the timeline for recruiting trial participants, conducting studies, and obtaining regulatory approval of potential products may be delayed. These delays could result in increased costs, delays in advancing our product development, delays in testing the effectiveness of our product, or termination of the clinical studies altogether.

We may not be able to identify, recruit and enroll a sufficient number of trial participants, or those with required or desired characteristics to achieve diversity in a study, to complete our clinical trials in a timely manner. Patient and subject enrollment is affected by factors including:

- severity of the disease under investigation;
- complexity and design of the study protocol;
- size of the patient population;
- eligibility criteria for the study in question;
- proximity and availability of clinical study sites for prospective trial participants;
- availability of competing therapies and clinical trials, including between our own clinical trials;
- efforts to facilitate timely enrollment in clinical trials;
- patient referral practices of physicians;
- ability to monitor trial participants adequately during and after treatment;
- ability to recruit clinical trial investigators with the appropriate competencies and experience;
- clinicians' and trial participants' perceptions of the potential advantages and side effects of the product candidate being studied in relation to other available therapies, including any new drugs or treatments that may be approved for the indications we are investigating;
- our ability to obtain and maintain participant informed consent;
- major changes in the approval status of competitor investigational products during the clinical trial period; and
- the risk that trial participants enrolled in clinical trials will not complete a clinical trial.

In addition, our clinical trials may compete with other clinical trials for product candidates that are in the same therapeutic areas as our product candidates, and this competition will reduce the number and types of trial participants available to us because some trial participants who might have opted to enroll in our trials may instead opt to enroll in a trial being conducted by a third party. Since the number of qualified clinical investigators is limited, we expect to conduct some of our clinical trials at the same clinical trial sites that some of our competitors use, which will reduce the number of trial participants who are available for our clinical trials at such clinical trial sites. Moreover, because in some cases our product candidates represent a therapeutic novelty in contrast to more traditional methods for disease treatment and prevention, potential trial participants and their doctors may be inclined to use conventional therapies or other investigational therapies rather than enroll trial participants in any future clinical trial involving more novel product candidates. Additionally, if new product candidates, such as

gene editing therapies, show encouraging results, potential trial participants and their doctors may be inclined to enroll trial participants in clinical trials using those product candidates. If such new product candidates show discouraging results or other adverse safety indications, potential trial participants and their doctors may be less inclined to enroll trial participants in our clinical trials, which may materially adversely affect the prospects of our product candidates.

In particular, certain conditions for which we plan to evaluate our current product candidates are rare diseases with limited patient pools from which to draw for clinical trials. The eligibility criteria of our clinical trials will further limit the pool of available trial participants. Additionally, the process of finding and diagnosing patients may prove costly. Each of the foregoing risks may continue to be affected by the spread of seasonal viral infections, including COVID-19, as well as the potential for any new pandemic caused by an as-yet-unknown agent.

1.3.9 We, our collaborators, and other third parties on whom we rely conduct various activities, including research, clinical trials, manufacturing and, where approved, marketing, in jurisdictions across the globe. Such activities are subject to a variety of risks which could materially and adversely affect our business.

Our activities increasingly span different jurisdictions. For example, clinical trials of our product candidates are currently being conducted in several countries, and we plan to commercialize our product candidates, if approved, globally. Accordingly, we are subject to additional risks related to operating in multiple countries, including:

- differing regulatory requirements in such countries;
- unexpected changes in tariffs, trade barriers, price and exchange controls and other regulatory requirements;
- increased difficulties in managing the logistics and transportation of storing and shipping product candidates produced in Germany and shipping the product candidate to the patient abroad;
- import and export requirements and restrictions;
- restrictions on transfers of information, including certain technologies and personal data;
- economic weakness, including inflation, or changes to the political climate, public sentiment, and government policy preferences in certain economies and markets;
- compliance with tax, employment, immigration and labor laws for employees living or traveling abroad;
- taxes, including withholding of payroll taxes;
- currency fluctuations, which could result in increased operating expenses and reduced revenues, and other obligations incident to doing business in another country;
- difficulties staffing and managing operations outside of Germany;
- workforce uncertainty in countries where labor unrest is more common;
- differing payor reimbursement regimes, governmental payors or patient self-pay systems, and price controls;
- potential liability under the U.S. Foreign Corrupt Practices Act of 1977 or comparable regulations in other jurisdictions;
- challenges enforcing our contractual and intellectual property rights, especially in those countries that do not respect and protect intellectual property rights to the same extent as Germany and the United States;
- production shortages resulting from any events affecting raw material supply or manufacturing capabilities abroad; and
- business interruptions resulting from geopolitical actions, including war and terrorism, or public health epidemics or pandemics.

As part of our global operations, we and our collaborators rely on relationships with entities based in various jurisdictions, including for clinical research and manufacturing activities and other regional operational needs. Such relationships may involve the use of our or others' intellectual property. We expect to continue to rely on such entities, which include locally-based contract manufacturing organizations, or "**CMOs**", and CROs, in the future. For example, we and our collaborators rely on WuXi Biologics Co., Ltd. and its affiliates for outsourcing activities related to manufacturing and the supply chain, research and development, certain IP, and commercialization readiness for certain of our product candidates. Such entities are subject to evolving local regulatory requirements, and may also be subject to U.S. and EU legislation, including the proposed U.S. BIOSECURE Act, sanctions, trade restrictions, and/or other regulations. Such requirements could increase the cost or reduce the supply of material available to us, delay the procurement or supply of such material, or have an adverse affect on our ability to secure significant commitments from governments to purchase our potential therapies. Further, governments may turn, and have turned, to trade barriers to protect their domestic industries against foreign imports, thereby increasing our cost to operate globally. If significant tariffs or other restrictions are imposed on imports by the United States and related countermeasures are taken by impacted countries, including as described in section "*1.1.7 Government policies, including relating to manufacturing, export controls, or tariffs, and negative public perception regarding vaccines and mRNA-based therapeutics could severely and adversely impact the manufacturing and sales of our COVID-19 vaccine and other product candidates we may develop, if approved.*", our business, including operating results, cash flows, and financial condition, may be adversely affected. While tariffs with certain countries have been temporarily reduced or paused, the imposition of new tariffs will likely be met with further reciprocal tariffs, thus increasing the possibility of a global trade war. If further tariffs are imposed on a broader range of imports, or if retaliatory trade measures are enacted by affected countries, these factors could significantly increase the cost to our global clinical research and manufacturing activities, adversely affect the commercial sale of our COVID-19 vaccines, and harm our competitive position in key markets. Additionally, ongoing trade tensions and uncertainty regarding future trade policies could negatively impact global economic conditions and consumer confidence, further affecting our global operations.

The extent to which the COVID-19 virus continues to impact our operations, including our clinical trial operations, in its endemic stage will depend on future developments, which are highly uncertain and cannot be predicted with confidence, including new outbreaks, new information which may emerge concerning the severity of COVID-19 and the actions to contain COVID-19 or treat its impact, among others. In the future, similar events could affect our ability to manufacture and commercialize our product candidates.

As noted above, we and our partners have conducted and are expecting in the future to conduct clinical trials for our product candidates at clinical sites located outside of the United States. Although the FDA may accept data from clinical trials outside the United States that are not conducted under an IND, acceptance of this data in support of a marketing application or IND requires the clinical trial to have been conducted in accordance with GCPs, and that the FDA is able to validate the data from the clinical trial through an onsite inspection if it deems such inspection necessary. Where data from non-U.S. clinical trials are intended to serve as the sole basis for marketing approval in the United States, the FDA will not approve the application on the basis of non-U.S. data alone unless those data are considered applicable to the U.S. patient population and U.S. medical practice, the clinical trials were performed by clinical investigators of recognized competence, and the data is considered valid without the need for an onsite inspection by the FDA or, if the FDA considers such an inspection to be necessary, the FDA is able to validate the data through an onsite inspection or other appropriate means. There can be no assurance the FDA will accept data from clinical trials conducted outside of the United States in support of a marketing application. If the FDA does not accept data from our clinical trials of our product candidates, it would likely result in the need for additional clinical trials, which would be costly and time-consuming and delay or permanently halt our development of a product candidate.

These and other risks associated with our international operations and our collaborations with our collaborators may materially adversely affect our ability to attain or maintain profitable operations.

1.3.10 Interim top-line and preliminary data from studies or trials that we announce or publish from time to time may change as more data become available and are subject to audit and verification procedures that could result in material changes in the final data.

From time to time, we may publish interim top-line or preliminary data from preclinical studies or clinical trials. Interim data are subject to the risk that one or more of the outcomes may materially change as more data become available. We also make assumptions, estimations, calculations and conclusions as part of our analyses of data, and we may not have received or had the opportunity to fully evaluate all data. As a result, the top-line results that we report may differ from future results of the same studies, or different conclusions or considerations may qualify such results, once additional data have been received and fully evaluated. Preliminary or top-line data also remain subject to audit and verification procedures that may result in the final data being materially different from the preliminary data we previously published. As a result, interim and preliminary data should be viewed with caution until the final data are available. Additionally, interim data from clinical trials that we may complete are subject to the risk that one or more of the clinical outcomes may materially change as patient enrollment continues and more patient data become available. Adverse differences between preliminary or interim data and final data could significantly harm our business prospects.

Further, others, including regulatory agencies, may not accept or agree with our assumptions, estimates, calculations, conclusions or analyses or may interpret or weigh the importance of data differently, which could impact the value of the particular program, the approvability or commercialization of the particular product candidate or product and our company in general. In addition, the information we choose to disclose publicly regarding a particular study or clinical trial is based on what is typically extensive information, and our securityholders may not agree with what we determine is the material or otherwise appropriate information to include in our disclosure. Any information we determine not to disclose may ultimately be deemed significant by our securityholders or others with respect to future decisions, conclusions, views, activities or otherwise regarding a particular product candidate or our business. If the top-line data that we report differ from actual results, or if others, including regulatory authorities, disagree with the conclusions reached, our ability to obtain approval for, and commercialize, product candidates may be harmed, which could significantly harm our business prospects.

1.3.11 Results of earlier studies and trials of our product candidates may not be predictive of future trial results.

Success in preclinical studies and early clinical trials does not ensure that later clinical trials will be successful. A number of companies in the biotechnology and pharmaceutical industries have suffered significant setbacks in clinical trials, even after positive results in earlier preclinical studies or clinical trials. These setbacks have been caused by, among other things, preclinical findings made while clinical trials were underway and safety or efficacy observations made in clinical trials, including previously unreported adverse events. Notwithstanding any potential promising results in earlier studies and trials, we cannot be certain that we will not face similar setbacks. Even if our clinical trials are completed, the results may not be sufficient to obtain regulatory approval for our product candidates. In addition, the results of our preclinical studies may not be predictive of the results of outcomes in human clinical trials. For example, our tumor-specific cancer immunotherapy candidates and any future product candidates may demonstrate different chemical, biological and pharmacological properties in patients than they do in laboratory studies or may interact with human biological systems in unforeseen or harmful ways. Product candidates in later stages of clinical trials may fail to show the desired pharmacological properties or safety and efficacy traits despite having progressed through preclinical studies and initial clinical trials. Even if we are able to initiate and complete clinical trials, the results may not be sufficient to obtain regulatory approval for our product candidates, which may harm our ability to commercialize product candidates and could significantly harm our business prospects.

1.3.12 Our planned clinical trials or those of our collaborators may be less efficacious or may reveal significant adverse events not seen in our preclinical or nonclinical studies and may result in a safety profile that could delay or terminate clinical trials, or delay or prevent regulatory approval or market acceptance of any of our product candidates.

There is typically an extremely high rate of attrition for product candidates across categories of medicines proceeding through clinical trials.

These product candidates may fail to show the desired safety and efficacy profile in later stages of clinical trials despite having progressed through nonclinical studies and initial clinical trials. A number of companies in the biopharmaceutical industry have suffered significant setbacks in later-stage clinical trials due to lack of efficacy or unacceptable safety profiles, notwithstanding promising results in earlier trials. Most product candidates that commence clinical trials are never approved as products and there can be no assurance that any of our current or future clinical trials will ultimately be successful or support further clinical development of any of our product candidates.

Many of our product candidates are being developed or are intended to be co-administered with other developmental therapies or approved medicines. For example, autogene cevumeran (BNT122/RO7198457) is being developed to be co-administered with checkpoint inhibitors. Such combinations may have additional side effects, which may be difficult to predict in future clinical trials.

If significant adverse events or other side effects are observed in any of our current or future clinical trials, we may have difficulty recruiting trial participants to any of our clinical trials, trial participants may withdraw from trials, or we may be required to abandon the trials or our development efforts of one or more product candidates altogether. We, the FDA or other regulatory authorities, ethics committees or an IRB may impose a clinical hold on, or suspend or terminate, clinical trials of a product candidate at any time for various reasons, including a belief that participants in such trials are being exposed to unacceptable health risks or adverse side effects. Some potential therapeutics developed in the biotechnology industry that initially showed therapeutic promise in early-stage trials have later been found to cause side effects that prevented their further development. Even if the side effects do not preclude the drug from obtaining or maintaining marketing approval, an unfavorable benefit-risk ratio may inhibit market acceptance of the approved product due to its tolerability versus other therapies. Any of these developments could materially harm our business, financial condition and prospects.

1.3.13 If we are not successful in discovering, developing and commercializing additional product candidates beyond our current portfolio, our ability to expand our business and achieve our strategic objectives would be impaired.

Although a substantial amount of our efforts focus on the clinical trials and potential approval of our existing product candidates, a key element of our strategy is to discover, develop and potentially commercialize additional products beyond our current portfolio to treat various conditions and in a variety of therapeutic areas. We intend to do so by investing in our own drug and target discovery efforts, exploring potential collaborations for the development of new products, and in-licensing technologies. Identifying new product candidates requires substantial technical, financial and human resources, whether or not any product candidates are ultimately identified. Even if we identify product candidates that initially show promise, we may fail to develop and commercialize such products successfully for many reasons, including the following:

- the research methodology used may not be successful in identifying potential product candidates;
- competitors may develop alternatives that render our product candidates obsolete;
- product candidates we develop may nevertheless be covered by third parties' patents or other exclusive rights;
- a product candidate may, on further study, be shown to have harmful side effects or other characteristics that indicate it is unlikely to be effective or otherwise does not meet applicable regulatory criteria;
- we may discontinue the development of a product candidate;

- a product candidate may not be capable of being produced in commercial quantities at an acceptable cost, or at all; and
- an approved product may not be accepted as safe and effective by trial participants, the medical community or third-party payors.

If we are unsuccessful in identifying and developing additional products, our potential for growth may be impaired.

1.3.14 Our future success depends on our ability to retain key employees, consultants and advisors and to attract, retain and motivate qualified senior management and scientific personnel.

Our ability to compete in the highly competitive biotechnology and pharmaceutical industries depends upon our ability to attract and retain highly qualified managerial, scientific and medical personnel. We are highly dependent upon members of our management and scientific teams. We may not be able to retain these persons due to the competitive environment in the biotechnology industry, as well as a current global shortage of these highly qualified individuals. The loss of any of these persons' services may adversely impact the achievement of our research, development, financing and commercialization objectives. We are also aware of physical threats made against certain of these people. In response to these threats, we have deployed personal protection for such employees and increased our security generally. We currently do not have "key person" insurance on any of our employees.

In addition, we rely on consultants, contractors and advisors, including scientific and clinical advisors, to assist us in formulating our research and development, regulatory approval and commercialization strategy. Our consultants and advisors may be employed by employers other than us and may have commitments under consulting or advisory contracts with other entities that may limit their availability to us. The loss of the services of one or more of our current employees or advisors might impede the achievement of our research, development, regulatory approval and commercialization objectives. In addition, we have flexibly grown our workforce through the use of contractors and part-time workers. We may not be able to retain the services of such personnel, which might result in delays in the operation of our business.

Recruiting and retaining other qualified employees, consultants and advisors for our business, including scientific and technical personnel, will be critical to our success as well. Competition for skilled personnel, including in mRNA research, clinical development, clinical operations, regulatory affairs, therapeutic area management, manufacturing, and AI, is intense and the turnover rate can be high. We may not be able to attract and retain personnel on favorable terms given the competition among numerous pharmaceutical and biotechnology companies and academic institutions for individuals with similar skill sets. In addition, adverse publicity, and the failure to succeed in preclinical studies or clinical trials or in applications for marketing approval may make it more challenging to recruit and retain qualified personnel. The inability to recruit or loss of services of certain executives, key employees, consultants or advisors may impede the progress of our research, development and commercialization objectives and have a material adverse impact on our business, financial condition, results of operations and prospects.

1.3.15 Our employees, principal investigators and consultants may engage in misconduct or other improper activities, including non-compliance with regulatory standards and requirements and insider trading, which could have an adverse effect on the results of our operations.

We are exposed to the risk of fraud or other misconduct by our employees, principal investigators and consultants, despite our robust efforts to prevent such misconduct through sponsor oversight. Misconduct by these parties could include intentional failures to comply with FDA regulations or the regulations applicable in the European Union and other jurisdictions, to provide accurate information to the FDA, the EMA and other regulatory authorities, to comply with healthcare fraud and abuse laws and regulations in the United States and abroad, to report financial information or data accurately or to disclose unauthorized activities to us. Such misconduct also could involve the improper use of information obtained in the course of clinical trials or interactions with the FDA or other regulatory authorities, which could result in regulatory sanctions and cause serious harm to our reputation. We have adopted a code of conduct applicable to all of our employees, but it is not always possible to

identify and deter employee misconduct, and the precautions we take to detect and prevent this activity may not be effective in controlling unknown or unmanaged risks or losses or in protecting us from government investigations or other actions or lawsuits stemming from a failure to comply with laws or regulations. If any such actions are instituted against us and we are not successful in defending ourselves or asserting our rights, those actions could have a significant impact on our business, financial condition, results of operations and prospects, including the imposition of significant fines or other sanctions.

1.3.16 Employment-related disputes, including employee litigation and unfavorable publicity, could negatively affect our future business.

From time to time we may be subject to claims by our employees or regulatory authorities with respect to employment and workplace matters, including lawsuits or proceedings against us regarding injury, creating a hostile workplace, discrimination, wage and hour disputes, sexual harassment or other employment issues. In recent years, there has been an increase in the number of discrimination and harassment claims generally. Coupled with the expansion of social media platforms and similar devices that allow individuals access to a broad audience, these claims have had a significant negative impact on some businesses. Certain companies that have faced employment- or harassment-related lawsuits have had to terminate management or other key personnel, and have suffered reputational harm that has negatively impacted their business. If we were to face any employment-related claims, our business could be negatively affected.

1.3.17 The illegal distribution and sale by third parties of counterfeit versions of our COVID-19 vaccine, or, if approved, our other product candidates, could have a negative impact on our financial performance or reputation.

Third parties have in the past and may continue to illegally distribute and sell counterfeit versions of COVID-19 vaccines. Counterfeit products are frequently unsafe or ineffective, and may even be life-threatening. Counterfeit medicines may contain harmful substances or the wrong dosage. However, to distributors and users, counterfeit products may be visually indistinguishable from the authentic version.

Reports of adverse reactions to counterfeit products, increased levels of counterfeiting, or unsafe vaccines could materially affect public confidence in our COVID-19 vaccine or other product candidates. It is possible that adverse events caused by unsafe counterfeit vaccines will mistakenly be attributed to our COVID-19 vaccine, or, if approved, our other product candidates. In addition, thefts of inventory at warehouses, plants or while in-transit, which are subsequently improperly stored and which are sold through unauthorized channels, could adversely impact patient safety, our reputation, and our business. Public loss of confidence in the integrity of our COVID-19 vaccine or, if approved, our other product candidates, as a result of counterfeiting or theft could have a material adverse effect on our business, results of operations, and financial condition.

1.3.18 Product liability lawsuits against us could cause us to incur substantial liabilities and could limit commercialization of our current or future product candidates.

We face an inherent risk of product liability exposure related to the testing of any of our current or future product candidates in clinical trials, and an even greater risk related to any commercialized products, such as our COVID-19 vaccine. We have received product liability claims against our COVID-19 vaccine, and expect to receive additional product liability claims in the future. If we cannot successfully defend ourselves against claims that our products and/or our product candidates have caused injuries, we could incur substantial liabilities. Regardless of merit or eventual outcome, liability claims may result in:

- decreased demand for any product or product candidate that we may develop;
- loss of revenue;
- substantial monetary awards to patients, healthy volunteers or their children;
- significant time and costs to defend the related litigation;
- withdrawal of clinical trial participants;
- the inability to commercialize any products or product candidates that we may develop; and

- injury to our reputation and significant negative media attention.

We carry clinical trial insurance and product liability insurance, which we believe to be sufficient in light of our current clinical programs and commercial operations. However, the amount of coverage we have obtained may not be adequate, and we may seek to further increase insurance coverage limits as our pipeline moves towards commercialization. As we evolve, we may not be able to maintain insurance coverage at a reasonable cost or in sufficient amounts to protect us against losses due to liability. On occasion, large judgments have been awarded in class action lawsuits based on drugs or medical treatments that had unanticipated adverse effects. A successful product liability claim or series of claims brought against us could cause the price of the ADSs to decline and, if judgments exceed our insurance coverage, could adversely affect our results of operations and business.

1.3.19 If our products become subject to a product recall, it could harm our reputation, business and financial results.

The FDA and similar governmental authorities in other jurisdictions have the authority to require the recall of certain commercialized products. In the case of the FDA, the authority to require a recall of a biologic product must be based on an FDA finding that a batch, lot of other quantity of the biologic product presents an imminent or substantial hazard to the public health. In addition, some governmental bodies outside the United States have the authority to require the recall of any product or product candidate in the event of material deficiencies or defects in design or manufacture. Manufacturers may, under their own initiative, recall a product if any material deficiency in a product is found. A government-mandated or voluntary recall by us could occur as a result of manufacturing errors, design or labeling defects or other deficiencies and issues.

Recalls of any of our products or, if approved, our product candidates, would divert managerial and financial resources and have an adverse effect on our financial condition and results of operations. A recall announcement could harm our reputation with customers and negatively affect our sales, if any.

1.3.20 Issues in the development and use of AI, combined with an uncertain regulatory environment, may result in reputational harm, liability or other adverse consequences to our business.

We are investing in AI technology systems, including through our acquisition of InstaDeep, and such systems are complex and rapidly changing. We face significant competition from other companies with respect to our AI and machine learning services, along with an evolving regulatory landscape. The introduction of AI into the development and manufacturing of our product candidates, or the provision of services relating to AI technologies and applications, may result in new or enhanced governmental or regulatory scrutiny, litigation, intellectual property risks, confidentiality or security risks, ethical concerns or other complications that could harm our business, reputation or financial condition.

Uncertainty around AI may require additional investment in the development and maintenance of proprietary datasets and development of appropriate protections and safeguards for handling the use of customer data with AI technologies, which may be costly and could impact our expenses. In addition, AI may create content that appears correct but is inaccurate or flawed, and if created by third parties, may be mistakenly attributed to us. Our customers or others may rely on or use this flawed content to their detriment, which may expose us to brand or reputational harm, competitive harm or legal liability.

1.3.21 Our ability to effectively monitor and respond to the rapid and ongoing developments and expectations relating to environmental, social and governance matters, including related social expectations and concerns, may impose unexpected costs or result in reputational or other harm that could have a material adverse effect on our business, financial condition, cash flows and results of operations and could cause the price of ADSs representing our ordinary shares to decline.

There are rapid and ongoing developments and changing, sometimes conflicting, expectations relating to environmental, social and governance, or "**ESG**", matters and factors such as the environmental impact of our operations, access to our COVID-19 vaccine, corporate governance, our product stewardship practices, management of business ethics, human rights due diligence in our own operations and our supply chain, and workforce development. At the same time, ESG matters, including climate change, are the subject of increased politicization, particularly in the United States. These factors may result in increased regulatory, social or other scrutiny on us.

We believe we must address climate risks from our own contribution to climate change (inside-out perspective), risks to our own operations due to physical effects of climate change as well as transition risks (outside-in perspective), and interactions between both perspectives. To this end, we have set ourselves near-term scienced-based emissions reduction targets for our own operations (scope 1, 2) and for our supply chain (supplier engagement target for scope 3), validated by the Science Based Targets initiative, or "**SBTi**", in early February 2024.

Additionally, we are addressing increasingly complex regulatory requirements with respect to human rights risks. These requirements include German legislation such as the Act on Corporate Due Diligence Obligations for the Prevention of Human Rights Violations in Supply Chains (*Lieferkettensorgfaltspflichtengesetz – LkSG*), potential legislative planning by the European Union, and local or regional regulations. Regulatory frameworks require us to identify, prevent, mitigate and ideally end the extent of any potential adverse impacts or violations throughout our own operations and value chain.

Finally, we are faced with increasing ESG related transparency and reporting obligations. These requirements arise, for example, from the EU Corporate Sustainability Reporting Directive regulation, the European Sustainability Reporting Standards, and the respective German implementation law, any potential SEC rules that could require registrants to provide additional climate-related disclosures in future periods, and other possible obligations.

Should we fail to meet our climate protection targets or if we are unable to adequately recognize and respond to such developments and governmental, societal, investor and NGO (non-governmental organization) expectations relating to such ESG matters, we may have to pay substantial fines, forego corporate opportunities, become subject to additional scrutiny, incur unexpected costs or experience damage to our reputation or our various brands. If any of these events were to occur, there may be a material adverse effect on our business, financial condition, cash flows and results of operations, and the price of ADSs representing our ordinary shares may decline.

We have observed that in addition to the importance of their financial performance, companies are increasingly being judged by their performance on ESG matters. A variety of organizations measure the performance of companies on such ESG topics, and the results of these assessments are widely publicized. We may fail to comply with standards or best practices put forth by such organizations or by governmental or regulatory bodies. There can be no certainty that we will manage such issues successfully, or that we will successfully meet society's expectations as to our proper role. Any failure or perceived failure by us in this regard could have a material adverse effect on our reputation and on our business, the price of ADSs representing our ordinary shares, financial condition, or results of operations, including the sustainability of our business over time.

1.4 Risks Related to the Manufacturing of our COVID-19 Vaccine, our Product Candidates and Future Pipeline

1.4.1 Our COVID-19 vaccine and product candidates are based on novel technologies and they may be complex and difficult to manufacture. We may encounter difficulties in manufacturing, product release, shelf life, testing, storage, supply chain management or shipping. If we or any of the third-party manufacturers we work with encounter such difficulties, our ability to supply materials for clinical trials or any approved product could be delayed or stopped.

The manufacturing processes for our COVID-19 vaccine and our product candidates are novel and complex. Due to the novel nature of this technology and the recency of our experience at larger scale production, we may encounter difficulties in manufacturing, product release, shelf life, testing, storage and supply chain management, or shipping. These difficulties could be due to any number of reasons, including, but not limited to, complexities of producing batches at larger scale, equipment failure, choice and quality of raw materials and excipients, analytical testing technology, and product instability. In an

effort to optimize product features, we have in the past and may in the future make changes to our product candidates in their manufacturing and stability formulation and conditions. This has resulted in the past, and may in the future result, in our having to resupply batches for preclinical, clinical, or commercial activities when there is insufficient product stability during storage and insufficient supply. Insufficient stability or shelf life of our products or product candidates could materially delay our or our collaborators' ability to continue the clinical trial for that product candidate or require us to begin a new clinical trial with a newly formulated drug product, due to the need to manufacture additional preclinical, clinical or commercial supply.

Our rate of innovation is high, which has resulted in, and will continue to cause a high degree of, technology change that can negatively impact product comparability during and after clinical development. Furthermore, technology changes may drive the need for changes in, modification to, or the sourcing of, new manufacturing infrastructure or may adversely affect third-party relationships.

The process to generate mRNA medicines is complex and, if not developed and manufactured under well-controlled conditions, can adversely impact pharmacological activity. We may encounter difficulties in scaling up our manufacturing process, thereby potentially impacting clinical and commercial supply. Additionally, for individualized therapies, we may encounter issues with our ability to timely and efficiently manufacture product given the on-demand requirements of such therapies, thereby potentially impacting clinical and commercial supply.

As we continue developing new manufacturing processes for our drug substance and drug product, the changes we implement to the manufacturing process may impact, in turn, specification and stability of the drug product. Changes in our manufacturing processes may lead to failure of lots and this could lead to a substantial delay in our clinical trials or an inability to supply sufficient commercial quantities of drug product. Our mRNA product candidates may prove to have a stability profile that leads to an unfavorable shelf life. This poses risk in supply requirements, wasted stock and higher cost of goods.

1.4.2 Our inability to manufacture sufficient or appropriate quantities of our COVID-19 vaccine or any of our product candidates, or our failure to comply with applicable regulatory requirements, could materially and adversely affect our business.

Manufacturing is a vital component of our individualized immunotherapy approach, and we have invested significantly in our manufacturing facilities, including the acquisition of a manufacturing site in Marburg, Germany, the construction of a novel modular manufacturing facility that we refer to as a "**BioNTainer**", and the construction of a facility to support manufacturing of our Individualized Vaccines Against Cancer candidates. All internal manufacturing is performed under GMP guidelines. We also rely on a network of CMOs for the manufacture of our COVID-19 vaccine. We do not rely on any external CMOs for the manufacture of our individualized product candidates and at this time, and we have limited redundancy among our facilities. Due to the individualized nature of our product candidates, we do not maintain product reserves. If any of our or our external CMOs' manufacturing facilities, including our *BioNTainer* units, experience difficulties, including related to manufacturing, product release, shelf life, testing, storage and supply chain management or shipping, our clinical development programs may be delayed or suspended until we or our external CMOs can resume operations. We may also be required to incur significant expenditures to resolve such difficulties.

We and our collaboration partner also have experienced, and continue to face the risk of, inventory write-downs or redundant production capacities with respect to our COVID-19 vaccine. Planned new formulations of our COVID-19 vaccine, including versions that could protect against new variants of COVID-19, have resulted or may result in significant research and development expense that was not or may not be recouped. In addition, we have experienced in the past, and may experience in the future, redundant production capacities under our agreements with CMOs due to planned new formulations, adaptations of our COVID-19 vaccine and increased internal manufacturing capacities. Significant inventory write-downs or redundant manufacturing expenses would negatively impact our results of operations.

Our facilities are subject to various regulatory requirements and may be subject to announced or unannounced inspections by the FDA or other regulatory authorities at any time during the development or commercialization phase. If we or our external CMOs cannot successfully manufacture material that conforms to our specifications and the strict regulatory requirements of the FDA, the EMA or comparable

regulatory authorities in other jurisdictions, we may not be able to rely on our or our external CMOs' manufacturing facilities for the manufacture of our product candidates. If the FDA, the EMA or another comparable regulatory authority finds our or our external CMOs' facilities inadequate for the manufacture of our COVID-19 vaccine or our product candidates or otherwise deficient, including as a result of a site inspection, such facilities may be the subject of adverse regulatory action, including the issuance of untitled or warning letters. If such facilities are subject to enforcement action in the future or are otherwise inadequate, we may need to find alternative manufacturing facilities, which would significantly delay or otherwise impact our ability to develop, obtain regulatory approval for or market our COVID-19 vaccine or our product candidates.

Additionally, we may experience manufacturing difficulties due to resource constraints, labor disputes or unstable political environments. If we were to encounter any of these difficulties, our ability to provide our product candidates to patients in clinical trials, or to provide approved products for the treatment of patients, would be jeopardized.

1.4.3 We are dependent on a number of equipment providers who are also implementing novel technology. Further, we have developed our own custom manufacturing equipment for certain of our product candidates. If such equipment malfunctions or we encounter unexpected performance issues, we could encounter delays or interruptions to clinical and commercial supply.

Due to the number of different programs, we may in the future have cross contamination of products inside of our factories, CROs, external CMOs, suppliers or in the clinic that affect the integrity of our products. Additionally, for some programs the manufacturing scale is extremely small compared to the standard volumes of supply, such that we run the risk of contaminating the process each time we reopen a container to use remaining supplies. We also continue to evolve our own custom manufacturing equipment. If such equipment malfunctions or we encounter unexpected performance issues, we could encounter delays or interruptions to clinical and commercial supply. This can also lead to increased batch failure and the inability to supply patients enrolled in the clinical trial.

As we scale the manufacturing output for particular programs, we plan to continuously improve yield, purity and the pharmaceutical properties of our product candidates from IND-enabling studies through commercial launch, including shelf-life stability and solubility properties of drug product and drug substance. Due to continuous improvement in manufacturing processes, we may switch processes for a particular program during development. However, after the change in process, more time is required for pharmaceutical property testing, such as six- or twelve-month stability testing. That may require resupplying clinical or commercial material, or making additional GMP batches to keep up with clinical trial demand before such pharmaceutical property testing is completed.

We are utilizing a number of raw materials and excipients that are either new to the pharmaceutical industry or are being employed in a novel manner. Some of these raw materials and excipients have not been scaled to a level to support commercial supply and could experience unexpected manufacturing or testing failures, or supply shortages. Such issues with raw materials and excipients could cause delays or interruptions to clinical and commercial supply of our COVID-19 vaccine and our product candidates. Some of our suppliers are located in countries different from our manufacturing sites. Export restrictions could lead to unplanned interruptions in manufacturing, thus impacting supply of both clinical and commercial material.

We have established a number of analytical assays, and may have to establish several more, to assess the quality of our mRNA products and product candidates. We may identify gaps in our analytical testing strategy that might prevent release of product or could require product withdrawal or recall. For example, we may discover new impurities that have an impact on product safety, efficacy or stability. This may lead to an inability to release mRNA products or product candidates until the manufacturing or testing process is rectified.

Our product and product intermediates are extremely temperature sensitive, and we may learn that any or all of our products are less stable than desired. We may also find that transportation conditions negatively impact product quality. This may require changes to the formulation or manufacturing process for one or more of our products or product candidates and result in delays or interruptions to clinical or commercial supply. In addition, the cost associated with such transportation services and the limited

pool of vendors may also add additional risks of supply disruptions. As we transport intermediate products with holding times in refrigeration (TIR) and allowed times out of refrigeration (TOR) across long distances and crossing borders, traffic issues and customs delays could lead to the loss of batches which would need to be replaced.

1.4.4 Certain of our product candidates are uniquely manufactured for each patient and we may encounter difficulties in production, particularly with respect to scaling our manufacturing capabilities. If we or any of the third-party manufacturers with whom we contract encounter these types of difficulties, our ability to provide such product candidates for clinical trials or, if approved, products for patients could be delayed or stopped, or we may be unable to maintain a commercially viable cost structure.

We custom design and manufacture certain product candidates that are unique and tailored specifically for each patient. Manufacturing unique lots of these product candidates is susceptible to product loss or failure due to issues with:

- logistics associated with the collection of a patient's tumor, blood or other tissue sample;
- shipping such samples to a facility for genetic sequencing;
- next-generation sequencing of the tumor mRNA;
- biopsy of a sufficient quantity of cancerous tissue to allow for proper sequencing and identification of tumor-specific mutations;
- identification of appropriate tumor-specific mutations;
- the use of a software program, including proprietary and open source components, which is hosted in the cloud and a part of our product candidate, to assist with the design of the patient-specific mRNA, which software must be maintained and secured;
- effective design of the patient-specific mRNA that encodes for the required neoantigens;
- batch-specific manufacturing failures or issues that arise due to the uniqueness of each patient-specific batch that may not have been foreseen;
- quality control testing failures;
- unexpected failures of batches placed on stability;
- shortages or quality control issues with single-use assemblies, consumables or critical parts sourced from third-party vendors that must be changed out for each patient-specific batch;
- significant costs associated with individualized manufacturing that may adversely affect our ability to continue development;
- successful and timely manufacture and release of the patient-specific batch;
- shipment issues encountered during transport of the batch to the site of patient care;
- the ability to define a consistent safety profile at a given dose when each participant receives a unique treatment; and
- our reliance on single source suppliers.

With respect to our own custom manufacturing equipment, if our clinical development plans are expanded, we may not be able to supply this expanded need reliably without significant investments due to the custom nature of the equipment and single-use assemblies. In addition, there will be considerable time to scale up our facilities or build new facilities before we can begin to meet any commercial demand if one or more of our individualized product candidates are approved. This expansion or addition of new facilities could also lead to product comparability issues, which can further delay introduction of new capacity.

For those of our product candidates that are manufactured for each individual patient, we are required to maintain a chain of identity with respect to each patient's tissue sample, the sequenced data derived from such tissue sample, the results of such patient's genomic analysis and the custom manufactured product for such patient. Maintaining such a chain of identity is difficult and complex, and failure to do so could result in product mix-up, adverse patient outcomes, loss of product, or regulatory action, including withdrawal of any approved products from the market. Further, as our product candidates are developed through early-stage clinical studies to later-stage clinical trials towards approval and commercialization, we expect that multiple aspects of the complicated collection, analysis, manufacture and delivery processes will be modified in an effort to optimize processes and results. These changes may not achieve the intended objectives, and any of these changes could cause our product candidates to be stopped, perform differently than we expect, potentially affecting the results of clinical trials and harming the commercial prospects of our product candidates, as a result of which we may also be unable to maintain a commercially viable cost structure.

1.4.5 We are subject to regulatory and operational risks associated with the physical and digital infrastructure at both our internal manufacturing facilities and at those of our external service providers.

The designs of our facilities are based on current standards for biotechnology facilities. They have been reviewed and approved by local authorities and have also received GMP manufacturing licenses. We have designed our facilities to incorporate a significant level of automation of equipment with integration of several digital systems to improve efficiency of operations. We have attempted to achieve a high level of digitization for clinical and commercial manufacturing facilities relative to industry standards. While this is meant to improve operational efficiency, this may pose additional risk of process equipment malfunction and even overall manufacturing system failure or shutdown due to internal or external factors including, but not limited to, design issues, system compatibility or potential cybersecurity breaches. This may lead to a delay in supply or shutdown of our facilities. Any disruption in our manufacturing capabilities could cause delays in our production capacity for our drug substances or drug products, impose additional costs, or require us to identify, qualify and establish an alternative manufacturing site, the occurrence of which could have a material adverse effect on our business, financial condition, results of operations and prospects.

As we expand our development and commercial capacity, we may continue to establish additional manufacturing capabilities in different jurisdictions, which may lead to regulatory delays or prove costly. If we fail to select the correct location, complete the construction in an efficient manner, recruit required personnel, and/or generally manage our growth effectively, the development and production of our products or product candidates could be delayed or curtailed. Additional investments may be needed if changes in our manufacturing process lead to required changes in our infrastructure.

1.4.6 We are subject to significant regulatory oversight with respect to manufacturing our products and product candidates. Our manufacturing facilities or the manufacturing facilities of our third-party manufacturers or suppliers may not meet regulatory requirements. Failure to meet GMP requirements set forth in regulations promulgated by the FDA, the EMA and other comparable regulatory authorities could result in significant delays in and increased costs of our products.

The manufacturing of immunotherapies for clinical trials or commercial sale is subject to extensive regulation. GMP requirements govern manufacturing processes and procedures, including record-keeping, and the implementation and operation of quality systems to control and assure the quality of products and materials used in our products and product candidates. Poor control of the GMP production processes can lead to product quality failures that can impact our ability to supply product, resulting in loss of potential product sales revenues, cost overruns and delays to clinical timelines for our clinical programs, which could be extensive. Such production process issues include but are not limited to:

- critical deviations in the manufacturing process;
- facility and equipment failures;
- contamination of the product due to an ineffective quality control strategy;
- facility contamination as assessed by the facility and utility environmental monitoring program;

- ineffective process, equipment or analytical change management, resulting in failed lot release criteria;
- raw material failures due to ineffective supplier qualification or regulatory compliance issues at critical suppliers;
- ineffective product stability;
- failed lot release or facility and utility quality control testing;
- ineffective corrective actions or preventative actions taken to correct or avoid critical deviations due to our developing understanding of the manufacturing process as we scale; and
- failed or defective components or consumables.

We must supply all necessary documentation in support of a BLA or other marketing authorization application on a timely basis and must adhere to the FDA's, the EMA's and other countries' GMP requirements, which are enforced, in the case of the FDA, in part through its facilities inspection program.

Regulatory authorities typically require representative manufacturing site inspections to assess adequate compliance with GMPs and manufacturing controls as described in the filing. If either we or one of our third-party manufacturing sites fail to provide sufficient quality assurance or control, approval to continue delivery of our commercial product or to commercialize our product candidates may not be granted. Inspections by regulatory authorities may be announced or unannounced and may occur at any time during the development or commercialization phase. The inspections may be product-specific or facility-specific for broader GMP inspections, or as a follow up to market or development issues that the regulatory agency may identify. Deficient inspection outcomes may result in adverse regulatory action, including the issuance of untitled or warning letters, which could influence our ability, or the ability of our third-party manufacturers or suppliers, to fulfill supply obligations, impacting or delaying supply or delaying programs. Our failure, or the failure of our third-party manufacturers, to comply with applicable regulations could result in sanctions being imposed on us, including, but not limited to, clinical holds, fines, injunctions, civil penalties, delays, suspension or withdrawal of approvals, license revocation, seizures or recalls of product candidates or products, operating restrictions, and criminal prosecutions, any of which could significantly and adversely affect supplies of our products and product candidates (including those of our collaborators) and our overall business operations.

The manufacturing process for any product is subject to the FDA's, the EMA's and other regulatory authorities' approval processes, and we may need to contract with manufacturers whom we believe can meet applicable regulatory authority requirements on an ongoing basis. If we or our third-party manufacturers are unable to reliably manufacture to specifications acceptable to the FDA, the EMA or other regulatory authorities, we or our collaborators may not obtain or maintain the approvals we or they need to release and deliver such products. Even if we or our collaborators obtain regulatory approval for any of our immunotherapies, there is no assurance that either we or our CMOs will be able to manufacture our product candidates to specifications acceptable to the FDA, the EMA or other regulatory authorities, to produce it in sufficient quantities to meet the requirements for the potential launch of the product, or to meet potential future demand. Any of these challenges could delay completion of clinical trials, require bridging clinical trials or the repetition of one or more clinical trials, increase clinical trial costs, delay approval of our product candidates, impair commercialization efforts or increase our cost of goods. The occurrence of any of the foregoing could have an adverse effect on our business, financial condition, results of operations and growth prospects.

In addition, we may not have direct control over the ability of our CMOs to maintain adequate quality control, quality assurance and qualified personnel. Furthermore, all of our CMOs are engaged with other companies to supply or manufacture materials or products for such companies, which exposes our CMOs to regulatory risks for the production of such materials and products. As a result, failure to meet the regulatory requirements for the production of those materials and products may generally affect the regulatory status of our CMOs' facilities, and could result in the sanctions and other adverse outcomes described above. Our potential future dependence upon others for the manufacture of our products, product candidates and raw materials may adversely affect our future operating results and our ability to commercialize any products that receive regulatory approval on a timely and competitive basis.

The FDA, the EMA and other regulatory authorities may require us to submit product samples of any lot of any approved product together with the protocols showing the results of applicable tests at any time. Under some circumstances, the FDA or other regulatory authorities may require that we do not distribute a lot or lots until the relevant agency authorizes such release. Deviations in the manufacturing process, including those affecting quality attributes and stability, may result in unacceptable changes in the product that could result in lot failures or product recalls. Our CMOs have, in the past, experienced lot failures and some may have experienced product recalls. Lot failures or product recalls with respect to product produced by either our own facilities or those of our third-party manufacturers could cause us and our collaborators to delay clinical trials, product launches or product supply, which could be costly to us and otherwise harm our business, financial condition, results of operations and prospects.

We also may encounter problems hiring and retaining the experienced scientific, quality-control and manufacturing personnel needed to operate our manufacturing processes and operations, which could result in delays in production or difficulties in maintaining compliance with applicable regulatory requirements. While we train and qualify all personnel around the appropriate handling of our products and materials, we may not be able to control for or ultimately detect intentional sabotage or negligence by any employee or contractor.

1.5 Risks Related to our Reliance on Third Parties

1.5.1 We rely on third parties in the conduct of significant aspects of our preclinical studies and clinical trials and intend to rely on third parties in the conduct of future clinical trials. If these third parties do not successfully carry out their contractual duties, fail to comply with applicable regulatory requirements or fail to meet expected deadlines, we may be unable to obtain regulatory approval for our product candidates.

We currently rely, and expect to continue to rely, on third parties, such as CROs, clinical data management organizations, collaborators, medical institutions and clinical investigators, to conduct various and significant elements of our clinical trials. Furthermore, we currently rely, and expect to continue to rely, on third parties to conduct certain research and preclinical testing activities. In some cases, these third parties may terminate their engagements with us. If we need to enter into alternative arrangements, it would delay our discovery or product development activities.

Our reliance on these third parties for research and development activities will reduce our control over these activities but will not relieve us of our regulatory or contractual responsibilities. We are responsible for ensuring that each of our preclinical studies and clinical trials is conducted in accordance with the applicable protocol, legal and regulatory requirements and scientific standards. For example, we are responsible for ensuring that each of our clinical trials is conducted in accordance with the general investigational plan and protocols for the trial.

Moreover, the FDA requires us to comply with GCP for conducting, recording and reporting the results of clinical trials to assure that data and reported results are credible and accurate and that the rights, integrity and confidentiality of trial participants are protected. We are also required to register ongoing clinical trials and post the results of completed clinical trials on a U.S. government-sponsored database, ClinicalTrials.gov, within certain timeframes. Failure to do so can result in fines, adverse publicity, and civil and criminal sanctions. For any violations of laws and regulations during the conduct of our preclinical studies and clinical trials, we could be subject to warning letters or enforcement action that may include civil penalties up to and including criminal prosecution.

We and our CROs are required to comply with regulations, including GCP, for conducting, monitoring, recording and reporting the results of preclinical studies and clinical trials to ensure that the data and results are scientifically credible and accurate and that the trial participants are adequately informed, among other things, of the potential risks of participating in clinical trials. We are also responsible for ensuring that the rights of our clinical trial participants are protected. These regulations are enforced by the FDA, the regulatory authorities of the EU member states, and comparable regulatory authorities of other jurisdictions for any product candidates in clinical development. The FDA enforces GCP regulations through periodic inspections of clinical trial sponsors, principal investigators and trial sites. If we or our CROs fail to comply with applicable GCP, the clinical data generated in our clinical trials

may be deemed unreliable and the FDA or comparable regulatory authorities of other jurisdictions may require us to perform additional clinical trials before approving our marketing applications. We cannot be sure that, upon inspection, the FDA will determine that any of our future clinical trials will comply with GCP. In addition, our clinical trials must be conducted with product candidates produced in accordance with the requirements of GMP regulations. Our failure or the failure of our CROs to comply with these regulations may require us to repeat clinical trials, which would delay the regulatory approval process and could also subject us to enforcement action.

Although we have designed, and in the future intend to design the clinical trials for certain of our product candidates, our collaborators will design the clinical trials that they are managing (in some cases, with our input) and in the case of clinical trials controlled by us, we expect that CROs will conduct all of the clinical trials. As a result, many important aspects of our development programs, including their conduct and timing, are outside of our direct control. Our reliance on third parties to conduct future preclinical studies and clinical trials results in less direct control over the management of data developed through preclinical studies and clinical trials than would be the case if we were relying entirely upon our own staff. Communicating with outside parties can also potentially lead to mistakes as well as difficulties in coordinating activities. Outside parties may:

- have staffing difficulties;
- fail to comply with contractual obligations;
- experience regulatory compliance issues;
- undergo changes in priorities or become financially distressed;
- form relationships with other entities, some of which may be our competitors;
- make human errors; or
- be subject to cyberattacks.

These factors may materially adversely affect the willingness or ability of third parties to conduct our preclinical studies and clinical trials and may subject us to unexpected cost increases that are beyond our control. If the CROs do not perform preclinical studies and clinical trials in a satisfactory manner, breach their obligations to us or fail to comply with regulatory requirements, the development, regulatory approval and commercialization of our product candidates may be delayed, we may not be able to obtain regulatory approval and commercialize our product candidates, or our development programs may be materially and irreversibly harmed. If we are unable to rely on preclinical and clinical data collected by our CROs, we could be required to repeat, extend the duration of, or increase the size of any clinical trials we conduct, and this could significantly delay commercialization and require significantly greater expenditures.

We also rely on other third parties to transport, store and distribute the required materials for our clinical trials. In the past, certain of our third-party vendors have mishandled our materials, resulting in loss of full or partial lots of material. Any further performance failure on the part of these third parties could result in damaged products and could delay clinical development or marketing approval of any product candidates we may develop or commercialization of our medicines, if approved, producing additional losses and depriving us of potential product sales revenues, causing us to default on our contractual commitments, result in losses that are not covered by insurance, and damage our reputation and overall perception of our products in the marketplace.

Our existing collaborations, or any future collaboration arrangements that we may enter into, may not be successful, which could significantly limit the likelihood of receiving the potential economic benefits of the collaboration and adversely affect our ability to develop and commercialize our products and product candidates.

We have entered into collaborations under which our collaborators have provided, and may in the future provide, funding and other resources for developing and commercializing our products and product candidates. We expect to enter into additional collaborations to access additional funding, capabilities and/or expertise in the future. Our existing collaborations, and any future collaborations we enter into, may pose a number of risks, including the following:

- collaborators may not perform or prioritize their obligations as expected;
- the clinical trials conducted as part of such collaborations may not be successful;
- collaborators may not pursue development and commercialization of any product candidates and products that achieve regulatory approval or may elect not to continue or renew development or commercialization of programs based on clinical trial results, changes in the collaborators' focus or available funding (for example, we are aware that there have been allegations that Fosun International Ltd., an affiliate of our collaboration partner Fosun Pharma, is facing liquidity risks), or external factors, such as an acquisition, that divert resources or create competing priorities;
- collaborators may delay clinical trials, provide insufficient funding for clinical trials, stop a clinical trial, abandon a product candidate, repeat or conduct new clinical trials, or require a new formulation of a product candidate for clinical testing;
- collaborators could independently develop, or develop with third parties, products that compete directly or indirectly with our product candidates if the collaborators believe that competitive products are more likely to be successfully developed or can be commercialized under terms that are more economically attractive than ours;
- product candidates developed in collaborations with us may be viewed by our collaborators as competitive with their own product candidates or products, which may cause collaborators to cease to devote resources to the development or commercialization of our product candidates;
- a collaborator with marketing and distribution rights to one or more of our product candidates that achieve regulatory approval may not commit sufficient resources to the marketing and distribution of any such product;
- disagreements with collaborators, including disagreements over proprietary rights, contract interpretation or the preferred course of development of any product candidates, may cause delays or termination of the research, development or commercialization of such product candidates, may lead to additional responsibilities for us with respect to such product candidates, or may result in litigation or arbitration, any of which would be time-consuming and expensive;
- collaborators may not properly maintain, protect, defend or enforce our intellectual property rights or may use our proprietary information in such a way as to invite litigation that could jeopardize or invalidate our intellectual property or proprietary information or expose us to potential litigation;
- disputes may arise with respect to the ownership of intellectual property developed pursuant to our collaborations;
- collaborators may infringe, misappropriate or otherwise violate the intellectual property rights of third parties, which may expose us to litigation and potential liability;
- collaborations may be terminated for the convenience of the collaborator and, if terminated, the development of our product candidates may be delayed, and we could be required to raise additional capital to pursue further development or commercialization of the applicable product candidates;
- future relationships may require us to incur non-recurring and other charges, increase our near- and long-term expenditures, issue securities that dilute our existing shareholders, or disrupt our management and business;
- we could face significant competition in seeking appropriate collaborators, and the negotiation process is time-consuming and complex; and
- our international operations through any future collaborations, acquisitions or joint ventures may expose us to certain operating, legal and other risks not encountered in Germany or the United States.

If our collaborations do not result in the successful development and commercialization of programs, or if one of our collaborators terminates its agreement with us, we may not receive any future research funding or milestone, earn-out, royalty or other contingent payments, or otherwise yield the expected benefits under the collaborations. As a result, our development of product candidates and

commercialization efforts could be delayed, and we may need additional resources to develop and commercialize our product candidates. If one of our collaborators terminates its agreement with us, we may find it more difficult to attract new collaborators and the perception of us in the business and financial communities could be adversely affected. All of the risks relating to product development, regulatory approval and commercialization described in this report apply to the activities of our collaborators.

1.5.2 We and our collaborators rely on third parties to manufacture certain of our clinical product supplies, and we may have to rely on third parties to produce and process our product candidates, if approved.

Although we expect to continue using our own clinical manufacturing facilities where available, we also rely on outside vendors to manufacture supplies and process our product candidates. We only manufacture our COVID-19 vaccine on a commercial scale and may not be able to achieve commercial-scale manufacturing and processing for our other product candidates, if approved, and may be unable to create an inventory of mass-produced, off-the-shelf product to satisfy demands for our product candidates, if approved.

We do not yet have sufficient information to reliably estimate the cost of the commercial manufacturing and processing of our product candidates, and the actual cost to manufacture and process our product candidates could materially and adversely affect the commercial viability of our product candidates. As a result, we may not be able to develop commercially viable products other than our COVID-19 vaccine.

In addition, our reliance on a limited number of CMOs exposes us to the following risks:

- we may be unable to identify manufacturers on acceptable terms or at all because the number of potential manufacturers is limited, and the FDA or other regulatory authorities may have questions regarding any replacement contractor. This may require new testing and regulatory interactions. In addition, a new manufacturer would have to be educated in, or develop substantially equivalent processes for, production of our products after receipt of regulatory authority questions, if any;
- our CMOs might be unable to timely formulate and manufacture our product or produce the quantity and quality required to meet our clinical and commercial needs, if any;
- CMOs may not be able to execute our manufacturing procedures appropriately;
- our future CMOs may not perform as agreed or may not remain in the contract manufacturing business for the time required to supply our clinical trials or to successfully produce, store and distribute our products;
- manufacturers are subject to ongoing periodic unannounced inspection by the FDA, the U.S. Drug Enforcement Administration and corresponding state agencies and by regulatory authorities in other jurisdictions to ensure strict compliance with GMP and other government regulations and corresponding standards in other jurisdictions. We do not have control over CMOs' compliance with these regulations and standards;
- we may not own, or may have to share, the intellectual property rights to any improvements made in the manufacturing process for our products;
- our CMOs could breach or terminate their agreement with us; and
- our CMOs would also be subject to the same risks we face in developing our own manufacturing capabilities, as described above.

Each of these risks could delay our clinical trials, the approval, if any, of our COVID-19 vaccine or product candidates by the FDA or regulatory authorities in other jurisdictions or the commercialization of our COVID-19 vaccine or product candidates, or result in higher costs or deprive us of potential product sales revenues. In addition, we will rely on third parties to perform release tests on our COVID-19 or our product candidates prior to delivery to patients. If these tests are not appropriately done and test data are not reliable, patients could be put at risk of serious harm.

Certain of our collaborators currently rely on CMOs located outside of the United States to manufacture their clinical materials, and we expect to rely on CMOs located outside of the United States in the future.

Such ex-U.S. CMOs may be subject to or affected by U.S. legislation, executive orders, regulations, or investigations, including but not limited to the proposed BIOSECURE Act, the Department of Justice's Final Rule issued on December 27, 2024 implementing the Executive Order on Preventing Access to Americans' Bulk Sensitive Personal Data and United States Government-Related Data by Countries of Concern, sanctions, trade restrictions and other U.S. and other regulatory requirements, which could increase the cost or reduce the supply of material available to us, delay the procurement or supply of such material, delay or impact clinical trials, have an adverse effect on our ability to secure significant commitments from governments to purchase our potential therapies and adversely affect our financial condition and business prospects.

1.5.3 We have entered into in-licensing arrangements and may form or seek to enter into additional licensing arrangements in the future, and we may not realize the benefits of such licensing arrangements.

We are a party to licenses that give us rights to third-party intellectual property, including patents and patent applications, that are necessary or useful for our business. For example, we have obtained licenses from Acuitas Therapeutics, Inc., or "**Acuitas**", CellScript LLC, or "**CellScript**", and its affiliate, mRNA RiboTherapeutics, Inc., to patent rights claiming certain uses of modified RNA, as well as licenses from certain other parties for intellectual property useful in pharmaceutical formulations. We may enter into additional licenses to third-party intellectual property in the future.

The success of products developed based on in-licensed technology will depend in part on the ability of our current and future licensors to prosecute, obtain, maintain, protect, enforce and defend patent protection for our in-licensed intellectual property. Our current and future licensors may not successfully prosecute the patent applications we license. Even if patents were issued in respect of these patent applications, our licensors may fail to maintain these patents, may determine not to pursue litigation against other companies that are infringing these patents, or may pursue such litigation less aggressively than we would. Without protection for the intellectual property we license, other companies might be able to offer substantially identical products for sale, which could adversely affect our competitive business position and harm our business prospects. In addition, we sublicense our rights under various third-party licenses to our collaborators. Any impairment of these sublicensed rights could result in reduced revenues under our collaboration agreements or result in termination of an agreement by one or more of our collaborators.

Disputes may also arise between us and our licensors regarding intellectual property subject to a license agreement, including:

- the scope of rights granted under the license agreement and other interpretation-related issues;
- whether and the extent to which our technology and processes infringe, misappropriate or otherwise violate the intellectual property of the licensor that is not subject to the licensing agreement;
- our right to sublicense patent and other intellectual property rights to third parties under collaborative relationships;
- our diligence obligations with respect to the use of the licensed intellectual property and technology in relation to our development and commercialization of our product candidates, and what activities satisfy those diligence obligations;
- the ownership of inventions, trade secrets, know-how and other intellectual property resulting from the joint creation or use of intellectual property by our licensors and us and our collaborators;
- the priority of invention of patented technology; and
- the amounts to be paid pursuant to certain program milestones being achieved or to royalty obligations, including the triggering of royalty obligations and amounts to be paid pursuant thereto.

If disputes over intellectual property that we have in-licensed or other related contractual rights prevent or impair our ability to maintain our current licensing arrangements on favorable terms, we may be unable to successfully develop and commercialize the affected product candidates.

We are generally also subject to all of the same risks with respect to protection of intellectual property that we license, as we are for intellectual property that we own, which are described below. If we, our co-owners or our licensors fail to adequately protect, defend, maintain or enforce this intellectual property, our ability to commercialize products could suffer.

1.5.4 If we are not able to establish collaborations on commercially reasonable terms, we may have to alter our research, development and commercialization plans.

Our research and product development programs and the potential commercialization of any product candidates we develop alone or with collaborators will require substantial additional cash to fund expenses, and we expect that we will continue to seek collaborative arrangements with others in connection with the development and potential commercialization of current and future product candidates or the development of ancillary technologies. We face significant competition in establishing relationships with appropriate collaborators. In addition, there have been a significant number of recent business combinations among large pharmaceutical companies that have resulted in a reduced number of potential future collaborators. Whether or not we reach a definitive agreement for a collaboration will depend, among other things, upon our assessment of the collaborator's resources and expertise, the terms and conditions of the proposed collaboration and the proposed collaborator's evaluation of a number of factors. Those factors may include, among other things and as applicable for the type of potential product or technology, an assessment of the opportunities and risks of our technology, the design or results of studies or trials, the likelihood of approval, if necessary, of the FDA or comparable regulatory authorities outside the United States, the potential market for the subject product candidate, the costs and complexities of manufacturing and delivering such product candidate to patients, the potential of competing products and technologies and industry and market conditions generally.

Current or future collaborators may also consider alternative product candidates or technologies for similar indications that may be available to collaborate on and whether such a collaboration could be more attractive than the one with us. Additionally, we may be restricted under existing collaboration agreements from entering into future agreements on certain terms or for certain development activities with potential collaborators. For example, we have granted exclusive rights or options to Pfizer for certain targets, and under the terms of our respective collaboration agreements with them, we will be restricted from granting rights to other parties to use our mRNA technology to pursue potential products that address those targets. Similarly, our collaboration agreements have in the past and may in the future contain non-competition provisions that could limit our ability to enter into collaborations with future collaborators.

Collaborations are complex and time-consuming to negotiate and document. We may not be able to negotiate collaborations on a timely basis, on acceptable terms, or at all. If we do enter into additional collaboration agreements, the negotiated terms may force us to relinquish rights that diminish our potential profitability from development and commercialization of the subject product candidates or others. If we are unable to enter into additional collaboration agreements, we may have to curtail the research and development of the product candidate or technology for which we are seeking to collaborate, reduce or delay research and development programs, delay potential commercialization timelines, reduce the scope of any sales or marketing activities or undertake research, development or commercialization activities at our own expense. If we elect to increase our expenditures to fund research, development or commercialization activities on our own, we may need to obtain additional capital, which may not be available to us on acceptable terms or at all.

1.5.5 We are dependent on single source or a small number of suppliers for some of the components and materials used in, and the processes required to develop, our COVID-19 vaccine and our product candidates.

We currently depend on single source suppliers or a small number of suppliers for some of the components and materials used in, and manufacturing processes required to develop, our COVID-19 vaccine and our product candidates. We cannot ensure that these suppliers or service providers will remain in business, or have sufficient capacity or supply to meet our needs, or that they will not be purchased by one of our competitors or another company that is not interested in continuing to work with us. Our use of single source suppliers of raw materials, components, key processes and finished goods exposes us to several risks, including delivery of raw materials not to our specification, disruptions in supply, price increases or late deliveries. We cannot be sure that these suppliers will remain in

business or that they will not be purchased by one of our competitors or another company that is not interested in continuing to produce these materials for our intended purpose. In addition, the lead time needed to establish a relationship with a new supplier can be lengthy, and we may experience delays in meeting demand in the event we must switch to a new supplier. The time and effort to qualify a new supplier could result in additional costs, diversion of resources or reduced manufacturing yields, any of which would negatively impact our operating results. In addition, some such suppliers we rely on normally support blood-based hospital businesses and generally do not have the capacity to support commercial products manufactured under GMP by biopharmaceutical firms. These suppliers may be ill-equipped to support our needs, especially in non-routine circumstances like an FDA inspection or medical crisis, such as widespread contamination. We also do not have contracts with many of these suppliers, and we may not be able to contract with them on acceptable terms or at all.

There are, in general, relatively few alternative sources of supply for substitute components. These vendors may be unable or unwilling to meet our future demands for our clinical trials or commercial sale. Establishing additional or replacement suppliers for these components, materials and processes could take a substantial amount of time and it may be difficult to establish replacement suppliers who meet regulatory requirements. Further, we may be unable to enter into agreements with a new supplier on commercially reasonable terms or at all, which could have a material adverse impact on our business.

Accordingly, we have experienced, and we may in the future experience delays in receiving key raw materials to support clinical or commercial manufacturing. Any disruption in supply from any single source supplier or service provider could lead to supply delays or interruptions which would damage our business, financial condition, results of operations and prospects.

If we have to switch to a replacement supplier, the manufacture and delivery of our product candidates could be interrupted for an extended period, which could adversely affect our business. Establishing additional or replacement suppliers for any of the components or processes used in our COVID-19 vaccine and our product candidates, if required, may not be accomplished quickly. If we are able to find a replacement supplier, the replacement supplier would need to be qualified and may require additional regulatory authority approval, which could result in further delay. While we seek to maintain adequate inventory of the single source components and materials used in our COVID-19 vaccine and our product candidates, any interruption or delay in the supply of components or materials, or our inability to obtain components or materials from alternate sources at acceptable prices in a timely manner, could impair our ability to meet the demand for our COVID-19 vaccine and product candidates.

In addition, as part of the FDA's approval of our product candidates, we will also require FDA review of the individual components of our process, which include the manufacturing processes and facilities of our single source suppliers.

Our reliance on these suppliers, service providers and manufacturers subjects us to a number of risks that could harm our reputation, business and financial condition, including, among other things:

- delays to the development timelines for our product candidates;
- interruption of supply resulting from modifications to or discontinuation of a supplier's operations;
- delays in product shipments resulting from uncorrected defects, reliability issues, or a supplier's variation in a component;
- a lack of long-term supply arrangements for key components with our suppliers;
- inability to obtain adequate supply in a timely manner, or to obtain adequate supply on commercially reasonable terms;
- difficulty and cost associated with locating and qualifying alternative suppliers for our components in a timely manner;
- production delays related to the evaluation and testing of components from alternative suppliers, and corresponding regulatory qualifications;
- delay in delivery due to our suppliers prioritizing other customer orders over ours;
- damage to our reputation caused by defective components produced by our suppliers; and

- fluctuation in delivery by our suppliers due to changes in demand from us or their other customers.

If any of these risks materialize, costs could significantly increase and our ability to meet demand for our products could be impacted.

1.6 Risks Related to Intellectual Property

1.6.1 If our efforts to obtain, maintain, protect, defend and/or enforce the intellectual property related to our COVID-19 vaccine or our product candidates and technologies are not adequate, we may not be able to compete effectively in our market.

Our commercial success depends in part on our ability to obtain, maintain, protect, defend and enforce patent and other intellectual property, including trade secret and know-how, protection for our COVID-19 vaccine and for our product candidates, proprietary technologies and their uses, as well as our ability to operate, develop, manufacture and commercialize our COVID-19 vaccine or one or more of our product candidates without infringing, misappropriating or otherwise violating the intellectual property or other proprietary rights of our competitors or any other third parties, including any non-practicing entities or patent assertion entities. We generally seek to protect our intellectual property position by filing and/or licensing patent applications in the European Union, the United States and elsewhere related to our product candidates, proprietary technologies (including methods of manufacture) and their uses that are important to our business. Our patent applications cannot be enforced against third parties practicing the technology claimed in such applications unless, and until, patents issue from such applications, and then only to the extent that the issued claims cover third parties' activities in the countries in which they are performed. We cannot be certain that the claims in any of our patent applications will be considered patentable by the United States Patent and Trademark Office, or the "**USPTO**", courts in the United States or the patent offices and courts in other jurisdictions, including Europe, nor can we be certain that any claim in our issued patents will not be found invalid or unenforceable if challenged. Accordingly, there can be no assurance that our patent applications or those of our licensors will result in additional patents being issued or that issued patents will adequately cover our COVID-19 vaccine or our product candidates, or otherwise afford sufficient protection against competitors with similar technology, nor can there be any assurance that issued patents will not be infringed, designed around, invalidated or held unenforceable. Furthermore, we may not be able to apply for patents on certain aspects of our current or future products or product candidates, proprietary technologies and their uses in a timely fashion, at a reasonable cost, in all jurisdictions, or at all, and any potential patent protection we obtain may not be sufficient to prevent substantial competition.

Even claims of issued patents may later be found invalid or unenforceable, or may be modified or revoked in proceedings before various patent offices or in courts in the United States, Europe or other jurisdictions. The degree of future protection for our intellectual property and other proprietary rights is uncertain. Only limited protection may be available and may not adequately protect our rights or permit us to gain or keep any competitive advantage. If we do not adequately obtain, maintain, protect, defend and enforce our intellectual property and proprietary technology, competitors may be able to use our products, product candidates and proprietary technologies and erode or negate any competitive advantage we may have, which could have a material adverse effect on our financial condition and results of operations.

The patent application process is subject to numerous risks and uncertainties, and there can be no assurance that we or any of our current or future licensors or collaborators will be successful in prosecuting, obtaining, protecting, maintaining, enforcing or defending patents and patent applications necessary or useful to protect our products or product candidates, proprietary technologies (including methods of manufacture) and their uses. These risks and uncertainties include, from time to time, the following:

- the USPTO and various other governmental patent agencies require compliance with a number of procedural, documentary, fee payment and other provisions during the patenting process, the noncompliance with which can result in abandonment or lapse of a patent or patent application or a finding that a patent is unenforceable, and partial or complete loss of patent rights in the relevant jurisdiction;

- patent applications may not result in any patents being issued;
- claims of issued patents that we own (solely or jointly) or have in-licensed may be challenged, invalidated, modified, revoked, circumvented, found to be unenforceable or otherwise may not provide any competitive advantage;
- other parties may have designed around our patent claims or developed technologies that may be related or competitive to our COVID-19 vaccine or to our product candidates or other technologies, may have filed or may file patent applications and may have received or may receive patents that overlap or conflict with our patent filings, either by claiming the same or overlapping methods, products, reagents, tools or devices or by claiming subject matter that could dominate one or more of our patent claims;
- any successful opposition to claims of any patents owned by or in-licensed to us could deprive us of rights necessary for the development and exploitation of our COVID-19 vaccine or our product candidates and other technologies, or the successful commercialization of any product candidates and other technologies that we may develop;
- because patent applications in the United States and most other jurisdictions are confidential for a period of time after filing, we cannot be certain that we, our co-owners or our licensors were the first to file any patent application related to our product candidates, proprietary technologies and their uses;
- a court or patent office proceeding, such as a derivative action or interference, can be provoked or instituted by a third party or a patent office, and might determine that one or more of the inventions described in our patent filings, or in those we licensed, was first invented by someone else, so that we may lose rights to such invention(s);
- a court or other patent proceeding, such as an inter partes review, post grant review or opposition, can be instituted by a third party to challenge the inventorship, scope, validity and/or enforceability of our patent claims and might result in invalidation or revision of one or more of our patent claims, or in a determination that such claims are unenforceable;
- there may be significant pressure on the U.S. government and international governmental bodies to limit the scope of patent protection both inside and outside the United States for disease treatments that prove successful, as a matter of public policy regarding worldwide health concerns; existing legislation (for example, in the United States, the Public Readiness and Emergency Preparedness Act, etc.) may be interpreted, and new legislation may be passed, to permit third-party use of patented technologies relating to a public health concern, with little or no compensation to the patent holder(s); and
- countries other than the United States may have patent laws less favorable to patentees than those upheld by U.S. courts, allowing competitors a better opportunity to create, develop and market competing product candidates.

The patent position of biopharmaceutical companies generally is highly uncertain, involves complex legal and factual questions, and has been the subject of much litigation in recent years. The standards that the USPTO and its counterparts use to grant patents are not always applied predictably or uniformly and can change. Similarly, the ultimate degree of protection that will be afforded to biotechnology inventions, including ours, in the United States and other countries, remains uncertain and is dependent upon the scope of the protection decided upon by patent offices, courts and lawmakers. Moreover, there are periodic changes in patent law, as well as discussions in the U.S. Congress and in other jurisdictions about modifying various aspects of patent law. There is no uniform, worldwide policy regarding the subject matter and scope of claims granted or allowable in pharmaceutical or biotechnology patents. In certain countries, for example, methods for the medical treatment of humans are not patentable. More generally, the laws of some countries do not protect intellectual property rights to the same extent as U.S. or EU laws, and those countries may lack adequate rules and procedures for granting, maintaining, protecting, defending and enforcing our intellectual property rights.

Furthermore, the patent prosecution process is expensive and time-consuming, and we may not be able to file, prosecute, maintain, protect, defend, enforce or license all necessary or desirable patents or patent applications, as applicable, at a reasonable cost or in a timely manner. It is possible that we will fail to identify patentable aspects of our research and development output in time to obtain patent protection. Although we enter into non-disclosure and confidentiality agreements with parties who have

access to confidential or patentable aspects of our research and development output, such as our employees, corporate collaborators, outside scientific collaborators, CROs, CMOs, consultants, advisors and other third parties, if any of these parties were to breach such agreements and improperly disclose such output before a patent application is filed, this could jeopardize our ability to seek patent protection. We also rely to a certain extent on trade secrets, know-how, and technology, which are not protected by patents, to maintain our competitive position. If any trade secret, know-how or other technology not protected by a patent were to be disclosed to or independently developed by a competitor, our business and financial condition could be materially adversely affected.

The issuance of a patent is not conclusive as to its inventorship, priority date, scope, term, validity or enforceability so that any patents that may issue or that we may license may be challenged in the courts or patent offices in the United States, Europe and other jurisdictions. Once granted, patents may remain open to a variety of challenges, including opposition, interference, re-examination, post-grant review, inter partes review, nullification or derivation action in court or before patent offices or similar proceedings, and furthermore, may be challenged as a defense in any enforcement action that we might bring. Such challenges may result in loss of exclusivity or in patent claims being narrowed, terminated, disclaimed, invalidated, assigned to others or held unenforceable, any or all of which could limit our ability to stop others from using or commercializing similar or identical products, or limit the scope and/or term of patent protection of our products and product candidates and/ or eliminate it altogether, thus hindering or removing our ability to limit third parties from making, using or selling products or technologies that are similar or identical to ours, and/or reduce or eliminate royalty payments to us from our licensees. Given the amount of time required for the development, testing and regulatory review of new product candidates, patents protecting such candidates might expire before or shortly after such candidates are commercialized. Furthermore, our pending and future patent applications may not result in patents being issued which protect our technology or our product(s) or product candidates, or which effectively prevent others from commercializing competitive technologies and products. As a result, our intellectual property may not provide us with sufficient rights to exclude others from commercializing products similar or identical to ours.

Our ability to enforce our owned and in-licensed patent and other intellectual property rights depends on our ability to detect infringement, misappropriation and other violation of such patents and other intellectual property. It may be difficult to detect infringers, misappropriators and other violators who do not advertise the components or methods that are used in connection with their products and services. Moreover, it may be difficult or impossible to obtain evidence of infringement, misappropriation or other violation in a competitor's or potential competitor's product or service, and in some cases we may not be able to introduce obtained evidence into a proceeding or otherwise utilize it to successfully demonstrate infringement. We may not prevail in any lawsuits that we initiate and the damages or other remedies awarded if we were to prevail may not be commercially meaningful.

Furthermore, patents or other intellectual property rights that we may be able to secure for our COVID-19 vaccine or our other COVID-19 vaccine candidates could be restricted or preempted if governments determine that they will not enforce, or will require compulsory licensing of, technologies useful to address the spread of COVID-19.

In addition, proceedings to enforce or defend our owned or in-licensed patents could put our patents at risk of being invalidated, held unenforceable or interpreted narrowly. Such proceedings could also provoke third parties to assert claims against us, including that some or all of the claims in one or more of our patents are invalid or otherwise unenforceable. Such challenges may result in loss of patent rights, loss of exclusivity, or in patent claims being narrowed, invalidated or held unenforceable, which could limit our ability to stop others from using or commercializing similar or identical technology and products, or limit the duration of the patent protection of our technology and product candidates. If any of our owned or in-licensed patents covering our product candidates or other technologies are narrowed, invalidated or found unenforceable, or if a court found that valid, enforceable patents held by third parties covered one or more of our product candidates or other technologies, our competitive position could be harmed or we could be required to incur significant expenses to protect, enforce or defend our rights. If we initiate lawsuits to protect, defend or enforce our patents, or litigate against third-party claims, such proceedings would be expensive and would divert the attention of our management, technical personnel, and other employees even if the eventual outcome is favorable to us.

The degree of future protection for our intellectual property and other proprietary rights is uncertain, and we cannot ensure that:

- any of our patents, or any of our pending patent applications, if issued, or those of our licensors, will include claims having a scope sufficient to protect our product(s), our product candidates and other technologies;
- any of our pending patent applications or those of our licensors may issue as patents;
- others will not or may not be able to make, use, offer to sell or sell products that are the same as or similar to our own but that are not covered by the claims of the patents that we own or license;
- we will be able to successfully commercialize our products on a substantial scale, if approved, before the relevant patents that we own or license expire;
- we were the first to make the inventions covered by each of the patents and pending patent applications that we own or license;
- we, our co-owners or our licensors were the first to file patent applications for these inventions;
- others will not develop similar or alternative products or technologies that do not infringe the patents we own or license;
- any of the claims of patents we own or license will be found to ultimately be valid and enforceable;
- any patents issued to us or our licensors will provide a basis for an exclusive market for our commercially viable product candidates and other technologies or will provide us with any competitive advantages;
- a third party may not challenge the claims of patents we own or license and, if challenged, a court would hold that such patent claims are valid, enforceable and infringed;
- we may develop or in-license additional proprietary technologies that are patentable;
- the patents of others will not have an adverse effect on our ability to issue patents, or otherwise on our business;
- our competitors do not conduct research, development, testing or commercialization activities in countries where we do not have enforceable patent rights and then use the information learned from such activities to develop competitive products for sale in our major commercial markets;
- we will develop additional proprietary technologies, product(s) or product candidates that are separately patentable; and
- our, or our collaborators', development and commercialization activities, including our manufacturing processes, or products will not infringe patents of our competitors or any other third parties, including any non-practicing entities or patent assertion entities.

1.6.2 Other companies or organizations may challenge our intellectual property rights or the intellectual property rights of our partners or may assert intellectual property rights that prevent us or our partners from developing and commercializing our COVID-19 vaccine or our product candidates and other technologies.

We practice in new and evolving scientific fields, the continued development and potential use of which has resulted in many different patents and patent applications from organizations and individuals seeking to obtain intellectual property protection in the fields. We own and in-license patent applications and issued patents that describe and/or claim certain technologies, including products, reagents, formulations, tools and methods including uses and manufacturing methods, or features or aspects of any of these. These issued patents and pending patent applications claim certain compositions of matter and methods relating to the discovery, development, testing, manufacture and commercialization of therapeutic modalities and our delivery technologies, including lipid nanoparticles, or "**LNPs**". If we, our co-owners or our licensors are unable to obtain, maintain, protect, defend or enforce patent protection with respect to our products, product candidates and other technology and any other products, product candidates and technology that we may develop, our business, financial condition, results of operations and prospects could be materially harmed.

As the scientific fields mature, our known competitors and other third parties, many of whom have substantially greater resources than we do and many of whom have made significant investments in competing technologies, may seek or may have already obtained patents, and they have filed and will continue to file patent applications claiming inventions in the fields in the United States and elsewhere. This may limit, interfere with or eliminate our and our partners' ability to make, use, sell, import or otherwise exploit our COVID-19 vaccine or our product candidates or other technologies. There is uncertainty about which patents will issue, and, if they do, as to when, to whom and with what claims. With respect to both in-licensed and owned intellectual property, we cannot predict whether the patent applications we and our licensors are currently pursuing will issue as patents in any particular jurisdiction or whether the claims of any issued patents will provide sufficient protection from competitors. We, our co-owners, our partners or our licensors may in the future become a party to patent proceedings or priority disputes in the United States, Europe or other jurisdictions. In the United States, the Leahy-Smith America Invents Act, or the "**America Invents Act**", includes a number of significant changes that affect the way patent applications are prosecuted and also may affect patent litigation. These include allowing third-party submission of prior art to the USPTO during patent prosecution and additional procedures to attack the validity of a patent through USPTO-administered post-grant proceedings, including post-grant review, inter partes review and derivation proceedings. We expect that our competitors and other third parties will institute litigation and other proceedings, such as interference, reexamination and opposition proceedings, as well as inter partes and post-grant review proceedings against us and the patents and patent applications that we own and in-license.

Additionally, we face ongoing COVID-19 vaccine-related patent litigation. CureVac SE has brought litigation against us in Germany regarding three European patents, 1857122B1, or EP'122, 3708668B1, or EP'668, and 4023755B1, or EP'755, and three German utility models, DE202015009961, DE202015009974, and DE202021004130, or the "**CureVac IP**". BioNTech filed a nullity action in the Federal Patent Court of Germany seeking a declaration that EP'122 is invalid, initiated cancellation actions against the CureVac IP in the German Patent and Trademark Office, and filed opposition proceedings in the European Patent Office, or "**EPO**", seeking the revocation of EP'668 and EP'755. ModernaTX, Inc., or "**Moderna**", has brought litigation against us and Pfizer regarding European patents 3590949B1, or EP'949, and 3718565B1, or EP'565, in Germany, England and Wales (only EP'949 currently at issue), the Kingdom of the Netherlands, or the "**Netherlands**", Ireland, and the Kingdom of Belgium, or "**Belgium**", and regarding U.S. Patent Nos. 10,898,574, 10,702,600, and 10,933,127 in the United States. BioNTech and Pfizer also initiated proceedings seeking the revocation of EP'949 in the Business and Property Courts of England and Wales and have filed opposition proceedings in the EPO seeking the revocation of EP'949 and EP'565, the latter of which the EPO's Boards of Appeal in a preliminary opinion believes is likely invalid. BioNTech and Pfizer have filed petitions for inter partes review before the Patent Trial and Appeal Board in the United States with respect to U.S. Patent Nos. 10,702,600 and 10,933,127. Arbutus Biopharma Corp., or "**Arbutus**", and Genevant Sciences GmbH, or "**Genevant**", have brought litigation against us and Pfizer in the United States regarding U.S. Patent Nos. 9,504,651; 8,492,359; 11,141,378; 11,298,320; and 11,318,098. Promosome LLC, or "**Promosome**", has initiated litigation against us and Pfizer in the Unified Patent Court (Munich Division) regarding one European patent, EP 2 401 365. GlaxoSmithKline Biologicals SA and GlaxoSmithKline LLC, or collectively, "**GSK**", have brought litigation against us and Pfizer in the United States regarding U.S. Patent Nos. 11,638,693; 11,638,694; 11,666,534; 11,766,401; 11,786,467; 11,759,422; 11,655,475; and 11,851,660, and in the High Court of Ireland, as well as the Unified Patent Court, regarding European Patent Nos. 2,590,626, 4,066,856, and 4,226,941. BioNTech and Pfizer also initiated proceedings seeking the revocation of EP'626, EP'856, and EP'941 in the Business and Property Courts of England and Wales and have filed opposition proceedings in the EPO seeking the revocation of EP'856 and EP'941. We cannot guarantee that we will not become subject to additional COVID-19 vaccine patent infringement lawsuits in the future. In addition, should Pfizer not prevail in any of the ongoing COVID-19 vaccine patent infringement lawsuits to which it is a party, Pfizer may seek to require us to indemnify Pfizer for losses suffered therefrom as well as any losses from future COVID-19 vaccine patent infringement lawsuits in which it does not prevail. We believe we have strong defenses against each of these claims and intend to vigorously defend ourselves in each proceeding, but we can make no assurances regarding the ultimate outcome of any of these matters. Additionally, as we continually evaluate these various proceedings, we may from time to time make strategic decisions to settle or otherwise resolve certain proceedings despite our continued belief in the strengths of our defenses.

We expect that we will continue to be subject to similar proceedings or priority disputes, including oppositions, in Europe or other jurisdictions relating to patents and patent applications in our portfolio.

If we, our co-owners, our partners or our licensors are unsuccessful in any interference proceedings or other priority or validity disputes, including any derivations, post-grant review, inter partes review or oppositions, to which we or they are subject, we may lose valuable intellectual property rights through the narrowing or loss of one or more patents owned or in-licensed, or our owned or in-licensed patent claims may be narrowed, invalidated or held unenforceable. In many cases, the possibility of appeal exists for either us or our opponents, and it may be years before final, unappealable rulings are made with respect to these patents in certain jurisdictions. The timing and outcome of these and other proceedings is uncertain and may adversely affect our business if we are not successful in defending the patentability and scope of our pending and issued patent claims. Even if our rights are not directly challenged, disputes could lead to the weakening of our intellectual property rights. Our defense against any attempt by third parties to circumvent or invalidate our intellectual property rights could be costly to us, could require significant time and attention of our management, technical personnel and other employees and could have a material adverse impact on our business and our ability to successfully compete against our current and future competitors.

There are many issued and pending patent filings that claim aspects of technologies that we may need for our mRNA products or product candidates, or other product candidates, including patent filings that relate to relevant delivery technologies. There are also many issued patents that claim targeting genes or portions of genes that may be relevant for immunotherapies we wish to develop. In addition, as evidenced by the lawsuits brought against Moderna, Pfizer and us, there may be additional issued and pending patent applications that may be asserted against us in a court proceeding or otherwise based upon the asserting party's belief that we may need such patents for the development, manufacturing, testing and commercialization of our COVID-19 vaccine or of our product candidates. Thus, it is possible that one or more organizations, ranging from our competitors to non-practicing entities or patent assertion entities, has or will hold patent rights to which we may need a license, or hold patent rights which could be asserted against us. Such licenses may not be available on commercially reasonable terms or at all, or may be non-exclusive. If those organizations refuse to grant us a license to such patent rights on reasonable terms, if we fail to invalidate relevant patents, or if a court or other governing body determines that we need such patent rights that have been asserted against us and we are not able to obtain a license on reasonable terms or at all, we may be unable to perform research and development or other activities or market products covered by such patents, and we may need to cease the development, manufacture, testing and commercialization of one or more of the product candidates we may develop. Any of the foregoing could result in a material adverse effect on our business, financial condition, results of operations or prospects.

1.6.3 We may not be successful in obtaining, maintaining, protecting or defending the necessary intellectual property rights to allow us to identify and develop product candidates, and test product components and manufacturing processes for our development pipeline.

We currently have rights to certain intellectual property through our owned and in-licensed patents and other intellectual property rights relating to identification, development and testing of our product candidates or other technologies. As our activities may involve additional product candidates or services that could require the use of intellectual property and other proprietary rights held by third parties, the growth of our business could depend in part on our ability to acquire, in-license or use such intellectual property and proprietary rights. In addition, our product candidates may require specific formulations to work effectively and efficiently and these intellectual property and other proprietary rights may be held by others. We may be unable to secure such licenses or otherwise acquire or in-license any compositions, methods of use, processes or other third-party intellectual property rights from third parties that we identify as necessary, on reasonable terms, or at all, for product candidates and other technologies that we may develop. The licensing and acquisition of third-party intellectual property rights is a competitive area, and a number of more established companies are also pursuing strategies to license or acquire third-party intellectual property rights that we may consider attractive or necessary. These established companies may have a competitive advantage over us due to their size, cash resources, and greater clinical development and commercialization capabilities.

We sometimes collaborate with academic institutions and/or utilize services of CROs and CMOs in certain aspects of our research or development under written agreements with these parties. These agreements may not ensure protection of intellectual property rights in developed technology, or may fail to provide us with sufficient control of or access to such intellectual property rights. For example, agreements with these academic institutions typically provide us with an option to negotiate a license to any of the institution's rights in technology resulting from the collaboration. However, these institutions may not honor our option and right of first negotiation for intellectual property rights or we may otherwise be unable to negotiate a license within the specified time frame or under terms that are acceptable to us. If we are unable to do so, the institution may offer the intellectual property rights to other parties, potentially blocking our ability to pursue our program or otherwise continue to develop certain product candidates or other technologies. CROs and/or CMOs may control certain technologies that were utilized in and/or developed through work on our behalf, and may not pursue protection of such technologies, or may provide us with only non-exclusive rights in such technologies, so that relevant technologies may be shared with other parties including our competitors. In any relationship with a third party, there is a risk of disagreement over intellectual property rights (including inventorship or ownership of, rights to protect and/or enforce, and/or rights to use) in utilized or developed technologies.

Moreover, some of our owned patents and patent applications are, and may in the future be, co-owned with third parties. If we are unable to obtain, or continue to maintain, exclusive rights to any such third-party co-owners' interest in such patents or patent applications, such co-owners may be able to license their rights to other third parties, including our competitors, and our competitors could market competing products and technologies. In addition, we may need the cooperation of any such co-owners of our patents in order to enforce such patents against third parties, and such cooperation may not be provided to us. Any of the foregoing could have a material adverse effect on our competitive position, business, financial conditions, results of operations and prospects.

In addition, third parties that perceive us to be a competitor may be unwilling to assign or license rights to us. We also may be unable to license or acquire third-party intellectual property rights on terms that would allow us to make an appropriate return on our investment. If we are unable to successfully obtain rights to required third-party intellectual property rights or maintain, protect, defend or enforce the existing intellectual property rights we have, we may have to abandon the development and commercialization of the relevant program or product candidate, which could have a material adverse effect on our business, financial condition, results of operations and prospects.

1.6.4 The lifespans of our patents may not be sufficient to effectively protect our products or product candidates, technologies and business.

Patents have a limited lifespan. In the United States, the natural expiration of a patent is generally 20 years after its first effective non-provisional filing date, assuming maintenance fees are timely paid after the patent has issued. Most other jurisdictions also provide a 20-year nominal patent term, though many require payment of regular, often annual, annuities to maintain pendency of an application or viability of an issued patent. In some jurisdictions, one or more options for extension of a patent term may be available, but even with such extensions, the lifespan of a patent, and the protection it affords, is limited. Even if patents covering our product candidates, proprietary technologies and their uses are obtained, once the patent term has expired, we may be subject to competition from third parties that can then use the inventions included in such patents to create competing products and technologies. In addition, although upon issuance in the United States a patent's life can be increased based on certain delays caused by the USPTO, this increase can be reduced or eliminated based on certain delays caused by the patent applicant during patent prosecution. The USPTO can also require, in certain circumstances, that the expiration date of a subject patent be shortened by the filing of a terminal disclaimer over one or more patents that may expire sooner than the subject patent. Given the amount of time required for the development, testing and regulatory review of new product candidates, patents protecting such product candidates might expire before or shortly after such candidates are commercialized. If any patents that we own or in-license expire, we would not be able to stop others from using or commercializing similar or identical technology and products, and our competitors could market competing products and technology. Any of the foregoing could have a material adverse effect on our competitive position, business, financial conditions, results of operations and prospects.

1.6.5 If we do not obtain patent term extension and data exclusivity for any product candidates we may develop, our business may be materially harmed.

Depending upon the timing, duration and specifics of any FDA marketing approval of any product candidates we may develop, one or more of our U.S. patents may be eligible for limited patent term extension under the Drug Price Competition and Patent Term Restoration Action of 1984, or "**Hatch-Waxman Amendments**". The Hatch-Waxman Amendments permit a patent extension term of up to five years as compensation for patent term lost during the FDA regulatory review process for a drug product subject to the provisions of the Hatch-Waxman Act. A patent term extension cannot extend the remaining term of a patent beyond a total of 14 years from the date of product approval, only one patent may be extended and only those claims covering the approved drug, a method for using it, or a method for manufacturing it may be extended. However, we may not be granted an extension because of, for example, failing to exercise due diligence during the testing phase or regulatory review process, failing to apply within applicable deadlines, failing to apply prior to expiration of relevant patents, or otherwise failing to satisfy applicable requirements. For example, we did not extend any patent for our COVID-19 vaccine. Moreover, the applicable time period or the scope of patent protection afforded could be less than we request. If we are unable to obtain patent term extension or the term of any such extension is less than we request, our competitors may obtain approval of competing products following our patent expiration, and our business, financial condition, results of operations and prospects could be materially harmed.

1.6.6 If we fail to comply, or are viewed to have failed to comply, with our obligations in the agreements under which we license intellectual property rights from third parties or otherwise experience disruptions to our business relationships with our licensors or other third parties, we could lose license rights that are important to our business or suffer monetary losses.

We are heavily reliant upon licenses to certain intellectual property and other proprietary rights from third parties that are important or necessary to the development and commercialization of our technology and product(s) or product candidates, and we expect to enter into similar license agreements in the future. Licensing of intellectual property is important to our business and involves complex legal, business and scientific issues and is complicated by the rapid pace of scientific discovery in our industry. Our licenses may not provide exclusive rights to use such intellectual property and technology in all relevant fields of use and in all territories in which we may wish to develop, test, or commercialize our technology and products in the future. As a result, we may not be able to prevent competitors from developing and commercializing competitive products in territories included in any or all of our licenses.

Where we obtain licenses from, or collaborate with, third parties, in some circumstances we may not have the right to control the preparation, filing, prosecution, maintenance, enforcement and defense of patents and patent applications covering the technology that we license from, or that arises through collaboration with, such third parties, or such activities, if controlled by us, may require the input of such third parties. In some cases, patent prosecution (including preparation and filing) of our in-licensed intellectual property or of intellectual property developed through collaboration, is controlled solely by the licensor or collaborator. We may also require the agreement and/or cooperation of our licensors and collaborators to protect, enforce, utilize, or defend any in-licensed patent rights, and such agreement and/or cooperation may not be provided. Therefore, we cannot be certain that these patents and patent applications will be prepared, filed, prosecuted, maintained, protected, enforced or defended in a manner consistent with the best interests of our business. Any patents or patent applications that we in-license may be challenged, narrowed, circumvented, invalidated or held unenforceable, or our licensors may not properly maintain such patents or patent applications and they may expire. If our licensors fail to obtain, maintain, defend, protect or enforce the intellectual property we license from them, we could lose our rights to the intellectual property and our competitors could market competing products using the inventions in such intellectual property. In certain cases, we control the prosecution of patents included from in-licensed technology. In the event we breach any of our obligations related to such prosecution, we may incur significant liability to our collaborators. If we and our licensors or collaborators disagree over IP protection strategies for relevant technologies, disputes may arise, and we could lose access to or control over protection of technologies important to our business. If so, we may not be able to adequately protect our product(s) or product candidates, including not being able to prevent a competitor or other third party from developing the same product(s) or product candidates for the same or a different use. Any of the foregoing could have a material adverse effect on our competitive position, business, financial conditions, results of operations and prospects.

Moreover, we may disagree from time to time with licensors or collaborators regarding, among other things, the interpretation of each party's obligations or the amounts payable under our agreements. For example, we were in discussions with the University of Pennsylvania, or "**UPenn**", and the National Institutes of Health, or the "**NIH**", concerning royalties and other related amounts allegedly owed on sales of our COVID-19 vaccine since commercialization. UPenn subsequently filed suit against us in the U.S. District Court for the Eastern District of Pennsylvania in connection with this dispute. On December 20, 2024, we entered into a settlement agreement with the NIH pursuant to which we agreed, among other things, to pay $791.5 million to the NIH. On March 27, 2025, we entered into a settlement agreement with UPenn pursuant to which we agreed, among other things, to pay up to $467.0 million to UPenn, consisting of $400.0 million as royalties for calendar years 2020-2023, up to $15.0 million in funding for a three-year extension of the research term of our and UPenn's vaccine alliance, and $52.0 million as a contribution to a research and development investment fund to be jointly managed by us and UPenn.

If we are found to have failed to satisfy obligations or materially breached any of our agreements, such as licenses to third-party intellectual or any disagreements between us and our licensors, a licensor could potentially have the right or reason to terminate the license, to exercise the option of a non-exclusive license, which would allow our competitors to have access to the same intellectual property and technology licensed to us. Our existing license agreements impose, and we expect that future license agreements will impose, various diligence, milestone and royalty payment, exclusivity and other obligations on us. If we fail to comply with our obligations under these agreements, including royalty payments, or we are subject to a bankruptcy, the licensor may have the right to terminate the license agreement, in which event we would not be able to develop, market and commercialize product(s) or product candidates covered by the license agreement. In spite of our best efforts and even if we disagree, our licensors might still conclude that we have materially breached our license agreements and might therefore terminate the license agreements, thereby removing our ability to develop, test and commercialize the product(s) or product candidates covered by these license agreements. In the event that any of our license agreements were to be terminated by the licensor, we may need to negotiate new or reinstated agreements, which may not be available to us on equally favorable terms, or at all. If these license agreements are rightfully terminated, or if the underlying patents or other intellectual property fail to provide the intended exclusivity, competitors would have the freedom to seek regulatory approval of, and to market and commercialize, products similar or identical to ours, and our licensors may be able to seek additional judicial remedies. In addition, we may seek to obtain additional licenses from our licensors and, in connection with obtaining such licenses, we may agree to amend our existing license agreements in a manner that may be more favorable to the licensors, including by agreeing to terms that could enable third parties (potentially including our competitors) to receive licenses to a portion of the intellectual property that is subject to our existing licenses. Failure to prevail with respect to any contractual disagreements could result in a material adverse effect on our competitive position, business, financial conditions, results of operations or prospects, particularly if discussions result in legal or other dispute resolution proceedings.

We are generally also subject to all of the same risks with respect to protection of intellectual property that we license, as we are for intellectual property that we own, which are described in this section. If we, our co-owners or our licensors fail to adequately protect this intellectual property, our ability to develop, test, market and commercialize our product(s) or product candidates could suffer. Moreover, if disputes over intellectual property that we have in-licensed prevent or impair our ability to maintain our current licensing arrangements on commercially acceptable terms, we may be unable to successfully develop, test, market and commercialize the affected product(s) or product candidates, which could have a material adverse effect on our business, financial condition, results of operations and prospects.

1.6.7 Some of our in-licensed intellectual property has been discovered through government-funded programs and thus may be subject to federal regulations such as "march-in" rights and certain reporting requirements, and compliance with such regulations may limit our exclusive rights and our ability to contract with manufacturers.

Certain intellectual property rights that have been in-licensed, including patent applications and patents that we in-license from the University of Pennsylvania, the Louisiana State University, the Broad Institute, the NIH, Genevant, and CellScript, have been generated through the use of U.S. government funding and are therefore subject to certain federal regulations. The U.S. government may have certain rights to intellectual property embodied in our current or future product candidates pursuant to the Bayh-Dole Act of 1980, or the "**Bayh-Dole Act**". These U.S. government rights may include a non-exclusive, non-transferable, irrevocable worldwide license to use inventions covered by that Act for any governmental purpose. In addition, the U.S. government may have the right, under certain limited circumstances, to require the licensor to grant exclusive, partially exclusive or non-exclusive licenses to any of these inventions to a third party if it determines that (i) adequate steps have not been taken to commercialize the invention, (ii) government action is necessary to meet public health or safety needs or (iii) government action is necessary to meet requirements for public use under federal regulations (also collectively referred to as "march-in rights"). The U.S. government may also have the right to take title to these inventions if the licensor fails to disclose the invention to the government or fails to file an application to register the intellectual property within specified time limits. Any exercise by the government of such rights could harm our competitive position, business, financial condition, results of operations and prospects. Intellectual property generated under a government-funded program is also subject to certain reporting requirements, compliance with which may require us to expend substantial resources.

In addition, the U.S. government requires that any products embodying any such inventions or produced through the use of any such inventions be manufactured substantially in the United States. This preference for U.S. industry may be waived by the federal agency that provided the funding if the owner or assignee of the intellectual property can show that reasonable but unsuccessful efforts have been made to grant licenses on similar terms to potential licensees that would be likely to manufacture the products substantially in the United States or that under the circumstances domestic manufacture is not commercially feasible. We may not be able to obtain a waiver of this preference for U.S. industry, and this preference may limit our ability to contract with non-U.S. product manufacturers for products covered by such intellectual property. To the extent any of our owned or in-licensed future intellectual property is generated through the use of U.S. government funding, the provisions of the Bayh-Dole Act may similarly apply. If we or our licensors are unable to secure an exemption to these manufacturing requirements, if we comply with them, or if we are unable to comply with them, we may experience a material adverse effect on our competitive position, business, financial conditions, results of operations and prospects.

1.6.8 Our current proprietary position for certain products and product candidates depends upon our owned or in-licensed patent filings covering components, manufacturing-related methods, formulations and/or methods of use, which may not adequately prevent a competitor or other third party from using the same product candidate for the same or a different use.

Composition of matter patent protection is generally considered to be desirable because it provides protection without regard to any particular method of use or manufacture or formulation. While we have pursued or obtained patent protection covering components of certain product candidates and tests, manufacturing-related methods, formulations and/or methods of use, we have not yet obtained patent protection for all components of certain product candidates and tests, manufacturing-related methods, formulations and/or methods of use. For instance, we do not currently have any claims in our owned or in-licensed issued U.S. patents that cover the overall construct used in our iNeST product candidates. We also cannot be certain that claims in any future patents issuing from our pending owned or in-licensed patent applications or our future owned or in-licensed patent applications will cover the composition of matter, tests, manufacturing-related methods, formulations and/or methods of use of our current or future product candidates. Method of use patents protect the use of a product for the specified method and formulation patents cover formulations to deliver therapeutics. These types of patents do

not prevent a competitor or other third party from developing, testing, marketing or commercializing a similar or identical product for an indication that is outside the scope of the patented method or from developing a different formulation that is outside the scope of the patented formulation. Moreover, with respect to method of use patents, even if competitors or other third parties do not actively promote their product for our targeted indications or uses for which we may obtain patents, physicians may recommend that patients use these products off-label, or patients may do so themselves. Although off-label use may infringe or contribute to the infringement of method of use patents, the practice is common and this type of infringement is difficult to prevent or enforce. Consequently, we may not be able to prevent third parties from practicing our inventions in the United States or abroad.

1.6.9 Intellectual property rights of third parties could adversely affect our ability to commercialize our product(s) and product candidates, and we might be required to litigate or obtain licenses from third parties in order to develop, test or market our product(s) and product candidates.

Because our products and product candidates are still in early stages of development, testing or commercialization, and one or more features of the products or product candidates, or related technologies such as their manufacture, formulation, testing or use, may still change, we cannot be confident that we are aware of all third-party intellectual property that might be relevant to products that we eventually hope to commercialize. Furthermore, even if all aspects of our product(s) or product candidates, or of other technology, were known, it is possible that third-party intellectual property, which may or may not currently be public, could develop in a manner (for example, through issuance of additional patents) that could impede our ability to make or use relevant products or product candidates, or other technology. Various third-party competitors practice in relevant spaces, and may have issued patents, or patent applications that will issue as patents in the future, that will impede or preclude our ability to commercialize products. Furthermore, while U.S. patent laws provide a “safe harbor” to our clinical product candidates under 35 United States Code § 271(e)(1), which exempts from patent infringement activities related to pursuing FDA approval for a drug product, that exemption expires when an NDA or BLA is submitted. Accordingly, after such submission (including for certain formulations of our COVID-19 vaccine), the § 271(e)(1) safe harbor may no longer provide the same level of protection from third party patent infringement claims for that product. We may become exposed to lawsuits from third parties who consider our COVID-19 vaccine to infringe their patents. More generally, given the uncertainty of clinical trials, we cannot be certain of the timing of their completion and it is possible that we might want to submit an NDA or BLA at a time when one or more relevant third-party patents is in force. Thus, it is possible that at the time that we commercialize our product candidates, one or more third parties may have issued patent claims that cover such products or critical features of their production, testing or use. We may not be able to commercialize our products if patents issued to third parties or other third-party intellectual property rights cover, or may be alleged to cover, our products or elements thereof, or their methods of manufacture, testing or use at the time that we seek to commercialize them. In such cases, we may not be in a position to develop, test or commercialize product candidates unless we successfully pursue litigation to nullify or invalidate the third-party intellectual property right concerned, successfully design around their claims, or enter into a license agreement with the intellectual property right holder(s). Such litigation or licenses could be costly, licenses could not be available on commercially reasonable terms or at all, and design-around could be prohibitively expensive or impossible.

Additionally, with respect to our products, product candidates and related technologies that may play a role in addressing a pandemic or other public health emergency, it is unclear whether governments around the world will protect vaccine manufacturers for liability from infringement of third party intellectual property, at least during the period of such public health emergency. Thus, it is possible that third parties may assert intellectual property rights against us relating to our COVID-19 vaccine, and that we will not be successful in arguing that commercialization of our COVID-19 vaccine is exempted from infringement and/or liability for infringement (for example, under 35 United States Code § 271(e)(1), discussed above, or under the Public Readiness and Emergency Preparedness Act, etc.). Furthermore, even if such commercialization was deemed protected from infringement during the period of the pandemic crisis, now that various global and U.S. agencies have declared an end to the global COVID-19 public health emergency, any such exemption may be terminated so that continuing commercialization could expose us to liability, and might even be precluded if third party(ies) who hold relevant intellectual property rights are able to secure injunction(s) or are unwilling to license to us on commercially feasible terms.

It is also possible that we have failed to identify relevant third-party patents that cover, or applications that will mature into patents that cover, one or more aspects of our platform or product(s) and product candidates. Given that, in most jurisdictions, a patent application is confidential when initially filed, and typically remains so until it is published about 18 months after the initial filing, it may not be possible for us to identify certain relevant filings in time to avoid using the technology that they claim. Additionally, the claims of pending patent applications can, subject to certain limitations, be amended over time, so that even patent applications whose claims did not cover our products or activities when published could be amended to cover one or more aspects of our platform or product candidates over time, and we might not be aware that such amendment had been made.

1.6.10 We may be involved in lawsuits or other legal proceedings to protect or enforce our intellectual property or the intellectual property of our licensors, or to defend against third-party claims that we infringe, misappropriate or otherwise violate such third party's intellectual property, each of which could be expensive, time consuming and unsuccessful.

There is a substantial amount of litigation, both within and outside the United States, involving patent and other intellectual property rights in the biotechnology and pharmaceutical industries, including patent infringement lawsuits, interferences, oppositions, ex parte reexaminations, post-grant review, and inter partes review proceedings before the USPTO and corresponding European and other non-U.S. patent offices.

Competitors and other third parties may infringe, misappropriate or otherwise violate our intellectual property rights or those of our licensors. To prevent infringement, misappropriation or other unauthorized use, we may be required to file claims, which can be expensive and time-consuming. In certain instances, we have instituted and may in the future institute inter partes review proceedings against issued U.S. patents and opposition proceedings against European patents owned by third parties. We have a number of opposition proceedings ongoing at the EPO against third-party patents related to mRNA technologies. As the biotechnology and pharmaceutical industries expand and more patents are issued, the risk increases that our products, product candidates and services may be subject to claims of infringement of the patent rights of third parties.

In addition, in a patent infringement proceeding, our owned or in-licensed patents may be challenged and a court may decide that a patent we own or in-license is not valid, is unenforceable and/or is not infringed. If we or any of our potential future collaborators were to initiate legal proceedings against a third party to enforce a patent directed at one of our product(s) and/or product candidates, the defendant could counterclaim that our patent is invalid and/or unenforceable in whole or in part. In patent litigation in the United States, defendant counterclaims alleging invalidity and/or unenforceability are commonplace. Grounds for a validity challenge include an alleged failure to meet any of several statutory requirements, including novelty, non-obviousness, enablement or written description. Grounds for an unenforceability assertion could include an allegation that someone connected with prosecution of the patent withheld relevant information from the USPTO or made a misleading statement during prosecution. Third parties may also raise similar claims before the USPTO, even outside the context of litigation. Similar mechanisms for challenging the validity and enforceability of a patent exist in ex-U.S. patent offices and may result in the revocation, cancellation or amendment of any ex-U.S. patents we hold in the future. The outcome following legal assertions of invalidity and unenforceability is unpredictable, and prior art could render our patents or those of our licensors invalid. If a defendant were to prevail on a legal assertion of invalidity and/or unenforceability, we could lose at least part, and perhaps all, of the patent protection on a product and/or product candidate. Such a loss of patent protection would have a material adverse impact on our competitive position, business, financial conditions, results of operations and prospects.

Third parties, including our competitors to non-practicing entities or patent assertion entities, may assert that we are employing their intellectual property and other proprietary technology without authorization. There may be third-party patents or patent applications with claims to materials, formulations, testing, methods of manufacture or methods for treatment related to the use, development, testing, manufacture or commercialization of our COVID-19 vaccine or product candidates. For example, BioNTech SE and certain of our wholly owned subsidiaries are defendants in litigations initiated by CureVac, Moderna, Arbutus, Genevant, GSK, and Promosome regarding *Comirnaty*. As patent applications can take many years to issue, there may be currently pending patent applications which may later result in issued

patents that our product(s) and/or product candidates may infringe. In addition, third parties may obtain patents in the future and claim that our technologies infringe upon these patents. If any third-party patents were held by a court of competent jurisdiction to cover the testing or manufacturing processes of any of our product(s) and/or product candidates, any molecules formed during the testing and manufacturing processes or any final product itself, the holders of any such patents may obtain injunctive or other equitable relief, which could effectively block our ability to develop, test and commercialize such product and/or product candidate unless we obtained a license under the applicable patents, or until such patents expire. Similarly, if any third-party patents were held by a court of competent jurisdiction to cover aspects of our formulations, processes for testing or manufacture or methods of use, including combination therapy, the holders of any such patents may be able to block our ability to develop, test and commercialize the applicable product and/or product candidate unless we obtained a license or until such patent expires. In either case, such a license may not be available on commercially reasonable terms, or at all, or may be non-exclusive.

Interference or derivation proceedings provoked by third parties or brought by us or declared by the USPTO may be necessary to determine the priority of inventions with respect to our patents or patent applications or those of our licensors. An unfavorable outcome could require us to cease using the related technology or to attempt to license rights to it from the prevailing party. Our business could be harmed if the prevailing party does not offer us a license on commercially reasonable terms or at all, or if a non-exclusive license is offered and our competitors gain access to the same intellectual property and technology. Our defense of litigation, interference, derivation or similar proceedings may fail and, even if successful, may result in substantial costs and distract our management, technical personnel and other employees. In addition, the uncertainties associated with litigation could have a material adverse effect on our ability to raise the funds we need to continue our clinical trials and research programs, to license necessary technology from third parties or to enter into development or manufacturing collaborations that would help us bring our product(s) and/or product candidates to market.

Even if resolved in our favor, litigation or other legal proceedings relating to our intellectual property rights may cause us to incur significant expenses, and could distract our management, technical personnel and other employees from their normal responsibilities. Such proceedings could substantially increase our operating losses and reduce the resources available for development activities or any future sales, marketing or distribution activities. We may not have sufficient financial or other resources to conduct such proceedings adequately. Some of our competitors may be able to sustain the costs of such proceedings more effectively than we can because of their greater resources in one or more aspects, or for other reasons. Uncertainties resulting from the initiation and continuation of patent litigation or other proceedings could compromise our ability to compete in the marketplace.

In the event of a successful claim of infringement, misappropriation or other violation against us, we may have to pay substantial damages, including treble damages and attorneys' fees for willful infringement, pay royalties, redesign our infringing products, or obtain one or more licenses from third parties, which may not be made available on commercially favorable terms, if at all, or may require substantial time and expense.

Such licenses are likely to be non-exclusive and, therefore, our competitors may have access to the same intellectual property and technology licensed to us. If we fail to obtain a required license and are unable to design around a patent, we may be unable to effectively market some of our technology and product(s) and/or product candidates, which could limit our ability to generate revenues or achieve or maintain profitability and possibly prevent us from generating revenues sufficient to sustain our operations. Moreover, certain of our collaborations provide, and we expect additional collaborations to provide, that royalties payable to us for licenses to our intellectual property may be offset by amounts paid by our collaborators to third parties for licenses to such third parties' intellectual property in the relevant fields, which could result in significant reductions in our revenues from products developed through collaborations.

In addition, in connection with certain license and collaboration agreements, we have agreed to indemnify certain third parties for certain costs incurred in connection with litigation relating to intellectual property rights or the subject matter of the agreements. The cost to us of any litigation or other proceeding relating to intellectual property rights, even if resolved in our favor, could be substantial.

Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation, there is a risk that some of our confidential information could be compromised by disclosure during this type of litigation. There could also be public announcements of the results of hearings, motions or other interim proceedings or developments in any litigation or other intellectual property proceedings. If securities analysts or investors perceive these results to be negative, the price of the ADSs representing our ordinary shares could decline.

Obtaining and maintaining our patent protection depends on compliance with various procedural, document submission, fee payment and other requirements imposed by governmental patent agencies, and our patent protection could be reduced or eliminated for non-compliance with these requirements.

Periodic maintenance fees, renewal fees, annuity fees, and various other governmental fees on patents and applications will be due to be paid to the USPTO and various governmental patent agencies outside of the United States in several stages over the lifetime of the patents or applications. We have systems in place to remind us to pay these fees and we employ an outside firm and rely on our outside counsel to pay these fees due to non-U.S. patent agencies; however, we cannot guarantee that we will successfully pay these fees. The USPTO and various non-U.S. governmental patent agencies require compliance with a number of procedural, documentary, fee payment, and other similar provisions during the patent application process. We employ reputable law firms and other professionals to help us comply, and in many cases, an inadvertent lapse can be cured by payment of a late fee or by other means in accordance with the applicable rules. However, there are situations in which non-compliance can result in abandonment or lapse of the patent or patent application, resulting in partial or complete loss of patent rights in the relevant jurisdiction. We are also dependent on our licensors to take the necessary action to comply with these requirements with respect to our in-licensed intellectual property, and we cannot guarantee that they will do so. In such an event, our competitors might be able to enter the market with similar or identical products or technology, and this would have a material adverse impact on our business, financial condition, results of operations and prospects.

1.6.11 Changes in patent law in the United States or in other countries could diminish the value of patents in general, thereby impairing our ability to protect our products.

As is the case with other biotechnology companies, our success is heavily dependent on our intellectual property rights, particularly patents that we own and in-license. Obtaining and enforcing patents in the biotechnology industry involve both technological and legal complexity, and therefore obtaining and enforcing biotechnology patents is costly, time-consuming and inherently uncertain. Moreover, there are periodic changes in patent law. For example, after March 2013, under the America Invents Act, the United States transitioned to a first inventor to file system in which, assuming that other requirements for patentability are met, the first inventor to file a patent application will be entitled to the patent on an invention regardless of whether a third party was the first to invent the claimed invention. The America Invents Act also includes a number of significant changes that have affected the way patent applications are prosecuted and also affect patent litigation. Such legislation and its implementation could increase the uncertainties and costs surrounding the prosecution of our patent applications and the enforcement or defense of our issued patents, all of which could have a material adverse effect on our business, financial condition, results of operations and prospects.

In addition, decisions by courts and governmental bodies in the United States and other jurisdictions may affect the value of patent applications, issued patents or other intellectual property that we own or in-license. For example, recent U.S. Supreme Court rulings have narrowed the scope of patent protection available in certain circumstances and weakened the rights of patent owners in certain situations. In addition to increasing uncertainty with regard to our ability to obtain patents in the future, this combination of events has created uncertainty with respect to the value of patents, once obtained. Depending on decisions by the U.S. Congress, the federal courts, the USPTO and other administrative agencies, and their equivalents in other jurisdictions, the laws and regulations governing patents could change in unpredictable ways that could have a material adverse effect on our existing patent portfolio and our ability to obtain, maintain, protect, defend or enforce our intellectual property in the future.

1.6.12 If we are unable to protect the confidentiality of our trade secrets, our business and competitive position would be harmed.

In addition to seeking patent protection for some of our technology, product(s) and product candidates, we also seek to rely on trade secret protection and confidentiality agreements to maintain our competitive position and protect proprietary know-how that is not patentable, processes for which patents are difficult to enforce and any other elements of our product discovery development, testing, manufacturing and commercialization processes that involve proprietary know-how, information or technology that is not covered by patents. However, trade secrets and know-how may be difficult to protect.

We seek to protect these trade secrets, know-how and other proprietary technology, in part, by entering into non-disclosure and confidentiality agreements with parties who have access to them, such as our employees, corporate collaborators, outside scientific collaborators, CROs, CMOs, consultants, advisors and other third parties. We also enter into confidentiality and invention or patent assignment agreements with our employees and consultants and require all of our employees and key consultants who have access to our trade secrets, proprietary know-how, information or technology to enter into confidentiality agreements. We cannot guarantee that we have entered into such agreements with each party that may have or have had access to our trade secrets or proprietary technology and processes. To the extent we become involved in litigation that may require discovery of our trade secrets, know-how and other proprietary technology, we seek to secure protective orders from the court that bind the parties with access to the discovered information. Despite our best efforts, we cannot be certain that our trade secrets and other confidential proprietary information will not be disclosed or that competitors will not otherwise gain access to our trade secrets or independently develop substantially equivalent information and techniques. Any of these parties who may have access to our trade secrets, know-how and other proprietary technology may breach such agreements or orders. For example, a former employee of our COVID-19 vaccine collaborator, Pfizer, has reportedly misappropriated trade secrets on our COVID-19 vaccine. We may not be able to obtain adequate remedies for such breaches. Enforcing a claim that a party illegally disclosed or misappropriated a trade secret or know-how is difficult, expensive and time-consuming, and the outcome is unpredictable. In addition, some courts inside and outside the United States are less willing or unwilling to protect trade secrets and know-how. In addition, we cannot be certain that our proprietary technical information and related confidential documents that we have shared with our collaborators and/or have submitted to governmental agencies including regulatory agencies for evaluation and supervision of pharmaceutical products will be kept confidential. For example, certain documents relating to our COVID-19 vaccine were unlawfully accessed after a cyberattack on the EMA in December 2020. If any of our trade secrets or know-how were to be lawfully obtained or independently developed by a competitor or other third party, we would have no right to prevent them from using that technology or information to compete with us. If we are unable to prevent unauthorized material disclosure of our intellectual property to third parties, we may not be able to establish or maintain a competitive advantage in our market, which could materially adversely affect our business, operating results, financial condition and prospects.

1.6.13 We may be subject to claims that we have wrongfully hired an employee from a competitor, or that our employees, consultants or independent contractors have wrongfully used or disclosed confidential information of third parties, including alleged trade secrets of their former employers.

We have received confidential and proprietary information from third parties in the course of our research and other collaborations with others in the industry, academic institutions and other third parties. In addition, many of our employees, consultants and advisors are currently or were previously employed at universities or other biotechnology or pharmaceutical companies, including our competitors or potential competitors. Although we try to ensure that our employees, consultants, independent contractors and advisors do not use the confidential or proprietary information, trade secrets or know-how of others in their work for us, we may be subject to claims that we have inadvertently or otherwise used or disclosed confidential or proprietary information, trade secrets or know-how of these third parties, or that our employees, consultants, independent contractors or advisors have inadvertently or otherwise used or disclosed confidential information, trade secrets or know-how of such individual’s current or former employer. If we fail in defending any such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights or personnel. Litigation may be necessary to defend against these claims. Even if we are successful in defending against these claims, litigation could result in substantial cost and be a distraction to our management, technical personnel and other employees. Claims that we or our employees, consultants or advisors have misappropriated the confidential or proprietary information, trade secrets or know-how of third parties could have a material adverse effect on our business, financial condition, results of operations and prospects.

1.6.14 We may be subject to claims challenging the inventorship or ownership of our patents and other intellectual property.

In the future, we may be subject to claims that current or former employees, consultants, independent contractors, collaborators or other third parties have an interest in our patents or other intellectual property as an inventor or co-inventor. While it is our policy to require our employees, consultants, independent contractors, collaborators and other third parties who may be involved in the conception, development or reduction to practice of intellectual property to execute agreements assigning such intellectual property to us, we may be unsuccessful in executing such an agreement with each party who, in fact, conceives, develops or reduces to practice such intellectual property that we regard as our own. In addition, certain such agreements, even if successfully executed may distribute ownership or control of intellectual property rights between or among parties, for example based on subject matter, relationship to other intellectual property, and/or one or more aspects of development of the intellectual property; after the agreements are in place disputes may arise over such distribution principles or over proper treatment of particular developed intellectual property in accordance with them. Disagreements may be difficult or impossible to resolve, may be expensive to address, and may result in our failing to secure or maintain ownership in or control of intellectual property necessary or important to our business.

The assignment of intellectual property rights may not be self-executing, or the assignment agreements may be breached. For example, we may have inventorship or ownership disputes arise from conflicting obligations of employees, consultants, independent contractors, collaborators or other third parties who are involved in developing and commercializing our product(s) and/or product candidates. Litigation may be necessary to defend against these and other claims challenging inventorship or ownership. If we fail in defending any such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights, such as exclusive ownership of, or right to use, valuable intellectual property. Such an outcome could have a material adverse effect on our business, operating results and financial condition. Even if we are successful in defending against such claims, litigation could result in substantial costs and be a distraction to management, technical personnel and other employees.

Furthermore, the laws of some other countries do not protect intellectual property and other proprietary rights or establish ownership of inventions to the same extent or in the same manner as the U.S. laws. A majority of our employees work in Germany and are subject to German employment law. Ideas, developments, discoveries and inventions made by such employees are subject to the provisions of the German Act on Employees' Inventions (*Gesetz über Arbeitnehmererfindungen*), which regulates the ownership of, and compensation for, inventions made by employees. We face the risk that disputes can occur between us and our employees or former employees pertaining to alleged non-adherence to the provisions of this act that may be costly to defend and take up our management's, technical personnel's and other employees' time and efforts whether we prevail or fail in any such dispute. There is a risk that the compensation we provided to employees who assign patents to us may be deemed to be insufficient and we may be required under German law to increase the compensation due to such employees for the use of the patents. In those cases, where employees' rights have not been assigned to us, we may need to pay compensation for the use of those patents. If we are required to pay additional compensation or face other disputes under the German Act on Employees' Inventions (*Gesetz über Arbeitnehmererfindungen*), our business, results of operations and financial condition could be adversely affected.

1.6.15 We will not seek to protect our intellectual property rights in all jurisdictions throughout the world, and we may not be able to adequately enforce our intellectual property rights even in the jurisdictions where we seek protection.

Filing, prosecuting and defending patents on product(s) and/or product candidates in all countries throughout the world would be prohibitively expensive, and our intellectual property rights in some countries outside the United States, particularly those in Asia, including the People's Republic of China, or "**China**", can be less extensive than those in the United States. In addition, the laws of some countries do not protect intellectual property rights to the same extent as laws in Germany and the United States. Consequently, we may not be able to prevent third parties from practicing our inventions in all countries outside the United States to the same extent as within the United States, or from selling or importing products made using our inventions in and to the United States or other jurisdictions. Competitors may use our technologies in jurisdictions where we have not obtained patent protection to develop their own product candidates and further, may export otherwise infringing products to territories where we have patent protection, but enforcement is not as strong as that in the United States. These products may compete with our product(s) and/or product candidates, and our patents or other intellectual property rights may not be effective or sufficient to prevent them from competing.

Many companies have encountered significant problems in protecting and defending intellectual property rights in certain jurisdictions, particularly outside of Europe and the United States. The legal systems of certain countries, particularly certain developing countries, do not favor the enforcement of patents, trade secrets and other intellectual property protection, particularly those relating to biotechnology products, which could make it difficult for us to stop the infringement, misappropriation or other violation of our patents and other intellectual property or development, testing, marketing and commercialization of competing products in violation of our owned or in-licensed intellectual property and other proprietary rights generally. Proceedings to enforce our intellectual property rights in such jurisdictions could result in substantial costs and divert our efforts and attention from other aspects of our business, could put our patents at risk of being invalidated or interpreted narrowly and our patent applications at risk of not issuing and could provoke third parties to assert claims against us. We may not prevail in any lawsuits that we initiate and the damages or other remedies awarded, if any, may not be commercially meaningful. Accordingly, our efforts to enforce our intellectual property rights around the world may be inadequate to obtain a significant commercial advantage from the intellectual property that we develop or in-license. In particular, the validity, enforceability and scope of protection of intellectual property in China, where we derive net sales and maintain collaboration partnerships including licensing, are still evolving and historically, have not protected and may not protect in the future, intellectual property rights to the same extent as laws developed in Europe, including Germany, and the United States. Consequently, the time required to enforce our intellectual property rights in the legal regime of China may be lengthy and delay our recovery.

Many countries have compulsory licensing laws under which a patent owner may be compelled to grant licenses to third parties. In addition, many countries limit the enforceability of patents against government agencies or government contractors. In these countries, the patent owner may have limited remedies, which could materially diminish the value of such patent. If we or any of our licensors is forced to grant a license to third parties with respect to any patents relevant to our business, our competitive position may be impaired, and our business, financial condition, results of operations and prospects may be adversely affected.

If our trademarks and trade names are not adequately protected, we may not be able to build name recognition in our markets of interest and our business may be adversely affected.

Our registered or unregistered trademarks or trade names may be challenged, infringed, circumvented or declared generic or determined to be infringing on other marks. We may not be able to protect our rights to these trademarks and trade names, which we need to build name recognition among potential collaborators or customers in our markets of interest. At times, competitors may adopt trade names or trademarks similar to ours or collaborators may fail to use our trade names or trademarks appropriately or at all, thereby impeding our ability to build brand identity and possibly leading to market confusion. In addition, there could be potential trade name or trademark infringement claims brought by owners of other trademarks or trademarks that incorporate variations of our registered or unregistered trademarks or trade names. Over the long term, if we are unable to establish name recognition based on our trademarks and trade names, we may not be able to compete effectively and our business may be adversely affected. We may license our trademarks and trade names to third parties, such as distributors and collaborators. Though these license agreements may provide guidelines for how our trademarks and trade names may be used, a breach of these agreements or misuse or failure to use of our trademarks and trade names by our licensees may jeopardize our rights in or diminish the goodwill associated with our trademarks, and trade names. Our efforts to enforce or protect our proprietary rights related to trademarks, trade names, trade secrets, know-how, domain names, copyrights or other intellectual property may be ineffective and could result in substantial costs and diversion of resources and could adversely affect our business, financial condition, results of operations and prospects.

1.6.16 Intellectual property rights do not necessarily address all potential threats to our competitive advantage.

The degree of future protection afforded by our intellectual property rights is uncertain because intellectual property rights have limitations, and may not adequately protect our business or permit us to maintain our competitive advantage. For example:

- others may be able to make COVID-19 vaccines or therapies, and/or individualized cancer immunotherapies that are similar to our COVID-19 vaccine and/or any product candidates we may develop and commercialize or utilize similar technologies that are not covered by the claims of the patents that we now or may in the future own or have exclusively in-licensed;
- we, our co-owners or our licensors or future collaborators might not have been the first to make the inventions covered by the issued patents or pending patent applications that we own or have exclusively in-licensed;
- we, our co-owners or our licensors or future collaborators might not have been the first to file patent applications covering certain of our or their inventions;
- others may independently develop similar or alternative technologies or duplicate any of our technologies without infringing our owned or in-licensed intellectual property rights;
- it is possible that our pending patent applications or those that we may own or in-license in the future will not lead to issued patents;
- claims of issued patents that we own or have exclusively in-licensed may be held invalid or unenforceable, including as a result of legal challenges by our competitors;
- our competitors might conduct research, development, testing or commercialization activities in countries where we do not have patent rights and then use the information learned from such activities to develop competitive products for sale in our major commercial markets;
- we may not develop additional proprietary technologies that are patentable;
- the patents of others may have an adverse effect on our business; and
- we may choose not to file a patent in order to maintain certain trade secrets or know-how, and a third party may subsequently file a patent covering such intellectual property.

Should any of these events occur, they could have a material adverse effect on our business, financial condition, results of operations and prospects.

1.7 Risks Related to Government Regulation

1.7.1 The FDA, the EMA or other comparable regulatory authorities may disagree with our regulatory plan and we may fail to obtain regulatory approval of our product candidates.

If the results of our clinical trials are sufficiently compelling, we or our collaborators intend to discuss with the FDA and regulatory authorities in other countries the submission of a BLA or respective applications in other countries for our product candidates. However, we do not have any agreement or guidance from the FDA that our regulatory development plans will be sufficient for submission of a BLA for any of our product candidates. The FDA, the EMA or other regulatory agencies may grant accelerated approval for our product candidates and, as a condition for accelerated approval, the FDA, the EMA or other regulatory agencies may require a sponsor of a drug or biologic receiving accelerated approval to perform post-marketing studies to verify and describe the predicted effect on irreversible morbidity or mortality or other clinical endpoint, and the drug or biologic may be subject to withdrawal procedures by the FDA, the EMA or other regulatory agencies that are more accelerated than those available for regular approvals. In addition, the standard of care may change with the approval of new products in the same indications that we are studying. This may result in the FDA, the EMA or other regulatory agencies requesting additional studies to show that our product candidate is superior to the new products.

Our clinical trial results may also not support approval. In addition, our product candidates could fail to receive regulatory approval for many reasons, including the following:

- the FDA, the EMA or comparable regulatory authorities may disagree with the design or implementation of our clinical trials;
- we may be unable to demonstrate to the satisfaction of the FDA, the EMA or comparable regulatory authorities that our product candidates are safe and effective for any of their proposed indications;
- the results of clinical trials may not meet the level of statistical significance required by the FDA, the EMA or comparable regulatory authorities for approval, including due to the heterogeneity of patient populations;
- we may be unable to demonstrate that our product candidates' clinical and other benefits outweigh their safety risks;
- the FDA, the EMA or comparable regulatory authorities may disagree with our interpretation of data from preclinical studies or clinical trials;
- the data collected from clinical trials of our product candidates may not be sufficient to the satisfaction of the FDA, the EMA or comparable regulatory authorities to support the submission of a BLA or other comparable submissions or to obtain regulatory approval in the United States or elsewhere;
- the FDA, the EMA or comparable regulatory authorities will inspect our manufacturing facilities and may not approve our facilities or our manufacturing processes and controls;
- the approval policies or regulations of the FDA, the EMA or comparable regulatory authorities may significantly change in a manner rendering our clinical data insufficient for approval; and
- appointees of the new presidential administration in the United States may seek to change regulatory requirements for the approval of products or the approach to the review of product applications.

1.7.2 Our COVID-19 vaccine and any other product candidates for which we receive approval or emergency use authorization are subject to continuing regulatory oversight, and we will be subject to ongoing regulatory obligations and continued regulatory review, which may result in significant additional expense. We may be subject to penalties if we fail to comply with regulatory requirements or experience unanticipated problems with our products or product candidates.

Our COVID-19 vaccine and any other product candidates for which we receive approval or emergency use authorization are subject to continuing regulatory oversight, including the review of additional safety information, and the applicable regulatory authority may still impose significant restrictions on the indicated uses or marketing of our product or impose ongoing requirements for potentially costly post-approval studies or post-market surveillance. For example, the holder of an approved BLA is obligated to monitor and report adverse events and any failure of a product to meet the specifications in the BLA. The holder of an approved BLA must also submit new or supplemental applications and obtain FDA approval for certain changes to the approved product, product labeling or manufacturing process. Similar requirements apply to holders of (conditional) approvals in other countries. Advertising and promotional materials must comply with FDA rules and are subject to FDA review, in addition to other potentially applicable federal and state laws. In other countries, advertising and promotional material may be subject to similar rules.

If we fail to comply with applicable regulatory requirements following approval of any of our product candidates, a regulatory agency may:

- issue adverse public statements about our business or products;
- issue a warning letter asserting that we are in violation of the law;
- seek an injunction or impose civil or criminal penalties or monetary fines;
- suspend or withdraw regulatory approval or revoke a license;

- suspend any ongoing clinical studies;
- refuse to approve a pending BLA (or comparable approval) or supplements to a BLA (or comparable approval) submitted by us;
- seize product; or
- refuse to allow us to enter into supply contracts, including government contracts.

Any government investigation of alleged violations of law could require us to expend significant time and resources in response and could generate negative publicity. The occurrence of any event or penalty described above may inhibit our ability to commercialize any approved products and generate revenues.

If any of our products or product candidates cause undesirable side effects, it could delay or prevent their regulatory approval, limit their commercial potential, or result in significant negative consequences following any potential marketing approval. Products or product candidates we may develop may be associated with an adverse immune response or other serious adverse events, undesirable side effects or unexpected characteristics. In addition to serious adverse events or side effects caused by any of our products or product candidates, the administration process or related procedures also can cause undesirable side effects. If any such events occur, the clinical trials of any of our product candidates could be suspended or terminated.

If in the future we are unable to demonstrate that such adverse events were caused by factors other than our product candidate, the FDA, the EMA or other regulatory authorities could order us to cease further development of, or deny approval of, any of our product candidates for any or all targeted indications. Even if we are able to demonstrate that all future serious adverse events are not product-related, such occurrences could affect patient recruitment or the ability of enrolled trial participants to complete the trial. Moreover, if we elect, or are required, to delay, suspend or terminate any clinical trial of any of our product candidates, the commercial prospects of such product candidates, if approved, may be harmed and our ability to generate product sale revenues from any of these product candidates may be delayed or eliminated. Any of these occurrences may harm our ability to identify and develop product candidates, and may harm our business, financial condition, result of operations and prospects significantly.

Additionally, following regulatory approval of a product candidate, the FDA or other regulatory authority could require us to adopt a REMS or a risk management plan to ensure that the benefits of treatment with such product candidate outweigh the risks for each potential patient, which may include, among other things, a medication guide outlining the risks of the product for distribution to patients, a communication plan to health care practitioners, extensive patient monitoring, or distribution systems and processes that are highly controlled, restrictive, and more costly than what is typical for the industry.

Furthermore, if we or others later identify undesirable side effects caused by any product that we develop, several potentially significant negative consequences could result, including:

- regulatory authorities may suspend or withdraw approvals or revoke licenses of such product;
- regulatory authorities may require additional warnings on the label;
- regulatory authorities may make unfavorable statements about the safety of our products;
- we may be required to change the way a product is administered or conduct additional clinical trials;
- we could be sued and held liable for harm caused to patients and their children; and
- our reputation may suffer.

Any of these events could prevent us from achieving or maintaining market acceptance of any products we may identify and develop and could have a material adverse effect on our business, financial condition, results of operations and prospects.

Upon the successful approval of a product candidate, we will continue to face significant regulatory oversight of its manufacturing and distribution. Product manufacturers and their facilities are subject to payment of user fees and continual review and periodic inspections by the FDA and other regulatory authorities for compliance with GMP and adherence to commitments made in the BLA or comparable

approval. If we or a regulatory agency discovers previously unknown problems with a product such as adverse events of unanticipated severity or frequency, or problems with the facility where the product is manufactured, a regulatory agency may impose restrictions relative to that product or the manufacturing facility, including requiring recall or withdrawal of the product from the market or suspension of manufacturing.

1.7.3 We may not be able to develop or obtain approval for companion diagnostics required for commercialization of some of our product candidates.

Administration of some of our product candidates may require the use of immuno-assays and bioinformatic tools in which patients are screened for optimal target antigens of our product candidates. If safe and effective use of a biologic product depends on an in vitro diagnostic, then the FDA generally requires approval or clearance of the diagnostic, known as a companion diagnostic, concurrently with approval of the therapeutic product. To date, the FDA has generally required in vitro companion diagnostics intended to select the patients who will respond to cancer treatment to obtain a pre-market approval, or "**PMA**", for that diagnostic, which can take up to several years, simultaneously with approval of the biologic product. Similarly, in the European Union, an in vitro companion diagnostic may be placed on the market only if it conforms to certain "essential requirements" and bears the Conformité Européene Mark, or "**CE Mark**". The conformity assessment process to obtain the CE Mark can be lengthy and we may fail to demonstrate such conformity. Further, the applicable regulatory framework for in vitro diagnostics in the EU changed in May 2022 when a new EU regulation with stricter regulatory requirements for in vitro diagnostics became applicable.

For our individualized immunotherapy candidates, the FDA and comparable regulatory authorities outside of the United States may require the development and regulatory approval of a companion diagnostic assay as a condition to approval. The FDA may require PMA supplemental approvals for use of that same companion diagnostic as a condition of approval of additional individualized therapeutic candidates. We do not have experience or capabilities in developing or commercializing companion diagnostics and plan to rely in large part on third parties to perform these functions. Companion diagnostic assays are subject to regulation by the FDA and other comparable regulatory authorities in other jurisdictions as medical devices and require separate regulatory approval prior to the use of such diagnostic assays with our individualized therapeutic candidates. If we, or any third parties that we engage to assist us, are unable to successfully develop companion diagnostic assays for use with our individualized therapeutic candidates, or are unable to obtain regulatory approval or experience delays in either development or obtaining regulatory approval, we may be unable to identify patients with the specific profile targeted by our product candidates for enrollment in our clinical trials. Accordingly, further investment may be required to further develop or obtain the required regulatory approval for the relevant companion diagnostic assay, which would delay or substantially impact our ability to conduct additional clinical trials or obtain regulatory approval.

1.7.4 Because we are developing some of our product candidates for the treatment of diseases in which there is little clinical experience and, in some cases, using new endpoints or methodologies, the FDA, the EMA or other regulatory authorities may not consider the endpoints of our clinical trials to provide clinically meaningful results.

There may not be pharmacologic therapies approved to treat the underlying causes of many diseases that we may address in the future. For instance, we and our collaborators are applying our technology to develop therapeutics in indications such as certain rare diseases, including some for which no or few clinical trials have been attempted. As a result, any future design and conduct of clinical trials of product candidates for the treatment of certain rare diseases may take longer, be more costly, or be less effective as part of the novelty of development in these diseases. Even if we decide to conduct clinical trials and the FDA does find our success criteria to be sufficiently validated and clinically meaningful, we may not achieve the pre-specified endpoint to a degree of statistical significance in any pivotal or other clinical trials we or our collaborators may conduct for our programs. Further, even if we do achieve the pre-specified criteria, our trials may produce results that are unpredictable or inconsistent with the results of the more traditional efficacy endpoints in the trial. The FDA also could give overriding weight to other efficacy endpoints over a primary endpoint, even if we achieve statistically significant results on that endpoint, if we do not do so on our secondary efficacy endpoints. The FDA also weighs the benefits of a product against its risks and the FDA may view the efficacy results in the context of safety as not being supportive of licensure. Other regulatory authorities in Europe and other jurisdictions may make similar findings with respect to these endpoints.

1.7.5 We may not be able to file INDs with the FDA, clinical trial applications with the competent authorities of the member states of the European Union or similar applications with other comparable regulatory authorities to commence additional clinical trials on the timelines we expect, and even if we are able to, one or more of these regulatory authorities may not permit us to proceed.

The timing of filing on our product candidates is dependent on further preclinical, clinical and manufacturing success. We cannot be sure that submission of an IND or IND amendment with the FDA, a clinical trial application with the regulatory authorities of the EU member states or similar application with other comparable regulatory authorities will result in the FDA, the regulatory authorities of the EU member states or any comparable regulatory authority allowing testing and clinical trials to begin, or that, once begun, issues will not arise that result in the suspension or termination of such clinical trials. Additionally, even if such regulatory authorities agree with the design and implementation of the clinical trials set forth in an IND, clinical trial application or similar applications, we cannot guarantee that such regulatory authorities will not change their requirements in the future.

1.7.6 We may seek Orphan Drug Designation for some or all of our product candidates across various indications, but we may be unable to obtain such designations or to maintain the benefits associated with Orphan Drug Designation, including market exclusivity, which may cause our revenues, if any, to be reduced.

Our strategy includes filing for "Orphan Drug Designation" where available for our product candidates. Under the U.S. Orphan Drug Act, the FDA may grant Orphan Drug Designation to a drug or biologic intended to treat a rare disease or condition, which is defined as one occurring in a patient population of fewer than 200,000 in the United States, or a patient population of 200,000 or greater in the United States where there is no reasonable expectation that the cost of developing the drug or biologic will be recovered from sales in the United States. In the United States, Orphan Drug Designation entitles a party to financial incentives, such as opportunities for grant funding toward clinical trial costs, tax advantages, and user-fee waivers. In addition, if a product that has Orphan Drug Designation subsequently receives the first FDA approval for the disease for which it has such designation, the product is entitled to orphan drug exclusivity, which means that the FDA may not approve any other applications, including a full new drug application or a BLA, to market the same drug or biologic for the same indication for seven years, except in limited circumstances, such as a showing of clinical superiority to the product with orphan drug exclusivity or where the original manufacturer is unable to assure sufficient product quantity. Similar rules apply in the European Union with respect to drugs or biologics designated as orphan medicinal products.

In addition, exclusive marketing rights in the United States may be limited if we seek approval for an indication broader than the orphan-designated indication or may be lost if the FDA later determines that the request for designation was materially defective. Further, even if we obtain orphan drug exclusivity for a product, that exclusivity may not protect the product effectively from competition because different drugs with different active moieties may receive and be approved for the same condition, and only the first applicant to receive approval will receive the benefits of marketing exclusivity. Even after an orphan-designated product is approved, the FDA can subsequently approve a later drug with the same active moiety for the same condition if the FDA concludes that the later drug is clinically superior if it is shown to be safer, more effective, or makes a major contribution to patient care. Similar considerations apply in the European Union with respect to drugs or biologics designated as orphan medicinal products. Orphan Drug Designation neither shortens the development time or regulatory review time of a drug, nor gives the drug any advantage in the regulatory review or approval process. In addition, while we may seek Orphan Drug Designation for our product candidates, we may never receive such designations.

1.7.7 We may seek Breakthrough Therapy or Fast Track designation for one or more of our product candidates, but we may not receive such designations. Even if we do, it may not lead to a faster development or regulatory review or approval process, and it may not increase the likelihood that such product candidates will receive marketing approval.

We may seek a "Breakthrough Therapy Designation" in the United States for one or more of our product candidates. A breakthrough therapy is defined as a drug that is intended, alone or in combination with one or more other drugs, to treat a serious or life-threatening disease or condition, and preliminary clinical evidence indicates that the drug may demonstrate substantial improvement over existing therapies on one or more clinically significant endpoints, such as substantial treatment effects observed early in clinical development. For drugs that have been designated as breakthrough therapies, interaction and communication between the FDA and the sponsor of the trial can help to identify the most efficient path for clinical development while minimizing the number of patients placed in ineffective control regimens. Drugs designated as breakthrough therapies by the FDA are also eligible for priority review if supported by clinical data at the time of the submission of the BLA.

Designation as a breakthrough therapy is at the discretion of the FDA. Accordingly, even if we believe that one of our product candidates meets the criteria for designation as a breakthrough therapy, the FDA may disagree and instead determine not to make such designation. In any event, the receipt of a Breakthrough Therapy Designation for a drug may not result in a faster development process, review or approval compared to drugs considered for approval under conventional FDA procedures and it would not assure ultimate approval by the FDA. In addition, even if one or more of our product candidates qualify as breakthrough therapies, the FDA may later decide that the product candidate no longer meets the conditions for qualification or it may decide that the time period for FDA review or approval will not be shortened.

We may also seek "Fast Track Designation" in the United States for some of our product candidates. If a therapy is intended for the treatment of a serious or life-threatening condition and the therapy demonstrates the potential to address significant unmet medical needs for this condition, the drug sponsor may apply for Fast Track Designation. The FDA has broad discretion whether or not to grant this designation, and even if we believe a particular product candidate is eligible for this designation, we cannot be sure that the FDA would decide to grant it. Even if we do receive Fast Track Designation, we may not experience a faster development process, review or approval compared to conventional FDA procedures. The FDA may withdraw Fast Track Designation if it believes that the designation is no longer supported by data from our clinical development program. Fast Track Designation alone does not guarantee qualification for the FDA's priority review procedures.

1.7.8 We expect some of the product candidates we develop will be regulated as biologics in the United States and therefore they may be subject to competition from biosimilars approved through an abbreviated regulatory pathway.

The ACA includes a subtitle called the Biologics Price Competition and Innovation Act of 2009, or the "**BPCIA**", which created an abbreviated approval pathway for biological products that are biosimilar to or interchangeable with an FDA-approved reference biological product. Under the BPCIA, an application for a biosimilar product may not be submitted to the FDA until four years following the date that the reference product was first approved by the FDA. In addition, the approval of a biosimilar product may not be made effective by the FDA until twelve years from the date on which the reference product was first approved.

During this twelve-year period of exclusivity, another company may still market a competing version of the reference product if the FDA approves a BLA for the competing product containing the sponsor's own preclinical data and data from adequate and well-controlled clinical trials to demonstrate the safety, purity and potency of the other company's product. The law is complex and is still being interpreted and implemented by the FDA. As a result, its ultimate impact, implementation and meaning are subject to uncertainty.

We believe that any of our product candidates approved as a biological product under a BLA should qualify for a twelve-year period of exclusivity. However, there is a risk that this exclusivity could be shortened due to congressional action or otherwise, or that the FDA will not consider our product candidates to be reference products for competing products, potentially creating the opportunity for generic competition sooner than anticipated. Other aspects of the BPCIA, some of which may impact the BPCIA exclusivity provisions, have also been the subject of recent litigation. Moreover, the extent to which a biosimilar, once approved, will be substituted for any one of our reference products in a way that is similar to traditional generic substitution for non-biological products is not yet clear, and will depend on a number of marketplace and regulatory factors that are still developing.

1.7.9 Some of our product candidates are classified as gene therapies by the FDA and the EMA, and the FDA has indicated that our product candidates will be reviewed within its Center for Biologics Evaluation and Research. Even though our mRNA product candidates are designed to have a different mechanism of action from gene therapies, the association of our product candidates with gene therapies could result in increased regulatory burdens, impair the reputation of our product candidates, or negatively impact our platform or our business.

There have been few approvals of gene therapy products in the United States and other jurisdictions, and there have been well-reported significant adverse events associated with their testing and use. Gene therapy products have the effect of introducing new DNA and potentially irreversibly changing the DNA in a cell. In contrast, mRNA is highly unlikely to localize to the nucleus, be reverse transcribed or integrated into the genome. Consequently, we expect that our products or product candidates will have a different potential side effect profile from gene therapies because they lack risks associated with altering cell DNA irreversibly. Further, we may avail ourselves of ways of mitigating side effects in developing our products and product candidates to address safety concerns that are not available to other products or product candidates classified as gene therapies, such as lowering the dose of our products or product candidates during repeat dosing or stopping treatment to potentially ameliorate undesirable side effects.

Regulatory requirements governing gene and cell therapy products have evolved and may continue to change in the future, and the implications for mRNA-based therapies is unknown. For example, the FDA has established the Office of Tissues and Advanced Therapies within Center for Biologics Evaluation and Research, or "**CBER**". to consolidate the review of gene therapy and related products, and convenes the Cellular, Tissue and Gene Therapies Advisory Committee to advise CBER on its review. In the European Union, mRNA has been characterized as a gene therapy medicinal product. In certain countries, mRNA therapies have not yet been classified or any such classification is not known to us. Notwithstanding the differences between our mRNA product candidates and gene therapies, the classification of some of our mRNA product candidates as gene therapies in the United States, the European Union and potentially other counties could adversely impact our ability to develop our product candidates, and could negatively impact our platform and our business. For instance, a potential future clinical hold on gene therapy products across the field due to risks associated with altering cell DNA irreversibly could apply to our mRNA product candidates irrespective of the mechanistic differences between gene therapies and mRNA.

Adverse events reported with respect to gene therapies or genome editing therapies could adversely impact one or more of our programs. Although our mRNA product candidates are designed not to make any permanent changes to cell DNA, regulatory agencies or others could believe that adverse effects of gene therapy products caused by introducing new DNA and irreversibly changing the DNA in a cell could also be a risk for our approved mRNA products or investigational therapies, and as a result may delay one or more of our trials or impose additional testing for long-term side effects. Any new requirements and guidelines promulgated by regulatory review agencies may have a negative effect on our business by lengthening the regulatory review process, requiring us to perform additional or larger studies, or increasing our development costs, any of which could lead to changes in regulatory positions and interpretations, delay or prevent advancement or approval and commercialization of our product candidates or lead to significant post-approval studies, limitations or restrictions. As we advance our product candidates, we will be required to consult with these regulatory agencies and advisory committees and comply with applicable requirements and guidelines. If we fail to do so, we may be required to delay or discontinue development of some or all of our product candidates.

1.7.10 The regulatory landscape that will govern our product candidates is uncertain. Regulations relating to more established gene therapy and cell therapy products are still developing, and changes in regulatory requirements could result in delays or discontinuation of development of our product candidates or unexpected costs in obtaining regulatory approval.

The regulatory requirements to which our product candidates will be subject are not entirely clear. Even with respect to more established products that fit into the categories of gene therapies or cell therapies, the regulatory landscape is still developing. For example, regulatory requirements governing gene therapy products and cell therapy products have changed frequently and may continue to change in the future. Moreover, there is substantial, and sometimes uncoordinated, overlap in those responsible for regulation of existing gene therapy products and cell therapy products. Although the FDA decides whether individual gene therapy protocols may proceed, the review process and determinations of other reviewing bodies can impede or delay the initiation of a clinical study, even if the FDA has reviewed the study and approved its initiation. Conversely, the FDA can place an IND application on clinical hold even if such other entities have provided a favorable review. Furthermore, gene therapy clinical trials are also subject to review and oversight by an institutional biosafety committee, a local institutional committee that reviews and oversees basic and clinical research conducted at the institution participating in the clinical trial. In addition, adverse developments in clinical trials of gene therapy products conducted by others may cause the FDA or other regulatory bodies to change the requirements for approval of any of our product candidates.

Complex regulatory environments exist in other jurisdictions in which we might consider seeking regulatory approvals for our product candidates, further complicating the regulatory landscape. For example, in the European Union, a special committee called the Committee for Advanced Therapies was established within the EMA in accordance with Regulation (EC) No 1394/2007 on advanced-therapy medicinal products, or "**ATMPs**", to assess the quality, safety and efficacy of ATMPs, and to follow scientific developments in the field. ATMPs include gene therapy products as well as somatic cell therapy products and tissue engineered products.

These various regulatory review committees and advisory groups and new or revised guidelines that they promulgate from time to time may lengthen the regulatory review process, require us to perform additional studies, increase our development costs, lead to changes in regulatory positions and interpretations, delay or prevent approval and commercialization of our product candidates or lead to significant post-approval limitations or restrictions. As the regulatory landscape for our chimeric antigen receptor, or "**CAR-T**", -cell immunotherapy product candidates is new, we may face even more cumbersome and complex regulations than those emerging for gene therapy products and cell therapy products. Furthermore, the regulatory pathway for an individualized therapy, such as our Individualized Neoantigen Specific Immunotherapy, or "**iNeST**", an mRNA-based immunotherapy where each patient receives a different combination of mRNAs, remains undetermined. The number and design of the clinical and preclinical studies required for the approval of these types of medicines have not been established, may be different from those required for advanced medicinal therapy products or therapies that are not individualized or may require safety testing like gene therapy products. Moreover, even if our product candidates obtain required regulatory approvals, such approvals may later be withdrawn as a result of changes in regulations or the interpretation of regulations by applicable regulatory agencies.

Delay or failure to obtain, or unexpected costs in obtaining, the regulatory approval necessary to bring a potential product to market could decrease our ability to generate sufficient product sales revenues to maintain our business.

1.7.11 We may be unable to obtain regulatory approval for our product candidates under applicable international regulatory requirements.

The denial or delay of such approval would delay commercialization of our product candidates and adversely impact our potential to generate revenues, our business and our results of operations.

Approval by the FDA in the United States, if obtained, does not ensure approval by regulatory authorities in other countries or jurisdictions. In order to market our products or product candidates in any other jurisdiction, we must establish and comply with numerous and varying regulatory requirements on a jurisdiction-by-jurisdiction basis regarding safety and efficacy. In addition, clinical trials conducted in one country may not be accepted by regulatory authorities in other countries, and regulatory approval in one country does not guarantee regulatory approval in any other country. Approval processes vary among countries and can involve additional product testing and validation and additional administrative review periods.

Seeking regulatory approval in other jurisdictions could result in difficulties and costs for us and require additional preclinical studies or clinical trials which could be costly and time-consuming. Regulatory requirements can vary widely from country to country and could delay or prevent the introduction of our products in those countries. The European Union and other jurisdictions' regulatory approval processes involve all of the risks associated with the FDA approval. If we fail to comply with regulatory requirements in certain markets or to obtain and maintain required approvals, or if regulatory approvals in certain markets are delayed, our target market will be reduced and our ability to realize the full market potential of our products will be unrealized.

Certain jurisdictions may have submission requirements for drug clinical trial and marketing applications that require us or our partners to submit substantial detailed materials related to non-clinical and clinical development and manufacturing and quality control to drug regulators or testing laboratories. This can include confidential standard operating procedures or executed batch records for the production of biological products or other records or documents that set forth detailed information about the manufacturing process. If these materials are disclosed, lost, or diverted to third parties or competitors during the application preparation process, this could negatively affect our ability to protect our intellectual property.

Our partners in different countries are subject to local regulatory requirements on the manufacturing and distribution of drugs and the implementation of clinical and non-clinical research. These include but are not limited to good manufacturing, distribution, laboratory, clinical practice, and pharmacovigilance rules. If these companies do not comply with applicable standards, they could become the subjects of investigations and enforcement, including orders to cease the activities pending remediation that is acceptable to the government. Such an order or other similar enforcement could interfere with our clinical development activities both in that jurisdiction and others, if it impacts supply or the quality and transfer of data.

1.7.12 A third-party investigational product candidate used in combination with our product candidates may be unable to obtain regulatory approval, which may delay commercialization of our product candidates.

We are developing several of our product candidates to be used in combination with our and third-party product candidates. Even if any product candidate we develop were to receive marketing approval or be commercialized for use in combination with other existing products, we would continue to be subject to the risks that the FDA, the EMA or comparable regulatory authorities in other jurisdictions could revoke approval of the product used in combination with our product or that safety, efficacy, manufacturing or supply issues could arise with any of those existing products. If the products or product candidates we use in combination with our product candidates are replaced as the standard of care for the indications we choose for any of our product candidates, the FDA, the EMA or comparable regulatory authorities in other jurisdictions may require us to conduct additional clinical trials. The occurrence of any of these risks could result in our own products, if approved, being removed from the market or being less successful commercially. We also plan to evaluate current and future product candidates in combination with one or more product candidates that have not yet been approved for marketing by the FDA, the EMA or comparable regulatory authorities in other jurisdictions. We will not be able to market any product candidate we develop in combination with an unapproved product candidate if that unapproved product candidate does not ultimately obtain marketing approval. In addition, unapproved product candidates face the same risks described with respect to our product candidates currently in development and clinical trials, including the potential for serious adverse effects, delay in their clinical trials and lack of FDA, EMA or comparable regulatory authority approval.

If the FDA, the EMA or comparable regulatory authorities in other jurisdictions do not approve these other product candidates or revoke their approval of, or if safety, efficacy, manufacturing or supply issues arise with, the products or product candidates we choose to evaluate in combination with any product candidate we develop, we may be unable to obtain approval of or market any product candidate we develop.

1.7.13 Governmental investigations and inquiries with respect to our COVID-19 vaccine and any other product candidates for which we receive approval or emergency use authorization may adversely affect our business, financial condition and results of operations.

In April 2025, we, along with several other pharmaceutical companies, received a letter from the Chairman of the Permanent Subcommittee on Investigations of the U.S. Senate Homeland Security and Governmental Affairs Committee, that requested certain information and documents relating to the respective COVID-19 vaccines we developed (in our case, *Comirnaty*).This and other governmental investigations or inquiries in which we may become involved may result in additional claims and lawsuits being brought against us by governmental agencies or private parties. It is not possible at this time to predict either the outcome or the potential financial impact of the congressional investigation mentioned above or any further investigations or inquiries of us that may result from such investigation. It is also not possible at this time to predict the additional expenses related to such investigation, which may be significant. The initiation of any additional investigation relating to us, the costs and expenses associated therewith, or any assertion, claim or finding of wrongdoing by us, could:

- adversely affect our business, financial condition and results of operations;
- result in reputational harm and reduced market acceptance and demand for our products;
- harm our ability and our commercial partners' ability to market our products;
- harm our ability to develop our product candidates;
- cause us to incur significant liabilities, costs and expenses; and
- cause our senior management to be distracted from execution of our business strategy.

Furthermore, the pending congressional investigation could negatively affect our ability to raise capital and impair our ability to engage in strategic transactions.

1.7.14 We may be subject, directly or indirectly, to federal and state healthcare fraud and abuse laws, false claims laws, and other healthcare laws. If we are unable to comply, or have not fully complied, with such laws, we could face substantial penalties.

We may be subject to additional healthcare regulation and enforcement by the U.S. federal government and by authorities in the United States, the European Union and other jurisdictions in which we conduct our business. Our operations may be directly, or indirectly through our prescribers, customers and purchasers, subject to various federal and state fraud and abuse laws and regulations, including, without limitation, the United States' federal Health Care Program Anti-Kickback Statute, the United States' federal civil and criminal False Claims Act, and the Physician Payments Sunshine Act and regulations. Many states of the United States and other jurisdictions have similar laws and regulations, some of which may be broader in scope. These laws will impact, among other things, our proposed sales, marketing and educational programs. In addition, we may be subject to patient privacy laws enacted by both the federal government and the states in which we conduct our business. The laws that will affect our operations include, but are not limited to the following:

- the U.S. federal Anti-Kickback Statute, which prohibits, among other things, persons or entities from knowingly and willfully soliciting, receiving, offering or paying any remuneration (including any kickback, bribe or rebate), directly or indirectly, overtly or covertly, in cash or in kind, in return for the purchase, recommendation, leasing or furnishing of an item or service reimbursable under a federal healthcare program, such as the Medicare and Medicaid programs. This statute has been interpreted to apply to arrangements between pharmaceutical manufacturers on the one hand, and prescribers, purchasers, and formulary managers on the other. The ACA amends the intent requirement of the federal Anti-Kickback Statute to provide that a person or entity no longer needs to have actual knowledge of this statute or specific intent to violate it;
- the U.S. federal civil and criminal false claims laws and civil monetary penalty laws, which prohibit, among other things, individuals or entities from knowingly presenting, or causing to be presented, false or fraudulent claims for payment or approval from Medicare, Medicaid or other government payors. The ACA provides, and recent government cases against pharmaceutical and medical device manufacturers support, the view that federal Anti-Kickback Statute violations and certain marketing practices, including off-label promotion, may implicate the False Claims Act;

- the U.S. federal Health Insurance Portability and Accountability Act of 1996, or "**HIPAA**", which created new federal criminal statutes that prohibit a person from knowingly and willfully executing a scheme or making false or fraudulent statements to defraud any healthcare benefit program, regardless of the payor (e.g., public or private);
- HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act and their implementing regulations, which imposes certain requirements relating to the privacy, security and transmission of individually identifiable health information without appropriate authorization by entities subject to the rule, such as health plans, health care clearinghouses and health care providers;
- the U.S. Federal Food, Drug, and Cosmetic Act, which prohibits, among other things, the adulteration or misbranding of drugs, biologics and medical devices;
- the U.S. Public Health Service Act, which prohibits, among other things, the introduction into interstate commerce of a biological product unless a biologics license is in effect for that product;
- federal transparency laws, including the federal Physician Payment Sunshine Act, which require disclosure of payments and other transfers of value provided to physicians and teaching hospitals, and ownership and investment interests held by physicians and other healthcare providers and their immediate family members and applicable group purchasing organizations;
- U.S. state law equivalents of each of the above federal laws, state laws that require drug manufacturers to report information related to payments and other transfers of value to physicians and other healthcare providers or marketing expenditures, and state laws governing the privacy and security of health information in certain circumstances which are also applicable to us, and many of them differ from each other in significant ways and may not have the same effect, thus complicating compliance efforts in certain circumstances;
- the U.S. Foreign Corrupt Practices Act of 1977, as amended, which prohibits, among other things, U.S. companies and their employees and agents, as well as non-U.S. companies that are registered with the SEC, from authorizing, promising, offering or providing, directly or indirectly, corrupt or improper payments or anything else of value to foreign government officials, employees of public international organizations and foreign government owned or affiliated entities, candidates for foreign political office, and foreign political parties or officials thereof; and
- similar statutes, healthcare laws and regulations in the European Union and other jurisdictions, including reporting requirements detailing interactions with and payments to healthcare providers.

Due to the breadth of these laws and the narrowness of the statutory exceptions and safe harbors available, it is possible that some of our business activities could be subject to challenge under one or more of such laws. If our operations are found to be in violation of any of the laws described above or any other government regulations that apply to us, we may be subject to penalties, including civil and criminal penalties, damages, fines, exclusion from participation in government health care programs, such as Medicare and Medicaid, imprisonment, and the curtailment or restructuring of our operations, any of which could adversely affect our ability to operate our business and our results of operations.

The provision of benefits or advantages to physicians to induce or encourage the prescription, recommendation, endorsement, purchase, supply, order or use of medicinal products is prohibited in the European Union. The provision of benefits or advantages to physicians is also governed by the national anti-bribery laws of European Union member states and other jurisdictions, such as the U.K. Bribery Act 2010. Infringement of these laws could result in substantial fines and imprisonment.

Payments made to physicians in certain EU member states must be publicly disclosed. Moreover, agreements with physicians often must be the subject of prior notification and approval by the physician's employer, his or her competent professional organization or the regulatory authorities of the individual EU member states. These requirements are provided in the national laws, industry codes, or professional codes of conduct, applicable in the EU member states. Failure to comply with these requirements could result in reputational risk, public reprimands, administrative penalties, fines or imprisonment.

1.7.15 We are subject to certain anti-corruption, anti-money laundering, export control, sanctions, and other trade laws and regulations. We can face serious consequences for violations.

Among other matters, anti-corruption, anti-money laundering, export control, sanctions, and other trade laws and regulations, which are collectively referred to as "trade laws", prohibit companies and their employees, agents, CROs, legal counsel, accountants, consultants, contractors and other collaborators from authorizing, promising, offering, providing, soliciting, or receiving directly or indirectly, corrupt or improper payments or anything else of value to or from recipients in the public or private sector. Violations of trade laws can result in substantial criminal fines and civil penalties, imprisonment, the loss of trade privileges, debarment, tax reassessments, breach of contract and fraud litigation, reputational harm, and other consequences. We have direct or indirect interactions with officials and employees of government agencies or government-affiliated hospitals, universities and other organizations. We plan to engage third parties for clinical trials and/or to obtain necessary permits, licenses, intellectual property (including patents) and other regulatory approvals, and we can be held liable for the corrupt or other illegal activities of our personnel, agents or collaborators, even if we do not explicitly authorize or have prior knowledge of such activities.

1.7.16 We are subject to stringent privacy laws, information security policies and contractual obligations governing the use, processing, and cross-border transfer of personal information and our data privacy and security practices.

We receive, generate and store significant and increasing volumes of sensitive information, such as employee, personal and patient data.

We are subject to a variety of local, state, national and international laws, directives and regulations that apply to the collection, use, storage, retention, protection, disclosure, transfer and other processing of personal data, collectively referred to as "data processing", in the different jurisdictions in which we operate, including comprehensive regulatory systems in the United States and Europe. Legal requirements relating to data processing continue to evolve and may result in ever-increasing public scrutiny and escalating levels of enforcement, sanctions and increased costs of compliance.

Compliance with U.S. and international data protection laws and regulations could cause us to incur substantial costs or require us to change our business practices and compliance procedures in a manner adverse to our business. Moreover, complying with these various laws could require us to take on more onerous obligations in our contracts, restrict our ability to collect, use and disclose data, or in some cases, impact our ability to operate in certain jurisdictions. Failure to comply with U.S. and international data protection laws and regulations could result in government enforcement actions (which could include civil or criminal penalties), private litigation and/or adverse publicity and could negatively affect our operating results and business. Claims that we have violated individuals' privacy rights, failed to comply with data protection laws, or breached our contractual obligations, even if we are not found liable, could be expensive and time consuming to defend, could result in adverse publicity and could have a material adverse effect on our business, financial condition and results of operations.

The collection and use of personal data in the European Union had previously been governed by the provisions of the EU Data Protection Directive, which EU member states were required to implement. While the Data Protection Directive did not apply to organizations based outside the European Union, the GDPR has expanded its reach to include any business, regardless of its location, that targets goods or services to residents in the European Union or that "monitors" their behavior in the European Union. The GDPR imposes strict requirements on controllers and processors of personal data, including special protections for "sensitive information" which includes health and genetic information of patients residing in the European Union. The GDPR also imposes strict rules on the transfer of personal data out of the European Union to the United States and other countries. In addition, the GDPR provides that EU member states may make their own further laws and regulations limiting the processing of personal data, including genetic, biometric or health data.

Since we are located in the European Union, we are subject to the GDPR. Additionally, as the GDPR applies extraterritorially, we are also subject to the GDPR even where our data processing activities occur outside of the European Union if such activities involve the personal data of individuals located in the European Union and the above-mentioned applicable law triggers apply. GDPR regulations have imposed additional responsibility and liability in relation to the personal data that we process and we may be required to put in place additional mechanisms to ensure compliance with the new data protection rules. This may be onerous and may interrupt or delay our development activities, and adversely affect our business, financial condition, results of operations and prospects.

Other jurisdictions outside the European Union are similarly introducing or enhancing privacy and data security laws, rules and regulations, which could increase our compliance costs and the risks associated with non-compliance. In particular, in China, where some of our clinical data are originated, the cybersecurity, data privacy, data protection, or other data-related laws and regulations, including the Human Genetic Resources Regulation (which regulates transfer human genetic data generated in clinical research to foreign or foreign controlled parties), may require approvals or filings prior to transferring those data to foreign-owned entities or overseas, and these regimes are continually evolving, meaning their interpretation and application may be uncertain. In the United States, we may be subject to restrictions and requirements under the Department of Justice's Final Rule issued on December 27, 2024 implementing the Executive Order on Preventing Access to Americans' Bulk Sensitive Personal Data and United States Government-Related Data by Countries of Concern, signed on February 28, 2024. Practices regarding the collection, use, storage, transmission and security of personal information by companies have also been subject to increasing regulatory focus. As such, we cannot assure you that we will be compliant with such new regulations in all respects, and we may be ordered to rectify and terminate any actions that are deemed illegal by the government authorities and become subject to fines and other government sanctions, which may materially and adversely affect our business, financial condition, and results of operations. In addition, the uncertainties regarding further interpretation and implementation of these laws and regulations may adversely affect the secure storage of documented work as well as the cross-border transfer of important data and personal information originated from our clinical trial activities, which are critical to the development of our pipelines.

We cannot guarantee that we are, or will be, in compliance with all applicable international regulations as they are enforced now or as they evolve. For example, our privacy policies may be insufficient to protect any personal information we collect, or may not comply with applicable laws, in which case we may be subject to regulatory enforcement actions, lawsuits or reputational damage, all of which may adversely affect our business. There is significant uncertainty related to the manner in which data protection authorities will seek to enforce compliance with the GDPR and other international data protection regulations, especially with regard to clinical trial activities. For example, it is not clear if the authorities will conduct random audits of companies doing business in the European Union, or if the authorities will wait for complaints to be filed by individuals who claim their rights have been violated, as enforcement practices vary from country to country. Enforcement uncertainty and the costs associated with ensuring GDPR compliance may be onerous and adversely affect our business, financial condition, results of operations and prospects. If we fail to comply with the GDPR and the applicable national data protection laws of the EU member states, or if regulators assert we have failed to comply with these laws, it may lead to regulatory enforcement actions, which can result in monetary penalties of up to €20,000,000 or up to 4% of the total worldwide annual turnover of the preceding financial year, whichever is higher, and other administrative penalties. If any of these events were to occur, our business and financial results could be significantly disrupted and adversely affected.

Although we take measures to protect sensitive data from unauthorized access, use or disclosure, our information technology and infrastructure may be vulnerable to attacks by hackers or viruses or breached due to employee error, malfeasance or other malicious or inadvertent disruptions. Any such breach or interruption could compromise our networks and the information stored there could be accessed by unauthorized parties, manipulated, publicly disclosed, lost or stolen. Any such access, breach or other loss of information could result in legal claims or proceedings, and liability under federal or state laws that protect the privacy of personal information, as well as regulatory penalties. In many jurisdictions, there are legal requirements to provide notice of breaches to affected individuals and/or regulators in certain circumstances. Such a notice could harm our reputation and our ability to compete. Regulators may also have the discretion to impose penalties without attempting to resolve violations through informal means. Although we have implemented security measures to prevent unauthorized access to patient data, such data is currently accessible through multiple channels, and there is no guarantee we can protect our data from breach. Unauthorized access, loss or dissemination could also damage our reputation or disrupt our operations, including our ability to conduct our analyses, deliver test results, process claims and appeals, provide customer assistance, conduct research and development activities, collect, process and prepare company financial information, provide information about our tests and other patient and physician education and outreach efforts through our website, and manage the administrative aspects of our business.

1.7.17 If we or our third-party suppliers fail to comply with environmental, health and safety laws and regulations, we could become subject to fines or penalties or incur costs that could harm our business.

We are subject to numerous environmental, health and safety laws and regulations, including those governing laboratory procedures and the handling, use, storage, treatment and disposal of hazardous materials and wastes. Our operations involve the use of hazardous and flammable materials, including chemicals and biological materials. Our operations also may produce hazardous waste products. We generally anticipate contracting with third parties for the disposal of these materials and wastes. We will not be able to eliminate the risk of contamination or injury from these materials. In the event of contamination or injury resulting from any use by us of hazardous materials, we could be held liable for any resulting damages, and any liability could exceed our resources. We also could incur significant costs associated with civil or criminal fines and penalties for failure to comply with such laws and regulations.

Although we maintain workers' compensation insurance to cover us for costs and expenses we may incur due to injuries to our employees resulting from the use of hazardous materials, this insurance may not provide adequate coverage against potential liabilities.

In addition, we may incur substantial costs in order to comply with current or future environmental, health and safety laws and regulations. These current or future laws and regulations may impair our research, development or production efforts. Our failure to comply with these laws and regulations also may result in substantial fines, penalties or other sanctions.

1.7.18 Our business operations and current and future relationships with investigators, healthcare professionals, consultants, third-party payors, patient organizations and customers will be subject to applicable healthcare regulatory laws, which could expose us to penalties.

Our business operations and current and future arrangements with investigators, healthcare professionals, consultants, third-party payors, patient organizations and customers, may expose us to broadly applicable fraud and abuse and other healthcare laws and regulations. These laws may constrain the business or financial arrangements and relationships through which we conduct our operations, including how we research, market, sell and distribute our product candidates, if approved.

Ensuring that our internal operations and future business arrangements with third parties comply with applicable healthcare laws and regulations will involve substantial costs. It is possible that governmental authorities will conclude that our business practices do not comply with current or future statutes, regulations, agency guidance or case law involving applicable fraud and abuse or other healthcare laws and regulations.

If any of the physicians or other providers or entities with whom we expect to do business are found to not be in compliance with applicable laws, they may be subject to criminal, civil or administrative sanctions, including exclusions from government-funded healthcare programs and imprisonment, which could affect our ability to operate our business. Further, defending against any such actions can be costly and time-consuming and may require significant personnel resources. Therefore, even if we are successful in defending against any such actions that may be brought against us, our business may be impaired.

1.8 Risks Related to BioNTech Following the Transactions

1.8.1 The CureVac Group is exposed to risks relating to an advance purchase agreement with the European Commission, including risk of repayments and fines, which could affect BioNTech following closing of the Transactions.

On November 30, 2020, CureVac SE (at the time: CureVac AG), a subsidiary of CureVac, entered into an Advance Purchase Agreement ("**APA**") with the European Commission ("**EU Commission**"), acting on behalf of all EU Member States, for the supply of up to 405 million doses of its first-generation COVID-19 vaccine candidate (CVnCoV). Under the APA, CureVac SE received an upfront payment of €450 million, for development and commercial supply activities of CVnCoV. In October 2021, CureVac SE notified the EU Commission of the withdrawal of its regulatory approval application for CVnCoV, which notification automatically terminated the APA. According to the APA, in such case of termination, CureVac SE would be required to return any unspent amount of the upfront payment. In the context of the APA, "spent" means either costs incurred or commitments made in connection with the purposes set forth in the APA.

On July 24, 2024, the EU Commission informed CureVac SE that it had engaged Deloitte, S.L. ("**Deloitte**") to conduct an audit of CureVac SE's compliance with the APA. On September 17, 2025, the EU Commission provided CureVac SE with Deloitte's draft audit report, which included preliminary findings alleging missing documentation, absence of project cost allocation, cost traceability and reconciliations, as well as inconsistencies between information submitted during the audit and financial information previously provided to the EU Commission. CureVac SE is cooperating fully with the EU Commission and Deloitte and submitted a detailed response and objections on October 17, 2025. The EU Commission is expected to issue a final audit report within 60 days thereafter.

CureVac SE contested the findings in Deloitte's draft audit report and believes it can refute the issues raised. However, it remains uncertain to what extent Deloitte and the EU Commission will accept CureVac SE's position. It is also unclear whether the EU Commission will rely on Deloitte's final audit report to seek recovery of any portion or all of the €450 million upfront payment. CureVac SE cannot exclude the possibility of being required to repay a portion or all of the €450 million upfront payment. Should CureVac SE be unsuccessful in contesting any such repayment claims, or the payment of related fines, this could materially affect CureVac's and its subsidiaries' (together, the "**CureVac Group**"), and, following closing of the transactions contemplated by the Purchase Agreement (the "**Transactions**"), the BioNTech Group's financial position, cash flows, and results of operations.

1.8.2 Following the Transactions contemplated by the Purchase Agreement, BioNTech may be unable to integrate the businesses of BioNTech and the CureVac Group successfully and realize the anticipated synergies and other benefits of the Transactions or do so within the anticipated timeframe.

The Transactions involve the combination of two companies that currently operate as independent public companies. BioNTech is expected to benefit from the elimination of duplicative costs associated with supporting a public company platform, technologies, and systems. These savings are expected to be realized upon full integration following the closing of the Transactions. However, BioNTech will be required to devote significant management attention and resources to integrating the business practices and operations of BioNTech and the CureVac Group. Potential difficulties or liabilities BioNTech may encounter in the integration process include the following:

- the inability to successfully combine the businesses of BioNTech and the CureVac Group in a manner that permits BioNTech to achieve the cost savings anticipated to result from the Transactions, which would result in the anticipated benefits of the Transactions not being realized in the timeframe currently anticipated or at all;
- tax liabilities that may become due as a result of the integration of the businesses of BioNTech and the CureVac Group or the post-offer reorganization contemplated by the Purchase Agreement, including the incurrence of any German real estate transfer tax triggered by the acquisition of CureVac and its subsidiaries as well as the forfeiture of any tax loss carry forwards (as well as ongoing year-to-date losses and interests carry forwards) at the level of the CureVac group companies acquired as a consequence of the Transactions or their consummation;

- the complexities associated with managing the combined businesses out of several different locations and integrating personnel from the two companies, as well as consolidating facilities of BioNTech and the CureVac Group that are currently in or near the same location;
- the complexities associated with maintaining existing agreements with counterparties and avoiding delays in entering into new agreements with prospective counterparties;
- the additional complexities of combining two companies with different histories, cultures, regulatory restrictions, markets, systems, and customer bases;
- potential unknown liabilities and unforeseen increased expenses, delays, or regulatory conditions associated with the Transactions; and
- performance shortfalls as a result of the diversion of management's attention caused by completing the Transactions and integrating the companies' operations.

For all these reasons, it is possible that the integration process could result in the distraction of BioNTech's management, the disruption of BioNTech's ongoing business, or inconsistencies in BioNTech's operations, services, standards, controls, procedures, and policies, any of which could adversely affect the ability of BioNTech to maintain relationships with customers, vendors, and employees, or to achieve the anticipated benefits of the transactions, or could otherwise adversely affect the business and financial results of BioNTech.

1.8.3 Following the Transactions, BioNTech may be unable to retain key CureVac Group employees.

The success of the combined company after the Transactions will depend in part upon its ability to retain key CureVac Group employees. Key CureVac Group employees may depart either before or after the Transactions because of issues relating to the uncertainty and difficulty of integration or a desire not to remain with BioNTech following the Transactions. Accordingly, no assurance can be given that the CureVac Group or, following the Transactions, BioNTech will be able to retain key CureVac Group employees to the same extent as in the past, which may harm the business and prospects of the combined company.

1.8.4 Counterparties to certain significant agreements with the CureVac Group may exercise contractual rights under such agreements in connection with the Transactions.

The CureVac Group is a party to certain agreements, including certain lease agreements, collaboration agreements, and business development-related agreements material to the operations of CureVac and/or its affiliates, and employment agreements, that give the counterparty certain rights following a "change in control", including in some cases the right to terminate the agreement. Under some such agreements, the closing of the Offer may constitute a change in control, and therefore the counterparty may exercise certain rights under the agreement upon the closing of the Transactions. Any such counterparty may request modifications of their respective agreements as a condition to granting a waiver or consent under their agreement. There can be no assurances that such counterparties will not exercise their rights under these agreements, including termination rights where available, or that the exercise of any such rights under, or modification of, these agreements will not adversely affect the business or operations of the combined company.

1.8.5 BioNTech expects to incur substantial expenses related to the Transactions.

BioNTech expects to incur substantial expenses in connection with completing the Transactions, and integrating the business, operations, networks, systems, technologies, policies, and procedures of the CureVac Group with those of BioNTech. There are several systems that must be integrated, including accounting and finance. While BioNTech has assumed that a certain level of transaction and integration expenses would be incurred, there are a number of factors beyond its control that could affect the total amount or the timing of BioNTech's integration expenses. Many of the expenses that will be incurred, by their nature, are difficult to estimate accurately at the present time. As a result, the transaction and integration expenses associated with the Transactions could, particularly in the near term, exceed the savings that BioNTech expects to achieve from the elimination of duplicative expenses and the realization of economies of scale and cost savings related to the integration of the businesses following the completion of the Transactions.

1.9 Risks Related to the Offer

1.9.1 Because the number of Offer ADSs issuable in the Offer is subject to a collar, the value of the Offer ADSs to be received by the CureVac Shareholders in the Offer or post-offer reorganization may not fully reflect the value of the Offer ADSs at the time of the closing of the Offer or be equal to $5.4641 per CureVac Share.

The Exchange Ratio is calculated by reference to the volume-weighted average of the price per BioNTech ADS as reported on Nasdaq over the period of 10 consecutive trading days ending on, and including, the fifth trading day immediately preceding the Expiration Time. Notwithstanding the foregoing, in the event the BioNTech ADS VWAP (i) is greater than or equal to $126.55, the Exchange Ratio will be 0.04318 or (ii) is less than or equal to $84.37, the Exchange Ratio will be 0.06476. As a result of such collar, the number of Offer ADSs received in the Offer or the post-offer reorganization may not fully reflect the value of the Offer ADSs or $5.4641 per CureVac Share.

Changes in the price of the BioNTech ADSs may result from a variety of factors, including, among others, general market and economic conditions, changes in BioNTech's business, operations, and prospects, market assessment of the likelihood that the transactions will be completed as anticipated or at all, and regulatory considerations. Many of these factors are beyond BioNTech's control. As a result of any such changes in the price of the BioNTech ADSs, the market value of the Offer ADSs that the CureVac Shareholders will receive at the time that the Offer ADSs are delivered could vary significantly from the value of the BioNTech ADSs immediately prior to the public announcement of the Offer, on the date of this Prospectus, on the date CureVac Shareholders tender their shares, or at the Expiration Time, or on the date on which CureVac Shareholders actually receive Offer ADSs.

From June 12, 2025, when BioNTech and CureVac announced the execution of the Purchase Agreement, through October 17, 2025, the BioNTech ADS VWAP was not greater than or equal to $126.55 or less than or equal to $84.37. Accordingly, the Offer Consideration at all times during that period represented a market value of $5.4641. However, were the BioNTech ADS VWAP to, for example, drop to $80 or go above $130 on the applicable calculation date, the market value of the Offer Consideration could be greater than or less than, respectively, $5.4641.

Accordingly, as of the date of this Prospectus, CureVac Shareholders will not know, or be able to calculate, the exact market value of the consideration that they will receive upon closing of the Offer or completion of the post-offer reorganization.

1.9.2 CureVac Shareholders will be diluted in terms of their ownership in the Company following the Transactions relative to their current ownership in CureVac.

The Transactions will result in CureVac Shareholders having an ownership stake in the Company that is significantly smaller than their current stake in CureVac. Upon completion of the Transactions and assuming all issued and outstanding CureVac Shares are acquired for the Offer Consideration, the Company estimates that former CureVac Shareholders will own between approximately 4% and 6% of the issued and outstanding BioNTech ordinary shares, in the aggregate, depending on the BioNTech ADS VWAP. Consequently, CureVac Shareholders, as a general matter, will have less influence over the management and policies of BioNTech after the completion of the Transactions than each currently exercise over the management and policies of the CureVac Group.

1.9.3 CureVac Shareholders that do not tender their shares in the Offer (including the Subsequent Offering Period) may be subject to Dutch dividend withholding tax on the cancellation consideration such shareholders receive as part of the post-offer reorganization and thus their after-tax return may be lower than CureVac Shareholders who do participate in the Offer (including the Subsequent Offering Period).

If the Company and its affiliates own at least 80% (75% if the minimum condition has been reduced in accordance with the Purchase Agreement) of CureVac's issued and outstanding share capital immediately prior to the Expiration Time, a corporate post-offer reorganization of the CureVac Group may be undertaken by means of a Dutch legal downstream merger of CureVac into a wholly owned

subsidiary of CureVac, CureVac Merger B.V., newly incorporated under the laws of the Netherlands ("**New Topco**"). CureVac Shareholders who did not tender their shares in the Offer would then receive class A shares in the capital of New Topco ("**New Topco A Shares**") as part of such reorganization. In a further step, such New Topco A Shares held by shareholders that did not tender their CureVac Shares in the Offer would be cancelled against a cancellation payment in kind equal to the Offer Consideration (with cash paid in lieu of any resulting fractional BioNTech ADSs), which we refer to as the "**cancellation consideration**") (without interest and subject to any applicable tax withholding).

No Dutch dividend withholding tax is applicable to the Offer Consideration received in exchange for CureVac Shares tendered in the Offer, including the Subsequent Offering Period. However, the cancellation consideration received in the post-offer reorganization will, in principle, be subject to Dutch dividend withholding tax at a rate of 15% if and to the extent the cancellation consideration exceeds the average paid-in capital recognized for Dutch dividend withholding tax purposes of the New Topco A Shares immediately prior to the cancellation effective time.

As long as New Topco has its place of effective management in Germany and is therefore exclusively considered a tax resident of Germany under the double tax treaty between Germany and the Netherlands, as currently expected, shareholders who are not a holder who is resident or deemed to be resident in the Netherlands for Dutch income tax purposes or Dutch corporate income tax purposes (a "**Dutch Resident Holder**") nor a holder who is not resident nor deemed to be resident in the Netherlands for Dutch income tax purposes or Dutch corporate income tax purposes but who derives profits from an enterprise which enterprise is carried on, in whole or in part, through a permanent establishment or a permanent representative in the Netherlands, to which its New Topco A Shares are attributable (a "**Dutch PE Holder**") may be able to reclaim any Dutch dividend withholding tax withheld from the cancellation consideration via New Topco. Dutch Resident Holders and Dutch PE Holders may be eligible for a (partial) refund from the Dutch tax authorities directly, depending on the particular individual circumstances of the relevant New Topco shareholder. There can be no assurances as to the success of any refund request. In any event, any amounts refunded will be in cash. Therefore, non-tendering CureVac Shareholders who are subject to Dutch dividend withholding tax will not receive the investment benefit, if any, of receiving any BioNTech ADSs sold by the exchange agent to cover any applicable Dutch dividend withholding tax.

All Dutch dividend withholding tax due in respect of the cancellation consideration will be for the account of the holder of New Topco A Shares. The exchange agent will be allowed to sell, or procure the sale of, in one or more transactions, the minimum number of BioNTech ADSs to obtain a sufficient cash amount to remit to the Dutch tax authority the relevant amount of Dutch dividend withholding tax, if any, and New Topco and the exchange agent will not be obliged to pay any additional amounts to a holder of New Topco A Shares for any Dutch dividend withholding tax effectively deducted from the cancellation consideration.

As a result of the above, the after-tax return of CureVac Shareholders who did not tender their shares in the Offer, including the Subsequent Offering Period, may be lower than CureVac Shareholders who do participate in the Offer, including the Subsequent Offering Period.

1.9.4 If the German tax authorities take the view that German withholding tax on the cancellation consideration should have been withheld, New Topco or the cancellation consideration recipients could be held liable.

New Topco does not intend to withhold German withholding tax from the cancellation consideration. This is consistent with a view taken in German tax literature in relation to German shares, that the cancellation of shares should be classified as a taxable disposal for German tax purposes, so that New Topco should have no obligation to withhold (but generally it would be the responsibility of the applicable German depositary acting as disbursing agent to withhold). However, absent a definitive decision by the German Federal Fiscal Court, there can be no guarantee that this view will be followed. The German tax authorities or German tax courts may take the view that the share cancellation should be classified as a partial liquidation, such that the cancellation consideration would constitute a generally taxable dividend or dividend in kind, subject to withholding tax for which New Topco could have the obligation to withhold. Such a position would not be known unless and until the German tax authorities take a position on the treatment of the cancellation, such as during a tax audit of New Topco or a cancellation consideration recipient. If the German tax authorities were to take the view that the cancellation consideration constituted a generally taxable dividend and that New Topco had the obligation to withhold, New Topco or the cancellation consideration recipients could be held liable by the German tax authorities for such unremitted withholding tax. In the event New Topco were held liable, it could seek to be made whole by the cancellation consideration recipients.

1.9.5 Completion of the Transactions is subject to many conditions and if these conditions are not satisfied or waived, the Transactions will not be completed, which could result in the requirement that the Company or CureVac pay certain termination fees.

The Company's obligation to exchange the CureVac Shares validly tendered and not properly withdrawn pursuant to the Offer is subject to the satisfaction or waiver of various closing conditions. There can be no assurance that the conditions to closing of the Offer will be satisfied or waived, or that the Transactions will be completed. Failure to consummate the Transactions may adversely affect the BioNTech's or the CureVac Group's results of operations and business prospects for the following reasons, among others: (i) each of the Company and CureVac will incur certain transaction costs, regardless of whether the Transactions close, which could adversely affect each company's respective financial condition, results of operations, and ability to make distributions to its security holders; and (ii) the Transactions, whether or not they close, will divert the attention of certain management and other key employees of BioNTech and the CureVac Group from ongoing business activities, including the pursuit of other opportunities that could be beneficial to BioNTech or the CureVac Group, respectively. In addition, the Company or CureVac may terminate the Purchase Agreement under certain circumstances, which may require the Company to pay CureVac termination compensation of €62.5 million, or may require CureVac to pay the Company termination compensation of €43.75 million. If the Transactions are not consummated, the price of the BioNTech ADSs and the CureVac Shares might decline. The foregoing could have a negative impact on the business, prospects, operating results, and financial condition of BioNTech or the CureVac Group.

1.9.6 The pendency of the Transactions could adversely affect the business and operations of BioNTech and the CureVac Group.

Prior to the completion of the Transactions, some counterparties of each of BioNTech and the CureVac Group may delay or defer decisions, which could negatively affect the revenues, earnings, cash flows, and expenses of BioNTech and the CureVac Group, regardless of whether the Transactions are completed. Similarly, current and prospective employees of the CureVac Group may experience uncertainty about their future roles with BioNTech following the Transactions, which may adversely affect the ability of the CureVac Group to attract and retain key personnel during the pendency of the Transactions. In addition, during the pendency of the Transactions, the Company has agreed, subject to certain exceptions, not to: amend its organizational documents; declare, set aside, or pay any dividends or other distributions; or split, subdivide, exchange, or reclassify its ordinary shares or ADSs. Similarly, during the pendency of the Transactions, CureVac has agreed, subject to certain exceptions, not to, among other things: incur certain liens; pursue certain strategic transactions; dispose of certain intellectual property; commence or materially change clinical studies; enter into certain compensatory arrangements; or enter into any new line of business; or otherwise pursue certain material actions, even if such actions may prove beneficial to CureVac.

1.9.7 The Purchase Agreement contains provisions that could discourage a potential competing acquirer of CureVac or could result in a competing proposal being at a lower price than it might otherwise be.

The Purchase Agreement contains provisions that, subject to limited exceptions necessary to comply with the duties of CureVac's management board and supervisory board, or the "**CureVac Boards**", restrict the ability of CureVac to solicit or initiate discussions with any third party regarding alternative acquisition proposals, or participate in any discussions or negotiations with any third party regarding such proposals, or enter into instruments with respect to such proposals. Subject to certain exceptions, the CureVac Boards are not permitted to (i) withhold, withdraw, qualify, amend or modify in a manner adverse to BioNTech its recommendation to its shareholders to accept the Offer and approve and adopt certain matters, including the Transactions, which we refer to as the CureVac recommendation, (ii) recommend, adopt or approve any alternative acquisition proposal, (iii) publicly make any recommendation in connection with an alternative acquisition proposal other than a recommendation against such proposal, (iv) fail to publicly and without qualification recommend against any alternative acquisition proposal or fail to reaffirm the CureVac recommendation within certain specified time periods, or (v) publicly propose to do any of the foregoing (any such action in this paragraph we refer to as an adverse recommendation change).

Solely in response to a superior proposal received by the CureVac Boards, which must be (i) on balance more favorable to CureVac and the sustainable success of its business, taking into account the interests of its shareholders, employees and other stakeholders, than the transactions; and (ii) reasonably likely to be consummated, the CureVac Boards may at any time prior to the expiration time and, so long as they have not breached their obligation not to solicit an alternative acquisition proposal, make an adverse recommendation change, or terminate the Purchase Agreement and enter into an alternative acquisition agreement with respect to a superior proposal if, (a) CureVac has provided to the Company four business days' prior written notice of the existence of and material terms and conditions of the superior proposal, including the consideration offered and the identity of the third party making such proposal; (b) CureVac has engaged in good faith negotiations with the Company to amend the Purchase Agreement such that the alternative acquisition proposal no longer constitutes a superior proposal; and (c) the CureVac Boards have determined that, in light of such superior proposal and taking into account any revised terms proposed by the Company, that the failure to effectuate an adverse recommendation change and/or terminate the Purchase Agreement would be inconsistent with the directors' fiduciary duties under the laws of the Netherlands.

These provisions could discourage a potential competing acquirer that might have an interest in acquiring all or a significant part of CureVac from considering or proposing such an acquisition, even if the potential competing acquirer was prepared to pay consideration with a higher per share value than the value proposed to be received or realized in the transactions, or might result in a potential competing acquirer proposing to pay a lower per share value than it might otherwise have proposed to pay because of the added expense of the termination fee that may become payable in certain circumstances under the Purchase Agreement.

1.9.8 Shareholder litigation against BioNTech and CureVac could result in an injunction preventing completion of the Transactions, the payment of damages in the event the Transactions are completed, and/or may adversely affect the combined company's business, financial condition, or results of operations following the Transactions.

In connection with transactions similar to the Transactions, purported shareholders of the companies involved in such transactions have filed class action lawsuits against such companies and their boards of directors. If shareholder litigation were to be brought, the plaintiffs may seek to enjoin the transactions, among other remedies. If a court were to refuse to dismiss such lawsuits, or a settlement could not be reached with the plaintiffs, these actions could prevent or delay completion of the transactions, and result in substantial costs to the Company and CureVac, including any costs associated with the indemnification of directors. Any litigation relating to the Transactions could distract BioNTech or CureVac from pursuing the consummation of the Transactions and other potentially beneficial business opportunities. Further, the defense or settlement of any lawsuit or claim that remains unresolved at the time the Transactions are completed may adversely affect the combined company's business, financial condition, or results of operations.

1.9.9 The Company must implement share capital increases to create the Offer Consideration, which will result in an extended settlement and may delay the closing of the Transactions. Tendering CureVac Shareholders will not receive any interest or other consideration as a result of this extended settlement.

Under German law, the Company is required to implement a share capital increase to issue a definitive number of the Company's ordinary shares that will underly the Offer ADSs constituting the Offer Consideration. This requires the registration of a share capital increase in the Company's commercial register, which is administered by the German local court (*Amtsgericht*) of the Company's judicial district. The exact timing of the registration process for capital increases lies with such court and is outside the control of the Company. There may be delays in the effectiveness of the capital increases and the creation of the Company's ordinary shares and, thus, the transfer of the Offer ADSs constituting the Offer Consideration to tendering CureVac Shareholders.

In light of the foregoing, the Company cannot guarantee the precise timing of delivery of Offer ADSs in connection with the Offer or the Subsequent Offering Period. The Company expects that the delivery of Offering ADSs to the tendering CureVac Shareholders will take approximately ten business days following the Acceptance Time or, as applicable, the expiration of the Subsequent Offering Period, but it could be three weeks or more. The Company is delivering the Offering ADSs in accordance with the requirements of German law and practice, consistent with Rule 14d-1(d)(2)(iv) under the Exchange Act.

Tendering CureVac Shareholders will not receive any interest or other compensation for the period between the date on which they tender their CureVac Shares in the initial Offer or the Subsequent Offering Period and the date on which they receive Offer ADSs and may not be able to react to any adverse developments affecting the business, financial condition, or results of operations of BioNTech or the CureVac Group and the market prices of tendered CureVac Shares or, until BioNTech ADSs are received, such BioNTech ADSs, by selling the respective securities.

1.10 Risks Related to Ownership of BioNTech ADSs

1.10.1 We have experienced and may continue to experience significant volatility in the market price of the BioNTech ADSs.

Biopharmaceutical companies such as BioNTech that are developing potential therapeutics and vaccines to combat COVID-19, as well as conducting mRNA-based research in oncology and infectious disease more generally, have experienced significant volatility in the price of their securities upon publication of preclinical and clinical data as well as news about their development programs and commercialization activities. For example, during 2024, the closing sales price of the BioNTech ADSs on the Nasdaq Global Select Market ranged from $78.36 to $124.71, with significant volatility occurring, for example, shortly after announcements by us or others related to regulatory matters, to our COVID-19 vaccine, to other COVID-19 vaccines, to development and commercialization pipelines in oncology and infectious disease, and to our transactions with third parties. Additionally, we have observed the trading price of the ADSs respond significantly to news and statements by us, government agencies, other vaccine developers, financial analysts or others relating to our business as well as to other COVID-19 vaccines and COVID-19 therapeutics and the spread of COVID-19 generally, even in cases in which we believe the news does not affect our business or vaccine specifically. Given the attention being paid to COVID-19 worldwide and the public scrutiny of COVID-19 development and commercialization announcements, and given that our COVID-19 vaccine is currently among the primary vaccines being used worldwide, any news regarding manufacturing, supply and distribution of our COVID-19 vaccine or unanticipated side effects of our COVID-19 vaccine, whether or not accurate, will attract significant attention and scrutiny and, as a result, the price of the BioNTech ADSs likely will continue to be volatile.

In addition to the risks listed in this section "*1 Risk Factors*" and in the preceding paragraph, a number of factors could negatively affect the price of the BioNTech ADSs or result in fluctuations in the price or trading volume of the ADSs, including:

- equity issuances by the Company, or future sales of substantial amounts of BioNTech ADSs by its existing or future holders, or the perception that such issuances or future sales may occur;
- changes in market valuations of similar companies;
- fluctuations in stock market prices and volumes;
- additions or departures of key management personnel;
- BioNTech's operating performance and the performance of other similar companies;
- actual or anticipated differences in BioNTech's quarterly operating results;
- changes in expectations of future financial performance or changes in estimates of securities analysts;
- publication of research reports about BioNTech or its industry by securities analysts;

- adverse market reaction to any indebtedness BioNTech incurs in the future;
- strategic decisions by BioNTech or its competitors, such as acquisitions, divestments, spin-offs, joint ventures, strategic investments, or changes in business strategy;
- the passage of legislation or other regulatory developments that adversely affect BioNTech or its industry;
- speculation in the press or investment community;
- changes in BioNTech's earnings;
- failure to satisfy the listing requirements of Nasdaq;
- failure to comply with the requirements of the Sarbanes-Oxley Act of 2002;
- actions by institutional shareholders of the Company;
- changes in accounting principles; and
- general economic and/or market conditions, including factors unrelated to BioNTech's performance.

Furthermore, the results of operations of BioNTech, as well as the market price of the BioNTech ADSs after the Transactions, may be affected by other factors in addition to those currently affecting BioNTech's or the CureVac Group's results of operations and the market prices of the BioNTech ADSs and CureVac Shares, including:

- a greater number of BioNTech ADSs outstanding as compared to the number of currently outstanding BioNTech ADSs;
- the Transactions not achieving the perceived benefits as rapidly or to the extent anticipated by financial or industry analysts, or the effect of the Transactions on BioNTech's financial results is not consistent with the expectations of financial or industry analysts
- different shareholders and rights attached to the BioNTech ADSs as compared to CureVac Shares; and
- different assets and capitalizations.

Accordingly, the historical market prices and financial results of BioNTech and the CureVac Group may not be indicative for BioNTech after the Transactions. Former CureVac Shareholders may not wish to continue to invest in the Company, or for other reasons may wish to dispose of some or all of their BioNTech ADSs. If, following the closing of the Transactions, large amounts of the BioNTech ADSs are sold, including as a result of the aforementioned factors, the price of the ADSs could decline.

In the past, securities class action litigation has often been instituted against companies following periods of volatility in the price of their traded securities. This type of litigation could result in substantial costs and divert BioNTech's management's attention and resources, which could have a material adverse effect on BioNTech's cash flows, its ability to execute its business strategy, and BioNTech's business prospects.

1.10.2 Acquisitions, joint ventures and collaborations may increase our capital requirements, dilute our shareholders, cause us to incur debt or assume contingent liabilities, and subject us to other risks. We may not realize the benefits of these acquisitions, joint ventures or collaborations.

We may evaluate various acquisitions and collaborations, including licensing or acquiring complementary products, intellectual property rights, technologies or businesses. Any potential acquisition, joint venture or collaboration may entail numerous risks, including:

- increased operating expenses and cash requirements;
- the assumption of additional indebtedness or contingent liabilities;
- assimilation of operations, intellectual property and products of an acquired company, including difficulties associated with integrating new personnel;

- the diversion of our management's attention from our existing product programs and initiatives in pursuing such a strategic merger or acquisition;
- retention of key employees, the loss of key personnel, and uncertainties in our ability to maintain key business relationships;
- risks and uncertainties associated with the other party to such a transaction, including the prospects of that party and their existing products or product candidates and regulatory approvals, their quality control, quality assurance, internal controls, legal and compliance procedures; and
- our inability to generate revenues from acquired technology or products sufficient to meet our objectives in undertaking the acquisition or even to offset the associated acquisition and maintenance costs.

In addition, if we undertake acquisitions, we may utilize our cash, issue dilutive securities, assume or incur debt obligations, incur large one-time expenses and acquire intangible assets that could result in significant future amortization expense. For example, in July 2023, we acquired InstaDeep, a leading global technology company in the field of AI and machine learning, for upfront consideration of cash and BioNTech shares, and potential future milestone payments. Although we believe that AI and machine learning technology has the potential to accelerate the development of therapeutic programs and further optimize manufacturing and supply chain processes, it is possible that our use of the acquired technology will not achieve the desired results, and that we will not be able to retain and grow InstaDeep's business around the world. If demand for the services developed by InstaDeep does not continue, or if we are unable to improve our AI and machine learning technology in a timely, effective and competitive manner, we may not be able realize the expected outcomes from the InstaDeep acquisition. In January 2025, we acquired Biotheus, a clinical-stage biotechnology company, for upfront consideration predominantly of cash, with a small portion in our BioNTech ADSs, and potential future milestone payments. Although the Biotheus acquisition expands our operations in China, our expectations regarding the creation of long-term value for shareholders and potential future commercialization in oncology may not be realized. In June 2025, we entered into the Purchase Agreement with CureVac, a biotechnology company focused on the development of mRNA therapeutics, to acquire CureVac through the Offer. While we believe the proposed acquisition has the potential to enhance our capabilities in mRNA research, development, manufacturing and commercialization, there can be no assurance that the transaction will be completed on the expected timeline or at all, or that we will realize the anticipated benefits from the transaction, if completed. There is no guarantee that we will realize any anticipated benefits of these or future acquisitions, or that the diversification of our business through acquired technology or products will be successful.

Moreover, we may not be able to locate suitable acquisition or collaboration opportunities and this inability could impair our ability to grow or obtain access to technology or products that may be important to the development of our business.

1.10.3 The Company's articles of association designate specific courts in the United States as the exclusive forum for certain U.S. litigation that may be initiated by our shareholders, which could limit our shareholders' ability to obtain a favorable judicial forum for disputes with us.

The Company's articles of association (*Satzung*), or the "**Articles of Association**", provide that the United States District Court for the Southern District of New York shall be the competent court of jurisdiction for the resolution of any litigation on the grounds of or in connection with U.S. federal or state capital market laws. In the absence of these provisions, under the Securities Act of 1933, as amended, or the "**Securities Act**", U.S. federal and state courts have been found to have concurrent jurisdiction over suits brought to enforce duties or liabilities created by the Securities Act.

The choice of forum provision contained in our Articles of Association may limit a shareholder's ability to bring a claim in a judicial forum that it finds favorable for disputes with us or our executive officers, directors, or other employees, or impose additional litigation costs on shareholders in pursuing any such claims, particularly if the shareholders do not reside in or near the state of New York, which may discourage such lawsuits. In addition, while the Delaware Supreme Court ruled in March 2020 that federal forum selection provisions purporting to require claims under the Securities Act be brought in federal court are "facially valid" under Delaware law, there is uncertainty as to whether other U.S. or German courts will enforce our choice of forum provision. The enforceability of similar choice of forum

provisions in other companies' governing documents has been challenged in recent legal proceedings, and it is possible that a court in the relevant jurisdictions with respect to us could find the choice of forum provision contained our Articles of Association to be inapplicable or unenforceable. If the relevant court were to find the choice of forum provision contained in our Articles of Association to be inapplicable or unenforceable, we may incur additional costs associated with resolving such matters in other jurisdictions, which could adversely affect our business, financial condition and operating results. The choice of forum provision may also impose additional litigation costs on shareholders who assert that the provision is not enforceable or invalid. The United States District Court for the Southern District of New York may also reach different judgments or results than would other courts, including courts where a shareholder considering a U.S.-based action may be located or would otherwise choose to bring the action, and such judgments may be more or less favorable to us than our shareholders.

1.10.4 Holders of the BioNTech ADSs may not be able to participate in any future preemptive subscription rights issues or elect to receive dividends in shares, which may cause additional dilution to their holdings.

Under German law, the existing shareholders of a company generally have a preemptive right in proportion to the amount of shares they hold in connection with any issuance of ordinary shares, convertible bonds, bonds with warrants, profit participation rights and participating bonds. However, our shareholders in a shareholders' meeting may vote, by a majority representing at least three-quarters of the share capital represented at the meeting, to waive this preemptive right provided that, from the Company's perspective, there exists good and objective cause for such waiver.

The agreement governing the BioNTech ADSs provides that the depositary need not make rights available to BioNTech ADS holders unless the distribution to BioNTech ADS holders of both the rights and any related securities are either registered under the Securities Act or exempted from registration under the Securities Act. We are under no obligation to file a registration statement with respect to any such rights or securities or to endeavor to cause such a registration statement to be declared effective. Moreover, we may not be able to establish an exemption from registration under the Securities Act. Accordingly, BioNTech ADS holders may be unable to participate in our future rights offerings and may experience dilution in their holdings. For example, BioNTech ADS holders were unable to participate in our summer 2020 rights offering. In addition, if the depositary is unable to sell rights that are not exercised or not distributed or if the sale is not lawful or reasonably practicable, it will allow the rights to lapse, in which case the BioNTech ADS holder will receive no value for these rights.

1.10.5 Our principal shareholders and management own a significant percentage of our ordinary shares and will be able to exert significant control over matters subject to shareholder approval.

Our executive officers, directors, five percent shareholders, and their affiliates beneficially own a majority of our ordinary shares (including ordinary shares represented by BioNTech ADSs), and will have the ability to influence us through their ownership positions. For example, these shareholders, acting together, may be able to exert significant influence over matters such as elections of directors, amendments of our organizational documents, or approval of any merger, sale of assets or other major corporate transaction. This may prevent or discourage unsolicited acquisition proposals or offers for our ordinary shares that shareholders may believe are in their best interest. Such insiders may also act in concert to waive rights to participate in rights offerings, as was done in our summer 2020 rights offering, which would have the effect of permitting the BioNTech ADSs or shares underlying such waived rights to be offered to the public in an underwritten offering without contravening German law pricing requirements.

1.10.6 The large number of shares eligible for sale or subject to rights requiring us to register them for sale could cause the market price of the BioNTech ADSs to drop significantly, even if our business is performing well.

We have filed registration statements on Form S-8 under the Securities Act to register all ordinary shares issued or issuable under our equity plans. Such Form S-8 registration statements have become, and any other registration statements on Form S-8 we file in the future will become, effective upon filing, upon which shares registered under such registration statements become available for sale in the open market.

Additionally, certain sales of BioNTech ADSs or our ordinary shares that we have made have included, and we may in the future make sales including, holding period restrictions or registration rights. Sales of BioNTech ADSs or our ordinary shares as restrictions end or pursuant to registration rights may make it more difficult for us to finance our operations through the sale of equity securities in the future at a time and at a price that we deem appropriate. These sales also could cause the trading price of the BioNTech ADSs to fall and make it more difficult to sell the BioNTech ADSs on favorable terms.

1.10.7 The acquisition of a substantial interest in the Company by non-EU/non-EFTA investors requires government approval, which may restrict certain investments and limit demand for the BioNTech ADSs

As the Group is considered an operator of "critical infrastructure" within the meaning of the Ordinance on the Designation of Critical Infrastructure pursuant to the BSI Act (*Verordnung zur Bestimmung Kritischer Infrastrukturen nach dem BSI-Gesetz*), it falls within the scope of the cross-sector review of the German foreign investment screening regime under the German Foreign Trade and Payments Ordinance (*Außenwirtschaftsverordnung*). As a result, non-EU/non-EFTA investors intending to acquire, directly or indirectly, at least 10% of the voting rights in the Company or already hold voting rights in the Company and will acquire further voting rights reaching or exceeding 20%, 25%, 40%, 50% or 75% of the voting rights in the Company must notify the planned acquisition to the German Federal Ministry for Economic Affairs and Energy (*Bundesministerium für Wirtschaft und Energie*, or the "**BMWE**"). The BMWE will then assess whether the acquisition likely adversely affects the public order or security of Germany or other EU member states or projects or programmes of Union interest within the meaning of Article 8 of Regulation (EU) 2019/452 of the European Parliament and of the Council of 19 March 2019 establishing a framework for the screening of foreign direct investments into the Union. Clearance by the BMWE qualifies as a closing condition for all over-the-counter transactions. If the acquisition has been made via the stock exchange, the acquirer is prohibited from exercising its voting rights until the transaction has been cleared or is deemed cleared. If the BMWE identifies likely adverse effects, the acquisition of voting rights in the Company could be restricted or prohibited or, if the acquisition has been made via the stock exchange, the BMWE may order a sell-down of the voting rights in the Company acquired via the stock exchange or a transfer to a trustee within a certain period of time and/or prohibit the exercise of voting rights until such time as the acquisition is finally reversed.

1.10.8 Holders of the BioNTech ADSs are not treated as shareholders of the Company and will not have the same voting rights as the Company's shareholders, which may affect the value of the BioNTech ADSs.

Holders of BioNTech ADSs are not treated as the Company's shareholders unless they cancel the BioNTech ADSs and withdraw the Company's ordinary shares underlying the BioNTech ADSs from the depositary, which is the holder of the Company's ordinary shares underlying the BioNTech ADSs. Holders of BioNTech ADSs, therefore, do not have any rights as shareholders of the Company, other than the rights that they have pursuant to the deposit agreement. As such, holders of BioNTech ADSs will not be able to directly vote underlying ordinary shares. Holders of BioNTech ADSs may instruct the depositary how to vote the ordinary shares underlying their BioNTech ADSs. If the Company asks it to, the depositary will send out information about shareholder meetings and solicit voting instructions and will try to carry out voting instructions it receives. However, the Company is not required to instruct the depositary to take action with respect to shareholder meetings. If the Company does not do so, holders of the BioNTech ADSs can still send voting instructions to the depositary, and the depositary may try to carry out those instructions, but it is not required to do so. Holders of the BioNTech ADSs may not become aware of shareholder meetings if the depositary does not send out information. Even if the depositary does solicit voting instructions, holders of BioNTech ADSs may not receive the information in time. As a result of these factors, holders of BioNTech ADSs may not be able to effectively exercise voting rights that they would have if they held ordinary shares of the Company directly and, as a consequence of their treatment, the BioNTech ADSs may trade at a discount.

2 GENERAL INFORMATION

2.1 Responsibility for the Contents of the Prospectus

The Company, a European company (*Societas Europaea, SE*) with its registered seat in Mainz, Germany and its business address in An der Goldgrube 12, 55131 Mainz, Germany, registered with the commercial register (*Handelsregister*) of the local court (*Amtsgericht*) of Mainz under HRB 48720, legal entity identifier, or "**LEI**", 894500UZJ5LG1F8J1U58, assumes responsibility for the contents of the Prospectus pursuant to Section 8 of the German Securities Prospectus Act (*Wertpapierprospektgesetz*) and Article 11 para. 1 of the Prospectus Regulation and declares that, to the best of its knowledge, the information contained in the Prospectus is in accordance with the facts and that the Prospectus makes no omission likely to affect its import.

2.2 Subject Matter of the Prospectus

BioNTech SE has entered into the Purchase Agreement, dated as of June 12, 2025, by and between BioNTech SE and CureVac N.V. Pursuant to the Purchase Agreement, BioNTech SE will commence the Offer to acquire all issued CureVac Shares (Nasdaq Trading Symbol "CVAC") in exchange for the Offer ADSs, i.e., 15,061,575 newly registered American Depositary Shares (Nasdaq Trading Symbol: BNTX, International Securities Identification Number (ISIN): US09075V1026, German Securities Code (*Wertpapierkennnummer*, WKN): A2PSR2), each representing one newly issued ordinary registered share with no par value (*auf den Namen lautende Stückaktie*) of BioNTech SE per CureVac Share.

Under the Offer, the Company offers 15,061,575 Offer ADSs in exchange for all CureVac Shares issued immediately prior to the Expiration Time. In exchange for each tendered CureVac Share, the Company offers a number of Offer ADSs determined by multiplying the number of tendered CureVac Shares with the Exchange Ratio, taken to five decimals. The Exchange Ratio is determined by dividing $5.4641 by the BioNTech ADS VWAP. The BioNTech ADS VWAP in turn is determined as the volume-weighted average of the price per BioNTech ADSs, taken to four decimal places, over the period of ten consecutive trading days ending on, and including, the fifth trading day immediately preceding the time on which the initial Offer expires (as it may be extended), and is subject to the following collar adjustment: In the event the BioNTech ADS VWAP is greater than or equal to $126.55, the Exchange Ratio will be 0.04318 and in the event the BioNTech ADS VWAP is less than or equal to $84.37, the Exchange Ratio will be 0.06476. The resulting number of Offer ADSs to be received is referred to as the Offer Consideration. The Company will only deliver whole Offer ADSs. For any fractional Offer ADSs, the tendering CureVac Shareholder will instead receive an amount in cash, without interest and less any applicable tax withholding equal to the product of (i) the fractional Offer ADS interest such shareholder otherwise would be entitled to and (ii) the BioNTech ADS VWAP, rounded to the nearest cent. For further details, see section "*3.1.2.1 Offer Consideration*", including sample calculations.

The number of 15,061,575 Offer ADSs has been set on the basis of a number of 225,181,647 CureVac Shares currently issued and an additional 7,393,645 CureVac Shares that may be issued until the closing of the Offer, applying an Exchange Ratio of 0.06476.

The Offer consists of (i) a public offer in the United States, registered under the Securities Act pursuant to a registration statement on Form F-4 filed with the SEC, (ii) a public offer in the Federal Republic of Germany, Austria, France, Italy, the Netherlands and Spain and (iii) a public offer in the United Kingdom for which a UK prospectus exemption document has been published for the purposes of the Prospectus Regulation as it forms part of the United Kingdom of Great Britain and Northern Ireland ("**U.K.**") domestic law by virtue of the European Union (Withdrawal) Act 2018 (as amended) (the "**U.K. Prospectus Regulation**").

This Prospectus relates to the public offer of the Offer ADSs in the Federal Republic of Germany, Austria, France, Italy, the Netherlands and Spain to the holders of CureVac Shares under the terms of the Offer.

In addition, the Offer ADSs are being offered through a public offer in Switzerland in reliance on and pursuant to Article 54(2) of the Swiss Financial Services Act dated June 15, 2018.

2.3 General Disclaimers; Validity of the Prospectus

Where a claim relating to the information contained in a prospectus is brought before a court, the plaintiff investor might, under the respective national legislation of the relevant member state of the European Economic Area, or "**EEA**", have to bear the costs of translating the Prospectus before the legal proceedings are initiated.

This Prospectus will be valid for twelve months following its approval, i.e., until October 20, 2026, provided that it is completed by any supplement required by Article 23 of the Prospectus Regulation. In accordance with the Prospectus Regulation, the Company is required to supplement this Prospectus for every significant new factor, material mistake or material inaccuracy relating to the information included in this Prospectus which may affect the assessment of the securities and which arises or is noted between the time when this Prospectus is approved and the closing of the Offer. The Offer will initially remain open until 9:00 a.m. (New York City time) on December 3, 2025, unless it is extended or terminated in accordance with the Purchase Agreement. Any extension of the initial Offer will be followed by a public announcement of the extension no later than 9:00 a.m. (New York City time) on the next business day after the day on which the initial Offer was otherwise scheduled to expire. The latest time to which the initial Offer has been extended in accordance with the Purchase Agreement is the Expiration Time. Subject to the satisfaction or waiver of the offer conditions, the Company will following the Expiration Time accept for exchange any validly tendered CureVac Shares (such time for acceptance, the Acceptance Time). Following the Acceptance Time, the Company will provide a Subsequent Offering Period in accordance with Rule 14d-11 promulgated under the Exchange Act of not less than 10 business days (calculated in accordance with Rule 14d-1(g)(3) promulgated under the Exchange Act).

Accordingly, the validity of this Prospectus will expire upon the occurrence of the Expiration Time or, if the Subsequent Offering Period applies, the expiry of the Subsequent Offering Period, and no obligation to supplement this Prospectus will apply in the event of significant new factors, material mistakes or material inaccuracies after that date.

THIS PROSPECTUS IS NOT AN OFFER TO SELL SECURITIES AND IT IS NOT A SOLICITATION OF AN OFFER TO BUY SECURITIES, NOR SHALL THERE BE ANY SALE OR PURCHASE OF SECURITIES PURSUANT HERETO, IN ANY JURISDICTION IN WHICH SUCH OFFER, SOLICITATION OR SALE IS NOT PERMITTED OR WOULD BE UNLAWFUL PRIOR TO REGISTRATION OR QUALIFICATION UNDER THE LAWS OF ANY SUCH JURISDICTION. IF IN ANY DOUBT AS TO THE ELIGIBILITY TO PARTICIPATE IN THE OFFER, INVESTORS SHOULD CONTACT THEIR PROFESSIONAL ADVISOR IMMEDIATELY. For further information on certain selling restrictions with respect to the Offer ADSs, see section "*3.1.4 Selling Restrictions*".

For further information on the Offer, see section "*3 The Offer*".

2.4 Competent Authority Approval

The Prospectus constitutes a prospectus for the purposes of Article 3 of the Prospectus Regulation and has been approved by the German Federal Financial Supervisory Authority (*Bundesanstalt für Finanzdienstleistungsaufsicht*, or "**BaFin**") as competent authority under the Prospectus Regulation. BaFin only approves this Prospectus as meeting the standards of completeness, comprehensibility and consistency imposed by the Prospectus Regulation. BaFin's approval should not be considered as an endorsement of the Company nor of the quality of the Offer ADSs. Investors should make their own assessment as to the suitability of investing in the securities.

BaFin can be contacted at Marie-Curie-Str. 24-28, 60439 Frankfurt am Main, Germany, by telephone +49 228 4108-0, or via its website: www.bafin.de.

The Company has requested BaFin to provide Austrian supervisory authority *Österreichische Finanzmarktaufsicht*, the French supervisory authority *Autorité des marchés financiers*, the Dutch supervisory authority *Autoriteit Financiële Markten*, the Italian supervisory authority *Commissione Nazionale per le Società e la Borsa* and the Spanish supervisory authority *Comisión Nacional del Mercado de Valores* with a certificate of approval attesting that the Prospectus has been drawn up in accordance with the Prospectus Regulation, pursuant to Article 25 of the Prospectus Regulation.

The Company will file this Prospectus with the Swiss review body of SIX Exchange Regulation Ltd. pursuant to Article 54(2) of the Swiss Financial Services Act dated June 15, 2018.

2.5 Forward-Looking Statements

This Prospectus contains certain forward-looking statements. These forward-looking statements are based on current expectations, estimates and projections about the industry and markets in which BioNTech and the CureVac Group operate and beliefs of, and assumptions made by, BioNTech management and CureVac management and involve uncertainties that could significantly affect the financial results of BioNTech or the CureVac Group, respectively. Forward-looking statements can generally be identified by words such as "potential," "can," "will," "plan," "may," "could," "would," "expect," "look forward," "investigational," "pipeline," "to acquire," "development," "to include," "commitment," "project," "prospective," or similar terms. Investors are cautioned that any such forward-looking statements are based on BioNTech's current beliefs and expectations regarding future events and are not guarantees of future performance and involve risks and uncertainties. If underlying assumptions prove inaccurate or risks or uncertainties materialize, actual results may differ materially from those set forth in the forward-looking statements. Forward-looking statements can be found in several sections in the Prospectus, for example in sections "*5.2 Reasons for the Offer; Use of Proceeds*", "*8.1 Capitalization*", "*8.2 Total Financial Indebtedness*", "*9 Operating and Financial Review*", "*10 Profit Forecast*", "*11 Business*" and "*24 Recent Developments and Outlook*". Some of the factors that may affect outcomes and results include, but are not limited to:

- uncertainties as to the timing of the offer and the post-offer reorganization;
- uncertainties as to how many of CureVac's shareholders will tender their shares in the offer;
- the risk that competing offers or acquisition proposals will be made;
- the possibility that various conditions to the consummation of the offer and the other transactions may not be satisfied or waived;
- the possibility of a termination of the Purchase Agreement;
- the ability to obtain necessary antitrust or other regulatory approvals or to obtain them on acceptable terms or within expected timing;
- the effects of disruption from the transactions and the impact of the announcement and pendency of the transactions on BioNTech's and/or CureVac's business, including their relationships with employees, business partners, or governmental entities;
- the risk that the offer or the other transactions may be more expensive to complete than anticipated;
- the risk that litigation in connection with the offer or the other transactions may result in significant costs of defense, indemnification, and liability;
- a diversion of management's attention from ongoing business operations and opportunities as a result of the offer, the other transactions, or otherwise;
- general industry conditions and competition;
- general political, economic, and business conditions, including interest rate, inflation, tariff and currency exchange rate fluctuations, and the ongoing Russia-Ukraine and Middle East conflicts;
- the impact of regulatory developments and changes in the United States, Europe, and countries outside of Europe, including with respect to tax matters;
- the impact of pharmaceutical industry regulation and health care legislation in the United States, Europe, and elsewhere;
- the particular prescribing preferences of physicians and patients;
- competition from other products;
- challenges and uncertainties inherent in new product development;

- ability to obtain or maintain proprietary intellectual property protection;
- safety, quality, data integrity, or manufacturing issues; and
- potential or actual data security and data privacy breaches.

Should one or more of the risks or uncertainties described above or elsewhere in this Prospectus occur, or should underlying assumptions prove incorrect, actual results and plans could differ materially from those expressed in any forward-looking statements or forecasts. In addition, the forward-looking estimates and forecasts reproduced in the Prospectus from third-party sources could prove to be inaccurate. For more information on third-party sources see section "*2.6 Information from Third Parties*". These factors are not necessarily all important factors that could cause the BioNTech's or the CureVac Group's actual results to differ materially from those expressed in any forward-looking statements. Other unknown or unpredictable factors could also have material adverse effects on future results. The foregoing may prevent the Company from achieving its financial and strategic objectives.

The forward-looking statements contained in the Prospectus speak only as of the date of the Prospectus. Investors are advised that the Company does not assume any obligation and do not intend to, except as required by law, publicly release any updates or revisions to these forward-looking statements to reflect any change in the Company's expectations with regard thereto or any change in events, conditions or circumstances on which any such statement is based or to adjust them in line with future events or developments. Investors should not place undue reliance on these statements.

2.6 Information from Third Parties

This Prospectus contains research data, statistics, data and other information relating to markets, market sizes, market shares, market positions, market trends and other industry data pertaining to the Company's business and markets, as well as certain information relating to CureVac or the CureVac Group. For these statistics, market data and other information, the sources listed below were used in the preparation of this Prospectus or are referred to in this Prospectus:

- Beissert, T., Perkovic, M., Vogel, A., Erbar, S., Walzer, KC, Hempel, T., Brill, S., Haefner, E., Becker, R., Türeci, Ö., Sahin, U. A., Trans-amplifying RNA Vaccine Strategy for Induction of Potent Protective Immunity, Mol Ther. 2020 Jan 8, 28(1), 119-128, available at: https://doi.org/10.1016/j.ymthe.2019.09.009;
- CureVac, Annual Report on Form 20-F for the fiscal year ended December 31, 2024, as filed with the SEC on April 11, 2025, available at http://www.sec.gov;
- CureVac, Reports on Form 6-K furnished to the SEC on March 27, 2025, and April 7, 2025, May 20, 2025, June 12, 2025, June 16, 2025, August 8, 2025 and August 15, 2025, available at http://www.sec.gov;
- CureVac, Articles of association, available on the investor relations page at: https://www.curevac.com/en/investor-relations/corporate-governance/;
- European Medicines Agency, ETF recommends updating COVID-19 vaccines to target new JN.1 variant, 30 April 2024, available at: https://www.ema.europa.eu/en/news/etf-recommends-updating-covid-19-vaccines-target-new-jn1-variant;
- European Medicines Agency, ETF recommends updating COVID-19 vaccines to target new LP.8.1 variant, 16 May 2025, available at: https://www.ema.europa.eu/en/news/etf-recommends-updating-covid-19-vaccines-target-new-lp81-variant;
- Fitzpatrick, Meagan C. et al., "Two Years of U.S. COVID-19 Vaccines Have Prevented Millions of Hospitalizations and Deaths", *To the Point* (blog), Commonwealth Fund, December 13, 2022, available at https://doi.org/10.26099/whsf-fp90;
- Grand View Research, Inc., Global mRNA Therapeutics Market Size & Outlook, 2023-2030 available at: https://www.grandviewresearch.com/horizon/outlook/mrna-therapeutics-market-size/global;
- Haley J. Appaneal, Vrishali V. Lopes, Laura Puzniak, Evan J. Zasowski, Luis Jodar, John M. McLaughlin, Early effectiveness of the BNT162b2 KP.2 vaccine against COVID-19 in the US Veterans Affairs Healthcare System, December 29, 2024, medRxiv, available at: doi: https://doi.org/10.1101/2024.12.26.24319566;

- Lopez, J., Powles, T., Braiteh, F. et al., Autogene cevumeran with or without atezolizumab in advanced solid tumors: a phase 1 trial, Nat Med 31, 152–164 (2025), available at: https://doi.org/10.1038/s41591-024-03334-7;
- Meslé MMI, Brown J, Mook P, et. al., Estimated number of lives directly saved by COVID-19 vaccination programmes in the WHO European Region from December, 2020, to March, 2023: a retrospective surveillance study, Lancet Respir Med. 2024 Sep;12(9):714-727. doi: 10.1016/S2213-2600(24)00179-6, Epub 2024 Aug 7, PMID: 39127051, available at: https://pubmed.ncbi.nlm.nih.gov/39127051/;
- Mora, C., McKenzie, T., Gaw, I.M. et al., Over half of known human pathogenic diseases can be aggravated by climate change. Nat. Clim. Chang. 12, 869–875 (2022), available at: https://doi.org/10.1038/s41558-022-01426-1;
- Nakamura, Y., Watanabe, J., Akazawa, N. et al., ctDNA-based molecular residual disease and survival in resectable colorectal cancer, Nat Med 30, 3272–3283 (2024), available at: https://doi.org/10.1038/s41591-024-03254-6;
- Rojas, L.A., Sethna, Z., Soares, K.C. et al., Personalized RNA neoantigen vaccines stimulate T cells in pancreatic cancer, Nature 618, 144–150 (2023), available at: https://doi.org/10.1038/s41586-023-06063-y;
- Rudolph, Abby E., Khan, Farid L., Xiaowu Sun, Laura, L. Lupton, Puzniak, Laura A., Jodar, Luis, M. McLaughlin, John, Receipt of BNT162b2 KP.2 Vaccine and COVID-19 CVS MinuteClinic Visits in US Adults, January 17, 2025, medRxiv, available at: https://doi.org/10.1101/2025.01.15.24319342;
- Sahin, U., Karikó, K. & Türeci, Ö. mRNA-based therapeutics — developing a new class of drugs. Nat Rev Drug Discov 13, 759–780 (2014), available at: https://doi.org/10.1038/nrd4278;
- Sethna, Z., Guasp, P., Reiche, C. et al., RNA neoantigen vaccines prime long-lived CD8+ T cells in pancreatic cancer, Nature 639, 1042–1051 (2025), available at: https://doi.org/10.1038/s41586-024-08508-4;
- S&P Global, Sustainability Yearbook 2025, available at: https://www.spglobal.com/esg/csa/yearbook/;
- The Business Research Company, Global Mrna Therapeutics Market Size & Outlook, 2023-2030, available at: https://www.grandviewresearch.com/horizon/outlook/mrna-therapeutics-market-size/global;
- U.S. Food & Drug Administration, FDA Approves First COVID-19 Vaccine, Approval Signifies Key Achievement for Public Health, August 23, 2021, available at: https://www.fda.gov/news-events/press-announcements/fda-approves-first-covid-19-vaccine;
- U.S. Food & Drug Administration, FDA Briefing Document Vaccines and Related Biological Products Advisory Committee Meeting, June 5, 2024, https://www.fda.gov/media/179003/download;
- U.S. Food & Drug Administration, COVID-19 Vaccines (2025-2026 Formula) for Use in the United States Beginning in Fall 2025, May 22, 2025, available at: https://www.fda.gov/vaccines-blood-biologics/industry-biologics/covid-19-vaccines-2025-2026-formula-use-united-states-beginning-fall-2025;
- World Health Organization, Statement on the antigen composition of COVID-19 vaccines, April 26, 2024, available at: https://www.who.int/news/item/26-04-2024-statement-on-the-antigen-composition-of-covid-19-vaccines;
- World Health Organization, Statement on the antigen composition of COVID-19 vaccines, May 15, 2025, available at: https://www.who.int/news/item/15-05-2025-statement-on-the-antigen-composition-of-covid-19-vaccines; and

- World Health Organization, World health statistics 2022: monitoring health for the SDGs, sustainable development goals, May 19, 2022, available at: https://www.who.int/publications/i/item/9789240051157.

The above-mentioned sources may reserve, and in some cases have expressly reserved, all rights provided by copyright law.

Where information in the Prospectus has been sourced from a third party, the Company confirms that this information has been accurately reproduced and that, to the extent the Company is aware and able to ascertain from information published by such third party, no facts have been omitted which would render the reproduced information inaccurate or misleading. Prospective investors should nevertheless consider this information carefully.

Irrespective of the assumption of responsibility for the content of this Prospectus by the Company (see section "*2.1 Responsibility for the Contents of the Prospectus*"), the Company has not independently verified the figures, market data or other information on which third parties, including CureVac, have based their studies or other information. Accordingly, prospective investors are advised to consider this information with caution and the Company makes no representation or warranty as to the accuracy, completeness or verification of any such information from third parties included in this Prospectus. Prospective investors should note that the Company's own estimates and statements of opinion and belief are not always based on studies of third parties but are rather based on the Company's assessments. These assessments, in turn, are based in part on internal market research and observations, including by our partners.

Information contained on any website or report mentioned in the Prospectus and information accessible via any of these websites, is not incorporated by reference in the Prospectus and is not part of the Prospectus; it has not been scrutinized or approved by BaFin. The web links included above for certain sources have been last retrieved on October 19, 2025, unless otherwise mentioned.

2.7 Documents Available for Inspection

For as long as the Prospectus is valid, the following documents will be available for inspection on the Company's website at https://investors.biontech.de/investors-media in the "Investors — CureVac Tender Offer — CureVac Tender Offer Materials for EEA and Swiss Investors" section:

- the Company's Articles of Association;
- the Purchase Agreement;
- the form of tender and support agreement;
- the form of deposit agreement between the Company, The Bank of New York Mellon as depositary and owners and holders of BioNTech ADSs;
- the form of letter of transmittal;
- the form of notice of withdrawal;
- the unaudited interim condensed consolidated financial statements of the Company as of and for the three and six months ended June 30, 2025, prepared in accordance with IFRS Accounting Standards as issued by the International Accounting Standards Board (IASB) applicable to interim financial reporting (IAS 34), or the "**Q2 Unaudited Interim Condensed Consolidated Financial Statements**";
- the audited consolidated financial statements of the Company as of and for the year ended December 31, 2024, prepared in accordance with IFRS Accounting Standards as issued by the International Accounting Standards Board (IASB) and adopted by the EU and the additional requirements of German commercial law pursuant to Section 315e para. 3 in conjunction with para. 1 German Commercial Code (*Handelsgesetzbuch*, or "**HGB**"), or the "**Audited Consolidated Financial Statements 2024**";
- the audited consolidated financial statements of the Company as of and for the year ended December 31, 2023, prepared in accordance with International Financial Reporting Standards as adopted by the EU and the additional requirements of German commercial law pursuant to Section 315e para. 3 in conjunction with para. 1 HGB, or the "**Audited Consolidated Financial Statements 2023**";

- the audited consolidated financial statements of the Company as of and for the year ended December 31, 2022, prepared in accordance with International Financial Reporting Standards as adopted by the EU (and together with IFRS Accounting Standards as issued by the International Accounting Standards Board (IASB) and adopted by the EU, "**IFRSs**") and the additional requirements of German commercial law pursuant to Section 315e para. 3 in conjunction with para. 1 HGB, or the "**Audited Consolidated Financial Statements 2022**", and together with the Audited Consolidated Financial Statements 2024 and the Audited Consolidated Financial Statements 2023, the "**Audited Consolidated Financial Statements**";
- the audited annual financial statements of the Company as of and for the year ended December 31, 2024 prepared in accordance with German generally accepted accounting principles of the HGB, or the "**Audited Annual Financial Statements**";
- the unaudited interim condensed consolidated financial statements of CureVac N.V. as of June 30, 2025 and December 31, 2024 and for three and six months ended June 30, 2025 and 2024, prepared in accordance with IFRS Accounting Standards as issued by the International Accounting Standards Board (IASB) applicable to interim financial reporting (IAS 34); and
- the audited consolidated financial statements of CureVac N.V. prepared in accordance with International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board (IASB) as of December 31, 2024 and December 31, 2023 and for the years ended December 31, 2024, December 31, 2023 and December 31, 2022.

The Company's future consolidated financial statements, annual financial statements and interim condensed consolidated financial statements will be available on the Company's website (https://investors.biontech.de under the "Financials" section). The Company's consolidated financial statements and annual financial statements will also be or are published in the German Company Register (*Unternehmensregister*) (http://www.unternehmensregister.de).

In addition, for as long as the Prospectus is valid, the following documents can be obtained from the SEC, through the SEC's website, http://www.sec.gov, and through the Company's website:

- the Company's Annual Report on Form 20-F for the fiscal year ended December 31, 2024, as filed with the SEC on March 10, 2025; and
- the Company's reports on Form 6-K furnished to the SEC on February 2, 2025, March 4, 2025, April 2, 2025, April 4, 2025, May 5, 2025, May 16, 2025 (as to Exhibit 99.2), May 20, 2025, June 2, 2025, June 12, 2025, June 17, 2025, July 17, 2025, July 25, 2025, August 4, 2025, August 11, 2025, August 27, 2025, September 5, 2025, and September 8, 2025 (Film Nos. 251298528 and 251300550).

The Company's future Annual Reports on Form 20-F and reports on Form 6-K can be obtained from the SEC, through the SEC's website, http://www.sec.gov, or through the Company's website.

With respect to the exchange offer, investors will be able to obtain the registration statement on Form F-4 that registers the Offer ADSs in the United States, as well as the Company's Schedule TO and CureVac's Schedule 14D-9, as may be amended from time to time, and other relevant documents filed by BioNTech and CureVac with the SEC (when they become available) at the SEC's website or, with respect to documents filed by BioNTech, through BioNTech's website.

Information contained on, or that can be accessed through, the Company's website https://investors.biontech.de/ or other websites of BioNTech and its other region-specific websites as well as the SEC's website, http://www.sec.gov, is not incorporated by reference in the Prospectus and does not form part of the Prospectus.

2.8 Note Regarding the Presentation of Financial Information

The years ended December 31, 2024, December 31, 2023 and December 31, 2022 are also referred to in the Prospectus as "**financial year 2024**" or "**year 2024**", "**financial year 2023**" or "**year 2023**" and "**financial year 2022**" or "**year 2022**", respectively. The current financial year, which will end on December 31, 2025, is also referred to as "**financial year 2025**" or "**year 2025**".

In the Prospectus, where financial information is presented as "audited" in tables, this means that, unless otherwise stated, it was taken from our audited consolidated financial statements or audited annual financial statements referred to in section "*2.7 Documents Available for Inspection*". Where financial information is presented in tables as "unaudited", it indicates that the financial information has not been taken from the audited consolidated financial statements or the audited annual financial statements mentioned above, but has been taken either from the unaudited interim condensed consolidated financial statements referred to in section "*2.7 Documents Available for Inspection*" or the Company's accounting records or internal management reporting system or has been calculated based on figures from the above-mentioned sources.

Unless otherwise indicated, all financial information presented in the tables and text in the Prospectus is shown in millions of euros (in millions €). Certain numerical data, financial information and market data in the Prospectus have been rounded in accordance with commercial rounding. Unless otherwise indicated, percentage changes and ratios in the tables or text of the Prospectus are calculated based on the underlying numbers as presented in the Prospectus, i.e., after rounding of such underlying numbers, and then rounded in accordance with commercial rounding to a whole percentage or to one digit after the decimal point. In some instances, such rounded figures and percentages may not add up to 100% or to the totals or subtotals contained in the Prospectus. Furthermore, totals and subtotals in tables may differ slightly from unrounded figures contained in the Prospectus due to rounding in accordance with commercial rounding.

Financial information presented in parentheses or preceded by a "minus" sign in the Prospectus denotes a negative amount. A dash ("—") signifies that the relevant figure is not available, while a zero ("0") signifies that the relevant figure has been rounded to zero.

2.9 Note on Business Days, Currency

References to "**business days**" in this Prospectus, are, when used in the context of the initial Offer (as it may be extended) and the Subsequent Offering Period, to business days as defined in, and calculated in accordance with, Rule 14d-1 under the Exchange Act.

All references in this Prospectus to "**€**" or "**euro**" or "**EUR**" refer to the single currency of the participating member states in the third stage of the European Economic Union pursuant to the Treaty Establishing the European Community, whereas references to "**$**" or "**U.S. dollars**" or "**USD**" refer to the currency of the United States of America and its territories.

The functional currency of the BioNTech Group is the euro, which is the presentation currency applied for the preparation of its consolidated financial statements.

2.10 Non-IFRS Measures/Alternative Performance Measures

In accordance with the European Securities and Markets Authority, or "**ESMA**", Guidelines on alternative performance measures of October 5, 2015, as amended, or the "**ESMA Guidelines**", the following sections set out information related to certain financial measures the BioNTech Group uses to measure its performance that are not defined by IFRSs and which it regards as alternative performance measures, or "**APMs**", within the meaning of the ESMA Guidelines.

We present these APMs as supplemental information (i) because they are used by our management to measure operating performance or as an auxiliary control parameter, including in presentations to our management, and as a basis for strategic planning and forecasting, and (ii) they represent measures that we believe are widely used by certain investors, securities analysts, and other parties as supplemental measures of operating and financial performance. These APMs may enhance management's and investors' understanding of our financial performance.

These APMs are not defined by IFRSs or any other generally accepted accounting principles, and should not be considered as an alternative to the historical financial information presented in accordance with IFRSs. In particular, these APMs should not be considered as alternatives to the Group's net profit / (loss) as an indicator of its performance and profitability, or as alternatives to net cash flows from/used in investing activities or as an indicator of the Group's financial strength. The APMs, as defined by us, may not be comparable to similarly titled financial measures presented by other companies due to differences in the way our APMs are calculated. Even though the APMs are used by management to assess ongoing operating performance and indebtedness, and though these types of measures are commonly used by investors, they have important limitations as analytical tools, and investors should not consider them in isolation, or as substitutes for, the analysis of our results of operations, financial position, and cash flows as reported under IFRSs.

The following sections provide the definitions, relevance of use as well as the reconciliations of our key financial performance measures we consider as APMs.

2.10.1 Sales, general and administrative expenses

We define "**sales, general and administrative expenses**" as the sum of sales and marketing expenses and general and administrative expenses, each as presented in our consolidated statements of profit or loss. We use this measure to manage the costs associated with the expansion of the sales and marketing organization to ensure the necessary infrastructure and digital capacity for future market-ready products, as well as to manage the internal administrative and coordination functions associated with the expansion of research and development, such as finance, human resources, or business development, with regard to the associated cost development.

The following table shows a reconciliation of sales and marketing expenses and general and administrative expenses to sales, general and administrative expenses for the periods indicated:

	Three months ended June 30,		Six months ended June 30,		Years ended December 31,		
	2025	2024	2025	2024	2024	2023	2022
(in millions €)	(unaudited)		(unaudited)		(audited, unless otherwise indicated)		
Sales and marketing expenses	19.7	12.9	33.4	28.5	67.9	62.7	59.5
+ general and administrative expenses[(1)]	117.7	170.9	224.6	287.9	531.1	495.0	481.7
= Sales, general and administrative expenses (unaudited)	**137.4**	**183.8**	**258.0**	**316.4**	**599.0**	**557.7**	**541.2**

(1) Adjustments to the figures related to the year ended December 31, 2022 were initially made in our Audited Consolidated Financial Statements 2023 due to change in functional allocation of general and administrative expenses and other operating expenses, see section "*9.5.1 Consolidated Statements of Profit or Loss*" and Note 7.2 to our Audited Consolidated Financial Statements 2024.

2.10.2 Capital expenditures for operating activities

We define "**capital expenditures for operating activities**" as the sum of additions to acquisition and production costs for property, plant and equipment and additions to acquisition costs for other intangible assets, excluding expenditure for non-operating activities related to business combinations, licensing and collaboration agreements (expenditures for the acquisition of operating property, plant and equipment plus expenditures for the acquisition of operating intangible assets, unless they are made as part of business combinations or licensing and collaboration agreements). These mainly include expenditures for the expansion and improvement of our research and development as well as manufacturing facilities and investments in a state-of-the-art IT infrastructure to support the Group in all digitization projects. Capital expenditures for operating activities is calculated based on additions to acquisition and production costs for property, plant and equipment plus additions to acquisition costs for other intangible assets. Hence, this excludes acquisition and production costs related to the acquisition of subsidiaries and business. It also excludes expenditure for non-operating activities related to licensing and collaboration agreements. We use this measure to ensure that our investments align with our overall objectives of, for example, enhancing research capabilities, optimizing production processes, and advancing technological infrastructure. This metric aids in monitoring and evaluating the allocation of resources towards core business operations, ultimately supporting sustainable development and competitive advantage in the industry. We also refer to capital expenditures for operating activities as "operating investments in property, plant and equipment and intangible assets".

The following table shows a reconciliation of additions to acquisition and production costs for property, plant and equipment plus additions to acquisition costs for other intangible assets to capital expenditures for operating activities for the periods indicated:

(in millions €)	Three months ended June 30,		Six months ended June 30,		Years ended December 31,		
	2025	2024	2025	2024	2024	2023	2022
	(unaudited)		(unaudited)		(audited, unless otherwise indicated)		
Additions to acquisition and production costs for property, plant and equipment[1]	35.6	88.6	84.0	147.1	287.9	249.4	329.2
+ additions to acquisition costs for other intangible assets[1]	3.2	52.7	572.4	80.5	115.2	505.0	34.2
- excluding expenditure for non-operating activities related to business combinations, licensing and collaboration agreements (unaudited)	—	(46.9)	(565.2)	(70.7)	(96.0)	(478.9)	(0.1)
= Capital expenditures for operating activities (unaudited)	**38.8**	**94.4**	**91.2**	**156.9**	**307.1**	**275.5**	**363.3**

(1) 'Additions to acquisition and production costs for property, plant and equipment' and 'additions to acquisition costs for other intangible assets' as disclosed in Notes 11 and 10 to our Audited Consolidated Financial Statements 2024, respectively. Excludes acquisition and production costs related to the acquisition of subsidiaries and business.

3 THE OFFER

The Supervisory Board and Management Board of the Company, or the "**Company's Boards**", have unanimously approved the Purchase Agreement, dated as of June 12, 2025, by and between the Company and CureVac, a public limited liability company (*naamloze vennootschap*) incorporated under the laws of the Netherlands. Pursuant to the Purchase Agreement, the Company will commence the Offer, an exchange offer to acquire all of the ordinary shares, par value €0.12 per share, of CureVac, which we refer to as the CureVac Shares. The Offer is made by the Company accordance with the terms of the Purchase Agreement and applicable rules and regulations. The Company's business address is in An der Goldgrube 12, 55131 Mainz, Germany.

In exchange for each tendered CureVac Share, the Company offers a number of Offer ADSs determined by multiplying the number of tendered CureVac Shares with the Exchange Ratio, taken to five decimals. The Exchange Ratio is determined by dividing $5.4641 by the BioNTech ADS VWAP. The BioNTech ADS VWAP in turn is determined as the volume-weighted average of the price per BioNTech ADS (as defined below), taken to four decimal places, over the period of 10 consecutive trading days ending on, and including, the fifth trading day immediately preceding the time on which the initial Offer expires (as it may be extended), and is subject to the following collar adjustment: In the event the BioNTech ADS VWAP is greater than or equal to $126.55, the Exchange Ratio will be 0.04318 and in the event the BioNTech ADS VWAP is less than or equal to $84.37, the Exchange Ratio will be 0.06476. The resulting number of Offer ADSs to be received is referred to as the Offer Consideration. The Company will only deliver whole Offer ADSs. For any fractional Offer ADSs, the tendering CureVac Shareholder will instead receive an amount in cash, without interest and less any applicable tax withholding equal to the product of (i) the fractional Offer ADS interest such shareholder otherwise would be entitled to and (ii) the BioNTech ADS VWAP, rounded to the nearest cent. The Exchange Ratio will be fixed following the close of trading on Nasdaq on the fifth trading day prior to the scheduled Expiration Time. The Company will announce the number of BioNTech ADSs to be exchanged for each CureVac Share by issuing a press release no later than 9:00 a.m. (New York City time) on the fourth trading day prior to the then-scheduled expiration time. If the Offer is extended, BioNTech will recalculate this information based on the later expected final Expiration Time and announce the new Exchange Ratio in a similar manner. For further details, see section "*3.1.2.1 Offer Consideration*", including sample calculations. During the Offer, an indicative Exchange Ratio (calculated in the manner described in this Prospectus) will be available at http://www.envisionreports.com/CureVacOffer, beginning on October 22, 2025.

The Offer consists of (i) a public offer in the United States, registered under the Securities Act pursuant to a registration statement on Form F-4 filed with the SEC, (ii) a public offer in the Federal Republic of Germany, Austria, France, Italy, the Netherlands and Spain, and (iii) a public offer in the United Kingdom for which a UK prospectus exemption document has been published for the purposes of the U.K. Prospectus Regulation.

The Offer commences on October 21, 2025, 4:00 p.m. (New York City time), and will initially remain open until 9:00 a.m. (New York City time) on December 3, 2025, unless the initial Offer is extended or terminated in accordance with the Purchase Agreement. The latest time to which the initial Offer has been extended in accordance with the terms of the Purchase Agreement is referred to as the Expiration Time. In accordance with the Purchase Agreement and subject to the satisfaction or waiver (to the extent such waiver is not prohibited by applicable law) of the offer conditions, which are summarized below and in section "*3.2.5 Conditions to Closing of the Offer*", the Company will, following the Expiration Time, accept for exchange any CureVac Shares validly tendered and not properly withdrawn (such time of acceptance for exchange being referred to as the Acceptance Time). Following the Acceptance Time, the Company will provide a subsequent offering period in accordance with Rule 14d-11 promulgated under the Exchange Act of not less than 10 business days (calculated in accordance with Rule 14d-1(g)(3) promulgated under the Exchange Act) (such period being referred to as the Subsequent Offering Period).

The Offer ADS will be registered and delivered by The Bank of New York Mellon as depositary. The Bank of New York Mellon is a banking corporation organized pursuant to the laws of the State of New York, whose registered office is at 240 Greenwich St, NY, NY 10286, United States, and was incorporated in its current form on February 9, 2007. The Bank of New York Mellon's LEI is WFLLPEPC7FZXENRZV188. The depositary's office at which the BioNTech ADSs will be administered and its principal executive office are located at 240 Greenwich Street, New York, New York 10286. The duration of The Bank of New York Mellon is unlimited. See section "*4.1.1 Form and Certification of the ADSs; Governing Law*".

For the settlement of the Offer, Computershare Trust Company, N.A. is acting as exchange agent (the "**Exchange Agent**"), and Joh. Berenberg, Gossler & Co. KG, business address Überseering 28, 22297 Hamburg, Germany, is acting as subscription agent (the "**Subscription Agent**").

The Company's obligation to acquire CureVac Shares validly tendered and not properly withdrawn pursuant to the Offer is subject to the satisfaction or waiver of various closing conditions under the Purchase Agreement, which are summarized in more detail in section "*3.2.5 Conditions to Closing of the Offer*" and as set forth in "Annex I – Offer Conditions" to the Purchase Agreement (see section "*21 The Purchase Agreement*"), including

(i) at least 80% of CureVac's issued and outstanding capital immediately prior to the Expiration Time having been validly tendered and not properly withdrawn immediately prior to the Expiration Time, which we refer to as the "Minimum Condition"; provided that the Company may reduce the Minimum Condition to 75% of CureVac's issued and outstanding capital, under certain circumstances;

(ii) certain necessary antitrust and other regulatory approvals shall have been received, or be deemed to have been received due to the expiry or termination of their relevant waiting periods or applicable statutory deadlines (and any extension thereof) and be in full force and effect;

(iii) the absence of any applicable law or order of a governmental authority prohibiting, rendering illegal, or enjoining the consummation of the offer or the other transactions contemplated by the Purchase Agreement, including the post-offer reorganization (as defined below);

(iv) the accuracy of the representations and warranties of CureVac contained in the Purchase Agreement (subject to certain materiality standards);

(v) CureVac's material compliance with its covenants contained in the Purchase Agreement;

(vi) there having not been any material adverse effect on CureVac following the execution of the Purchase Agreement, which is continuing (subject to certain exceptions);

(vii) there having not been any material adverse effect on BioNTech following the execution of the Purchase Agreement, which is continuing (subject to certain exceptions);

(viii) the adoption of resolutions at an extraordinary general meeting of CureVac convened or to be convened in connection with the Offer (the "EGM") or a subsequent EGM providing for (a) the appointment of BioNTech designees to the management board and supervisory board of CureVac, which we refer to as the CureVac Boards, to replace the resigning members effective upon the closing of the offer (as defined below), which we refer to as the "governance resolutions", and (b) the approval of the post-offer reorganization, which we refer to as the post-offer reorganization resolutions and, together with the governance resolutions, as the "required resolutions";

(ix) a certificate of CureVac having been delivered to the Company certifying as to the satisfaction of certain offer conditions;

(x) there being no stop order suspending the effectiveness of the registration statement filed with the SEC on Form F-4; and

(xi) the Purchase Agreement not having been terminated in accordance with its terms.

If the Company makes a material change in the terms of the Offer or the information concerning the Offer, or if it waives a material condition to the offer, the Company will disseminate additional Offer materials and extend the Offer by five or 10 business days, to the extent required by Rules 14d-4(d), 14d-6(c), and 14e-1 under the Exchange Act.

If such change requires the publication of a supplement to the Prospectus under Article 23 of the Prospectus Regulation, the Company will publish such supplement and investors who submitted purchase orders before the supplement is published shall have the right, pursuant to Article 23 of the Prospectus Regulation, to withdraw these offers to purchase within three working days (within the meaning of Article 2 point (t) of the Prospectus Regulation) of the publication of the supplement.

Under certain conditions, the Company and/or CureVac may terminate the Purchase Agreement and the Offer, see "*3.2.6 Termination of the Purchase Agreement*".

As promptly as practicable following the expiration of the Subsequent Offering Period (as defined below), the Company and CureVac will effectuate a corporate reorganization of CureVac and its subsidiaries, which we refer to as the "**post-offer reorganization**" and which is summarized below and in section "*3.2.2 The Post-Offer Reorganization*". The post-offer reorganization will be comprised of a Dutch legal downstream merger of CureVac into New Topco, which we refer to as the "**legal downstream merger**", followed by the sale by New Topco to the Company of all outstanding ordinary shares in the capital of CureVac's subsidiary, CureVac SE (which holds the CureVac business), which we refer to as the "**post-downstream merger share sale**", followed by the cancellation of all New Topco A Shares, which we refer to as the "**cancellation**". Pursuant to the legal downstream merger, New Topco will allot (i) New Topco A Shares to the holders of CureVac Shares that were not tendered pursuant to the initial Offer or in the subsequent offering period, which we refer to as the "**Minority Shareholders**", and (ii) class B shares in the capital of New Topco, or "**New Topco B Shares**", to the Company. Pursuant to the cancellation, New Topco will cancel all New Topco A Shares held by the Minority Shareholders against payment of the cancellation consideration consisting of BioNTech ADSs and cash in lieu of fractional BioNTech ADSs such that each holder of New Topco A Shares receives a number of BioNTech ADSs equal to the product of (a) the Offer Consideration and (b) the number of New Topco A Shares held by such holder immediately before the post-downstream merger share sale, without interest and subject to any applicable Dutch dividend withholding tax. Effective one day following the cancellation, the Company will cause New Topco to elect to be disregarded as an entity separate from the Company for U.S. federal income tax purposes, which we refer to as the "**New Topco U.S. tax election**". As a result of the foregoing, any holders of CureVac Shares who do not participate in the Offer, including the Subsequent Offering Period, will receive the same consideration as such shareholder would have received had it participated in the Offer. However, BioNTech ADSs (and cash in lieu of fractional BioNTech ADSs) received pursuant to the post-offer reorganization may be subject to Dutch dividend withholding tax at a rate of 15%, whereas no Dutch dividend withholding tax is applicable to the Offer Consideration received in exchange for the CureVac Shares tendered in the Offer, including during the Subsequent Offering Period. The Exchange Agent may withhold and sell BioNTech ADSs to satisfy any such withholding tax and any such withholding tax shall be treated for all purposes as having been paid to the relevant holder of CureVac Shares who did not participate in the Offer. See section "*3.1.2.14 The Post-Offer Reorganization and the New Topco U.S. Tax Election*".

It is expected that, following the expiration of the Subsequent Offering Period, CureVac will no longer be a publicly traded company, the listing of the CureVac Shares on Nasdaq will be terminated and the CureVac Shares will be deregistered under the Exchange Act, resulting in the cessation of CureVac's reporting obligations with respect to the CureVac Shares thereunder.

Shareholders of CureVac representing approximately 57% of CureVac Shares have entered into tender and support agreements pursuant to which they have agreed, among other things, to (i) accept the Offer in respect of CureVac Shares held by them, and (ii) vote in favor of all resolutions proposed by CureVac at the EGM (and any subsequent EGM) and against certain proposals incompatible with the Transactions, subject to the conditions and in accordance with the terms set forth therein. For details, see sections "*3.1.3 Lock-up Undertakings*" and "*3.3 The Tender and Support Agreements*".

If, at the scheduled Expiration Time, any of the offer conditions have not been satisfied or waived by the Company, the Company must extend the Offer on one or more occasions in consecutive periods of up to 10 business days each (or such other duration as may be agreed to by the Company and CureVac) in order to permit the satisfaction of such offer conditions, provided that the Company may extend the Offer for up to 20 business days if it is not reasonably likely that, within such 10-business day extension period, a required antitrust approval will be obtained, or deemed to be obtained, and/or a legal restraint will not be removed. The Company is not required to extend the Offer on more than four occasions in consecutive periods of up to 10 business days each if the sole unsatisfied condition is the Minimum Condition. The Company is not required to extend the Offer beyond March 12, 2026. If all conditions to the Offer, other than the required antitrust approvals, are satisfied or capable of being satisfied, the outside date will be automatically extended for up to two additional 90-day periods. Under the Purchase Agreement, if any of the resolutions of CureVac that are a condition to the closing of the Offer are not approved and adopted at the EGM, a subsequent EGM may be held to obtain the approval of the remaining outstanding resolutions (a "**subsequent EGM**").

We are not asking holders of CureVac Shares for a proxy and holders of CureVac Shares are requested not to send us a proxy.

The ADSs are listed on Nasdaq under the trading symbol "BNTX". On October 17, 2025, the closing price of ADSs on Nasdaq was $105.14 per ADS. CureVac Shares are listed on Nasdaq under the trading symbol "CVAC". On October 17, 2025, the closing price of CureVac Shares on Nasdaq was $5.36 per share. CureVac Shareholders are urged to obtain current market quotations for BioNTech ADSs and CureVac Shares.

Investors can contact BioNTech's information agent Georgeson LLC, 51 West 52nd Street, 6th Floor, New York, NY 10019, Call Collect (732) 353-1948, Call Toll-Free (888) 686-7195, Email: Curevacoffer@georgeson.com regarding questions on the Offer or if they need copies of this Prospectus.

3.1 Information on the Offer

3.1.1 Background of the Transactions

3.1.1.1 Background of the Offer

The following chronology summarizes the key meetings and events that led to the signing of the Purchase Agreement. The following chronology does not purport to catalog every conversation among the Company's Boards, members of BioNTech management, or BioNTech's and CureVac's representatives and other parties.

The Company's Boards have periodically evaluated and considered a variety of financial and strategic opportunities in the process of executing BioNTech's long-term strategy of creating value for its stakeholders, including potential acquisitions, divestitures, joint ventures, business combinations, and other similar strategic transactions.

In the ordinary course of BioNTech's ongoing evaluation of business opportunities within the life sciences industry, BioNTech and CureVac's management have, from time to time, engaged in discussions regarding the possibility of a transaction between the companies.

Between February 11, 2025 and February 14, 2025, representatives of BioNTech and CureVac, including James Ryan (Chief Legal and Chief Business Officer) of BioNTech and Thaminda Ramanayake (Chief Business Officer) and Marco Rau (General Counsel) of CureVac, met via videoconference to discuss the possibility of finding an amicable resolution to the ongoing litigation between BioNTech and CureVac. During these discussions on February 11, 2025, Mr. Ramanayake communicated CureVac's new management's openness to finding an amicable solution and a strategic rationale for the parties to focus on greater value creation for both shareholder bases, e.g., by considering a broad collaborative approach at the program level or a potential strategic transaction between the two companies, which better fit the business objectives of both companies. On February 14, 2025, Mr. Ryan confirmed BioNTech's openness to consider any such proposal, and a willingness to meet in person to advance further discussions.

On February 26, 2025, representatives of the Company and CureVac, including Ugur Sahin (Chief Executive Officer) and Mr. Ryan of the Company and Alexander Zehnder (Chief Executive Officer) and Messrs. Ramanayake and Rau of CureVac, met in Mainz, Germany to discuss a new, collaborative perspective for both parties. As part of those discussions, the representatives favored a strategic transaction.

Between March 3, 2025 and March 6, 2025, representatives of BioNTech and CureVac, including Messrs. Ryan, Ramanayake, and Rau, met in Norfolk, VA to continue to discuss the litigation, as part of the normal course of business.

On March 13, 2025, representatives of BioNTech and CureVac, including Helmut Jeggle (Chairman of the BioNTech Supervisory Board) and Mr. Ryan of BioNTech and Mathias Hothum (member of the supervisory board of CureVac) and Messrs. Zehnder, Ramanayake, and Rau of CureVac, met in Frankfurt am Main, Germany, to further discuss potential strategic transactions between the companies and potential transaction structures.

Between March 17, 2025 and March 24, 2025, representatives of BioNTech and CureVac, including Mr. Ryan for BioNTech and Messrs. Ramanayake and Rau for CureVac met to continue discussions of a potential transaction. Covington & Burling LLP, U.S. legal counsel to BioNTech, which we refer to as Covington, and Skadden, Arps, Slate, Meagher & Flom LLP, U.S. and German counsel to CureVac, which we refer to as Skadden, joined certain of these meetings.

On March 21, 2025, BioNTech delivered a preliminary non-binding indication of interest to CureVac, which provided for a stock-for-stock acquisition of CureVac based on an exchange ratio of between 0.0286 and 0.0263 BioNTech ADSs for each CureVac share. We refer to that as the preliminary indication of interest.

Between March 21, 2025 and April 7, 2025, representatives of BioNTech and CureVac, including Messrs. Sahin and Ryan of BioNTech and Messrs. Zehnder and Ramanayake of CureVac, discussed the preliminary indication of interest. At BioNTech's request, the CureVac representatives provided certain additional information regarding CureVac's business, including upcoming anticipated milestones and information concerning CureVac's cash position.

On April 7, 2025, BioNTech submitted a revised non-binding indication of interest to CureVac increasing the exchange ratio to 0.0476 BioNTech ADSs for each CureVac share, representing a premium over the closing price per CureVac share on April 3, 2025 ($2.84), which we refer to as the reference date, of (i) 54%, when calculated using the closing price per BioNTech ADS on the reference date ($92.01) and (ii) 83%, when calculated using the volume-weighted average closing price per BioNTech ADS for the 60-trading day period prior to and including the reference date ($109.28).

On April 11, 2025, BioNTech and CureVac entered into a confidentiality agreement, which we refer to as the confidentiality agreement, which included customary non-disclosure and standstill provisions that provided BioNTech and CureVac the ability to make confidential proposals to one another and accommodated the exchange of confidential information between the companies.

On April 15, 2025, Messrs. Ryan, Ramanayake, and Rau met to outline the anticipated due diligence process and discuss a potential timeline for the transaction.

On April 17, 2025, CureVac made available to certain BioNTech employees and its advisors a virtual data room containing certain CureVac confidential diligence materials and thereafter BioNTech continued engaging in business, financial, and legal due diligence.

On April 23, 2025, representatives of BioNTech and CureVac, including Mr. Ryan for BioNTech and Messrs. Zehnder, Ramanayake, and Rau for CureVac met in Frankfurt am Main, Germany for a management presentation, which provided an overview of CureVac's business and also involved a discussion of a potential transaction between the companies.

Between April 24, 2025 and April 26, 2025, representatives and advisors of each company's intellectual property and scientific teams met to discuss CureVac's technology and research, including CureVac's lipid-nanoparticle technology and ribonucleic acid backbone and CureVac's small scale, semi-automated, ribonucleic acid manufacturing technology for the purpose of evaluating a potential transaction. In addition, representatives of BioNTech and CureVac held meetings to discuss other areas of CureVac's business, including with respect to finance, tax, business development, research, compliance, and analytics.

On April 27, 2025, representatives of BioNTech, including Messrs. Sahin and Ryan, met with representatives of CureVac, including Messrs. Zehnder, Ramanayake, and Rau, to tour CureVac's facility in Tubingen, Germany, for the purpose of evaluating a potential transaction.

On April 29, 2025 and April 30, 2025, representatives of BioNTech and CureVac met for continued due diligence, including an expert session regarding intellectual property of CureVac.

On April 30, 2025, BioNTech and CureVac established a heightened confidentiality protocol related to ongoing due diligence efforts in connection with the potential transaction. The heightened confidentiality protocol provides certain terms governing the treatment of highly confidential information delivered by CureVac to BioNTech in the course of the due diligence process.

On May 1, 2025, CureVac and Skadden provided an initial draft of a purchase agreement to BioNTech and Covington.

On May 4, 2025, BioNTech and CureVac signed a special confidentiality agreement, which we refer to as the special confidentiality agreement, to supplement the previously signed confidentiality agreement. The special confidentiality agreement provides additional terms for specified confidential information delivered by CureVac to BioNTech during the due diligence process.

Between May 8, 2025 and June 11, 2025, representatives of BioNTech and CureVac met in-person and via videoconference to continue due diligence, including with respect to tax, intellectual property and finance matters, and discuss transaction workstreams. In addition, during those dates, representatives and advisors of each company's legal and tax teams held videoconferences to discuss the purchase agreement, including the exchange ratio and related collars, certain offer conditions, treatment of CureVac's equity awards, transaction bonuses for certain employees of CureVac, the post-offer reorganization, representations and warranties of BioNTech and CureVac, regulatory approvals, and BioNTech's termination rights as well as the scope of the desired form of tender and support agreement. During this period, numerous drafts of the purchase agreement, tender and support agreement, the company disclosure letter, and related transaction documents were exchanged and discussed between the parties and their advisors. Also during this period, on May 23, 2025, representatives of BioNTech and CureVac participated in a meeting with the German Federal Ministry for Economic Affairs and Energy to discuss the Federal German Government's support of the transaction.

On June 11, 2025, BioNTech held meetings of its management board and supervisory board, at which the members of the BioNTech boards approved, among other things, the Purchase Agreement and the Transactions.

On June 11, 2025, CureVac held meetings of its management board and supervisory board, at which the members of the CureVac boards approved, among other things, the Purchase Agreement and the Transactions.

On June 12, 2025, BioNTech and CureVac entered into the Purchase Agreement. Prior to opening of the markets in the United States on June 12, 2025, BioNTech and CureVac jointly announced the execution of the Purchase Agreement.

3.1.1.2 CureVac Background of the Offer

The Schedule 14D-9 to be filed by CureVac will include additional information on the background, deliberations, and other activities involving CureVac (see section "*2.7 Documents Available for Inspection*").

3.1.1.3 Information on the CureVac Group

CureVac, a public limited liability company (*naamloze vennootschap*) incorporated under the laws of the Netherlands, is a global biopharmaceutical company that is developing a new class of medicines based on messenger ribonucleic acid, or mRNA, which CureVac believes has the potential to improve the lives of people. mRNA plays a central role in cellular biology in the production of proteins in every living cell. CureVac's vision is to revolutionize medicine and open new avenues for developing therapies by enabling the body to make its own therapies. CureVac aims at harnessing mRNAs designed to prevent infections and to treat diseases by mimicking human biology to synthesize the desired proteins. CureVac's technology platform is based on a targeted approach to optimize mRNA constructs that encode functional proteins which either induce a desired immune response against an antigen or replace defective or missing proteins or using the cell's intrinsic translation machinery. CureVac's current product portfolio includes clinical and preclinical candidates across multiple disease indications in prophylactic vaccines, oncology, and molecular therapy.

The following table shows selected financial information of the CureVac Group for the periods indicated:

(in thousands €)[1]	Three months ended June 30,		Six months ended June 30,		Years ended December 31,		
	2025	2024	2025	2024	2024[2]	2023	2022
	(unaudited)		(unaudited)		(audited)		
Revenue	1,245	14,436	2,138	26,809	535,180	53,758	67,420
Operating profit / (loss)	(61,746)	(73,620)	(116,473)	(146,938)	177,682	(274,207)	(249,457)
Profit / (Loss) before income tax	(59,966)	(71,243)	(111,621)	(141,129)	190,881	(259,969)	(249,155)
Net profit / (loss) for the period	(59,560)	(72,543)	(111,644)	(143,096)	162,186	(260,167)	(249,029)
Net cash flow provided by / (used in) operating activities	—	—	(83,436)	(185,667)	101,851	(267,887)	(286,177)
Net cash flow provided by / (used in) investing activities	—	—	(2,066)	(12,575)	(18,444)	(55,200)	(93,499)
Net cash flow provided by / (used in) financing activities	—	—	(2,621)	(2,340)	(5,114)	230,893	63,173

(1) Financial information for the three and six months ended June 30, 2025 and 2024 has been extracted from the unaudited interim condensed consolidated financial statements of CureVac N.V. as of June 30, 2025 and December 31, 2024 and for three and six months ended June 30, 2025 and 2024, prepared in accordance with IFRS Accounting Standards as issued by the International Accounting Standards Board (IASB) applicable to interim financial reporting (IAS 34). Financial information for the years ended December 31, 2024, 2023 and 2022 has been extracted from the audited consolidated financial statements of CureVac N.V. as of December 31, 2024 and December 31, 2023 and for the years ended December 31, 2024, December 31, 2023 and December 31, 2022, prepared in accordance with International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board (IASB).

(2) CureVac's results for the year 2024 were positively affected by recognizing a one-off €400.0 million upfront payment related to a collaboration agreement entered into with GSK in 2024 as revenue as well as by the revenue recognition of €80.4 million of outstanding contract liabilities under collaboration and license agreements entered into with GSK in 2020 and 2021 as a consequence of the agreement entered into in 2024.

As of June 30, 2025, CureVac had total assets of €688,880 thousand (December 31, 2024: €802,827 thousand), total liabilities of €102,512 thousand (December 31, 2024: €106,219 thousand) and total equity of €586,367 thousand (December 31, 2024: €696,608 thousand).

For further historical financial information of CureVac which is incorporated by reference in, and forms part of, this Prospectus on a voluntary basis, see "*20 Financial Information of CureVac*".

3.1.1.3.1 Key Pipeline Candidates

The CureVac Group's current key pipeline candidates include clinical and preclinical candidates across multiple disease indications in prophylactic vaccines, oncology, and molecular therapy.

Prophylactic Vaccines

In prophylactic vaccines, CureVac's current development approach is focused on developing vaccines to prevent/treat the following infectious diseases representing a major health burden:

- *Uropathogenic E. coli bacteria (UPEC) in urinary tract infections, or "**UTIs**"*: In November 2024, CureVac announced the initiation of a new program to address UTIs and has conducted preclinical studies, which enabled it to select a lead candidate for further preclinical testing. The data from the preclinical studies, which compared favorably to recombinant protein-based vaccines, assessed two mRNA vaccine candidates encoding FimH, a highly conserved antigen facilitating UPEC adhesion to bladder epithelial cells, in mouse and rat models, according to CureVac. One of the candidates applied a unique technology that leads to the in vivo self-assembly of a FimH ferritin nanoparticle expected to result in improved immunogenicity. Both mRNA candidates induced high levels of binding antibodies in serum and urine, correlating with high serum functional antibodies, and showed strong induction of antigen-specific T-cells. Both mRNA vaccine candidates demonstrated superior immunogenicity compared to protein-based comparator vaccines. Among the two mRNA vaccine candidates, the candidate encoding the FimH ferritin nanoparticle demonstrated higher immunogenicity and has been selected for further development. CureVac expects to file an Investigational New Drug, or IND, application in the second half of 2025, aiming to initiate a Phase 1 study in the first half of 2026.

- *Influenza and COVID-19 programs, the IP related to such programs is fully licensed to GSK*: On January 5, 2024, CureVac announced positive data from a formal interim analysis of the COVID-19 Phase 2 clinical study assessing its monovalent mRNA vaccine candidate, CV0601, encoding the Omicron BA.4-5 variant and the bivalent mRNA candidate, CV0701, encoding the Omicron BA.4-5 variant as well as the original SARS-CoV-2 virus. The study was completed in August 2024.

  In seasonal influenza, CureVac announced interim data on April 4, 2024, from the Phase 2 part of its combined Phase 1/2 study of a multivalent candidate, encoding antigens matched to all four WHO-recommended flu strains. An additional Phase 2 study in seasonal influenza was initiated in May 2024 to assess targeted optimizations for improved immune responses against relevant influenza B strains. On September 12, 2024, CureVac announced that GSK has reported positive headline data from this additional Phase 2 study.

  On April 24, 2024, CureVac announced the start of a combined Phase 1/2 study in avian influenza (H5N1). On August 15, 2024, it announced the achievement of a €10 million milestone payment in the context of the successful transition of the avian influenza program to Phase 2 of the study.

  In November 2024, GSK initiated a combined Phase 1/2 study for a COVID-19/influenza combination vaccine.

Oncology

In oncology, CureVac's current development approach is focused on:

- *Novel cancer precision immunotherapies*: CureVac aims to create breakthrough treatment options for earlier settings of multiple solid tumor types and to strengthen the CureVac Group's clinical development pipeline following two complementary approaches: (1) off-the-shelf cancer precision immunotherapies targeting tumor antigens shared across different patient populations and/or tumor types and (2) fully individualized cancer precision immunotherapies based on a patient's individual tumor genomic profile.
- *Shared antigen, multi-epitope cancer precision immunotherapy candidate CVGBM*: A Phase 1 study was initiated on June 20, 2023, with CVGBM in patients with newly diagnosed surgically resected MGMT-unmethylated glioblastoma or astrocytoma with a molecular signature of glioblastoma. The study evaluates the safety and tolerability of CVGBM, a cancer precision immunotherapy candidate featuring a single unmodified mRNA encoding eight segments derived from known tumor-associated antigens with demonstrated immunogenicity in glioblastoma. On April 24, 2024, CureVac announced that the dose-escalation Part A of the study completed recruitment of all four dose levels. Following review of the safety data, the DSMB confirmed no dose limiting toxicities and gave a dose recommendation for 100 µg for the dose-confirmation Part B of the study. The dose-expansion Part B of the study started enrolment in August 2024. Enrolment was completed in the first quarter of 2025. The dose-escalation Part A of the study provided positive safety and immunogenicity data reported at scientific conferences in September and November 2024. A Part B data readout including 20 patients with a follow up period of at least 6 months and a decision on advancing the program to Phase 2 are expected in the second half of 2025.
- *Shared antigen, multi-epitope cancer precision immunotherapy candidate in squamous non-small cell lung cancer, or "**sqNSCLC**"*: In October 2024, CureVac announced the initiation of a new program with a shared antigen cancer precision immunotherapy candidate targeting sqNSCLC. The selected candidate applies its second-generation mRNA backbone and unmodified mRNA. It encodes four established antigens and four novel antigens identified in CureVac's research collaboration with MyNeo. All four novel antigens were identified outside the exome space. The IND and the clinical trial application submissions were approved by the competent regulatory authorities in the second quarter of 2025.

- *Individualized Cancer Therapy (CVICaT):* CureVac also announced the initiation of a new program with a fully individualized approach to tackle solid tumor indications. This program aims at leveraging CureVac's second-generation mRNA technology based on unmodified mRNA. Key elements include the RNA Printer® based manufacturing, a proprietary algorithm for cancer antigen identification and selection, as well as an end-to-end ("needle-to-needle") process for fast turnaround and release of the product. The mRNA constructs are expected to contain point mutations, tumor-associated antigens and novel classes of antigens expressed in the tumor of the individual patient. Clinical trial application for a Phase 1 trial is planned for the first quarter of 2026, with "first-patient-in" planned for the second half of 2026.

Molecular Therapy

In molecular therapy, CureVac's development efforts focus on delivering optimized mRNAs to stimulate the production of therapeutic proteins, including its collaboration with CRISPR Therapeutics as described below.

3.1.1.3.2 CureVac's Collaborations

The CureVac Group has entered into various collaborations, including the following agreements with respect to product candidates:

CureVac Group has partnered with GSK for the development of COVID-19 vaccine candidates based on its second-generation mRNA backbone and vaccine candidates against COVID-19, seasonal influenza and avian influenza.

In addition, the CureVac Group has partnered with The University of Texas MD Anderson to create synergies between its end-to-end capabilities for cancer antigen discovery, mRNA design, and manufacturing and The University of Texas MD Anderson's expertise in cancer antigen discovery and validation, translational drug development, and clinical research. The focus of the collaboration is on the development of differentiated cancer precision immunotherapy candidates in selected hematological and solid tumor indications with high unmet medical need.

Furthermore, the CureVac Group has partnered with the immunotherapy company myNEO NV to identify specific antigens expressed in tumors for the development of mRNA-based cancer precision immunotherapy candidates. The partnership is aimed at leveraging myNEO NV's biological datasets and integrated machine learning and bioinformatics platform to identify and validate specific tumor antigens predicted to elicit a strong immune response.

With CRISPR Therapeutics, the CureVac Group has partnered for the development of Cas9 mRNA constructs for use in gene editing therapeutics, with improved properties such as increased potency, decreased duration of expression and reduced potential for immunogenicity.

3.1.1.3.3 CureVac's Manufacturing Platform

The CureVac Group is an integrated biotech company with in-house manufacturing and process development capabilities and expertise. In recent years, it has invested significantly in building and expanding its manufacturing capabilities. The CureVac Group currently has the capacity to produce early and late-stage clinical trial mRNA material. Since 2006, it has manufactured thousands of mRNA constructs, and hundreds of mRNA batches – from high throughput and small amounts for discovery and preclinical development to GMP compliant products.

The CureVac Group operates a manufacturing facility in Tübingen, Germany, the first worldwide GMP-compliant mRNA production plant with two multi-product suites (GMP I and II), which is now used for plasmid DNA production and master cell banking (sourcing for generating working cell banks and subsequent production cell lines). In addition, it has established a third in-house production suites (GMP III) with a scalable manufacturing process for mRNA and lipid nanoparticle formulation, which was certified in December 2019. The CureVac Group's GMP III facility is intended to provide supplies for our early to late-stage clinical studies and anticipated early market supply. These manufacturing facilities are located in Tübingen, Germany. The CureVac Group has also constructed a new CureVac owned manufacturing facility, for GMP production process from starting material to formulation, the mRNA Manufacturing Center (mMC) which has obtained its first certification for formulation in January 2025. We are currently in the process of establishing a second GMPIII Scale line to flexibilize this building for clinical production of mRNA.

In addition to its GMP manufacturing capacities in its mRNA Manufacturing Center (mMC), the CureVac Group is operating an innovative downsized, integrated, and highly automated process for GMP manufacturing of mRNA vaccines and therapeutics, which it refers to as The RNA Printer®. The RNA Printer® is CureVac's automated end-to-end manufacturing solution for GMP-grade mRNA vaccines and therapeutics and an integral part of our oncology strategy. The fully synthetic production process allows it to have rapid manufacturing of products and offer reproducibility and high standardization. It includes automated cleaning and sanitization in place procedures and continuous process verification. The current setup covers DNA and RNA production for automated downstream and upstream production up to mRNA drug substance and its formulation in lipid nanoparticles.

The RNA Printer® has successfully achieved regulatory milestones by obtaining a manufacturing license for an mRNA construct in the CureVac Group's cancer precision immunotherapy development programs in November 2023 and a drug substance framework manufacturing license for greater regulatory freedom and flexibility to manufacture different mRNA vaccine candidates in December 2023. In July 2024, the CureVac Group obtained an updated manufacturing license covering new mRNA constructs in our oncology development programs. The license was granted by the regional authority in Baden-Württemberg as announced in November 2023 and April 2024.

3.1.1.3.4 CureVac's Patents

The CureVac Group has built an intellectual property portfolio in the United States, Europe, and other major geographies. As of February 28, 2025, it owned approximately 619 issued patents worldwide, including 119 issued U.S. patents, 36 issued European patents (which have been validated in various European countries resulting in a total of approximately 368 national patents in European countries) and including two European patents with unitary effect, one German national patent, and 132 issued patents in other foreign countries, 96 pending U.S. patent applications, 71 pending European patent applications, 184 pending patent applications in other foreign countries, and 16 pending PCT patent applications. The CureVac Group's patent portfolio includes claims relating to its RNA technology and manufacturing platform, its proprietary LNP technology, and oncology product candidates as well as infectious diseases product candidates such as UPEC and the product candidates that have been out licensed to GSK.

3.1.1.4 CureVac's Reasons for the Offer and the Transactions

The Schedule 14D-9 to be filed by CureVac will include a discussion of the reasons for the recommendation of the CureVac Boards with respect to the Offer (see section "*2.7 Documents Available for Inspection*").

3.1.1.5 BioNTech's Reasons for the Offer and the Transactions

In evaluating the Purchase Agreement and related Offer, the Company's Boards consulted with their legal advisors and, after consideration, unanimously (i) determined that the Purchase Agreement, the Offer, the post-offer reorganization, and the other Transactions are in the best interests of BioNTech and (ii) approved the execution, delivery, and performance of the Purchase Agreement and the consummation of the Offer, the post-offer reorganization, and the other Transactions.

In deciding to approve the Purchase Agreement and the consummation of the Offer, the post-offer reorganization, and the other transactions, the Company's Boards considered various factors that they viewed as supporting their decision, including the following material factors described below:

- *The Transactions Deliver Key Strategic Benefits*. The Company's boards expect that the Transactions will provide a number of significant potential strategic benefits, including the following:
  - Furthering BioNTech's mRNA Strategy. The acquisition will support global execution of BioNTech's strategy to develop, manufacture, and commercialize mRNA-based medicines in oncology.
  - Expanding BioNTech Capabilities. The acquisition is expected to expand BioNTech's capabilities to research, develop, manufacture, and commercialize mRNA-based medicines as a pan-tumor technology platform in oncology. As a result of the acquisition, BioNTech will obtain complementary capabilities and proprietary technologies in target discovery, production, mRNA design, and delivery formulations. The acquisition complements BioNTech's recent acquisitions in its other key pillars in oncology, including immunomodulators like bispecific antibodies and targeted therapies like antibody-drug conjugates.

- *Familiarity with Businesses*. The Company's Boards considered their and the BioNTech management team's knowledge of the business, operations, financial condition, earnings, and prospects of CureVac, taking into account the results of BioNTech's due diligence review of CureVac, as well as their knowledge of the current and prospective environment in which BioNTech and CureVac operate, including economic and market conditions.
- *Likelihood of Consummation*. The Company's Boards considered both parties' commitment to complete the transactions as reflected in their respective obligations under the terms of the Purchase Agreement.
- *The Terms of the Purchase Agreement*. The Company's Boards considered the various terms and provisions of the Purchase Agreement, including (i) CureVac's obligation to make a payment of $43.75 million to BioNTech under certain circumstances, including in the event that CureVac were to terminate the Purchase Agreement in order to accept a superior proposal, (ii) the conditions to the parties' obligations to complete the transactions and the limited ability of either party to terminate, and (iii) the ability of BioNTech to enforce the terms of the Purchase Agreement.

The Company's Boards also considered a variety of risks and other potentially negative factors concerning the Purchase Agreement, the Offer, and the other Transactions, including the following material factors:

- the risk of diverting management focus and resources from operational matters and other strategic opportunities while working to implement the Offer and related Transactions;
- the risk that, notwithstanding the likelihood of the Offer and related Transactions being completed, the Transactions may not be completed, or that completion may be unduly delayed, including the effect of the pendency of the Transactions and the effect such failure to be completed may have on the trading price of BioNTech ADSs and BioNTech's operating results, particularly in light of the costs incurred in connection with the Transactions;
- the risk that, under the terms of the Purchase Agreement, the Company must pay to CureVac a termination fee of $62.5 million if the Purchase Agreement is terminated under certain limited circumstances relating to not receiving antitrust approvals;
- the risk that, under the terms of the Purchase Agreement, CureVac has the ability, under certain specified circumstances, to consider an alternative acquisition proposal if the CureVac Boards determine it constitutes or would reasonably be expected to lead to a superior proposal and the CureVac Boards have the ability, under certain specified circumstances, to make a change in recommendation and to terminate the Purchase Agreement following such change in recommendation in order to enter into an agreement with respect to a superior proposal upon payment of a $43.75 million termination fee to the Company;
- the risk that the anticipated strategic and financial benefits of the Offer and related Transactions may not be realized;
- the risk that the benefits to the holders of the combined company's securities expected to result from the Transactions might not be fully realized or not realized at all;
- the risk of other potential difficulties in integrating the two companies and their respective operations;
- the substantial costs to be incurred in connection with the Transactions, including the transaction expenses arising from the Offer and the related Transactions and the costs of integrating the businesses of BioNTech and CureVac; and
- other matters described in sections "*1.8 Risks Related to BioNTech Following the Transactions*" and "*1.9 Risks Related to the Offer*" and "*2.5 Forward-Looking Statements*".

This discussion of the foregoing information and material factors considered by the Company's Boards in reaching their conclusions and recommendations is not intended to be exhaustive and is not provided in any specific order or ranking. In view of the wide variety of factors considered by the Company's Boards in evaluating the Purchase Agreement and the Transactions, including the issuance of BioNTech

ADSs in connection with the Offer and other Transactions, and the complexity of these matters, the Company's Boards did not find it practicable to, and did not attempt to, quantify, rank, or otherwise assign relative weight to those factors. In addition, different members of the Company's Boards may have given different weight to different factors. The Company's Boards did not reach any specific conclusion with respect to any of the factors considered and instead conducted an overall review of such factors and determined that, in the aggregate, the potential benefits considered outweighed the potential risks or possible negative consequences of approving the Purchase Agreement, the Offer, and the other Transactions.

Prior to the announcement of the Offer on June 12, 2025, BioNTech reviewed certain CureVac information and had access to CureVac's senior management team for the purposes of conducting a confirmatory due diligence exercise. This has enabled BioNTech to develop a preliminary strategy for the combined business, however it has not yet had access to sufficiently detailed information to formulate plans or intentions regarding the impact of the acquisition on CureVac.

If the acquisition completes, BioNTech plans to undertake a detailed strategic review of the CureVac business, including in relation to its assets, strategies and operations, in order to determine how best to realize the benefits of a combination of the two businesses and to formulate an appropriate detailed integration plan which aligns with BioNTech's ongoing group-wide transformation. This strategic review and detailed integration planning will only be completed and implemented following completion of the acquisition.

BioNTech recognizes the importance of research and development in CureVac's business and intends to maintain investment in research and development in Germany.

Employees and employment rights

BioNTech plans to comply, following completion of the acquisition, with CureVac's current consultation obligations towards existing employee representative bodies at CureVac (including works councils or other bodies) and existing works agreements. BioNTech will comply with the current legally binding written and unwritten terms and conditions of employment, including existing employee benefits and pension entitlements, collective agreements and legally binding individual contracts with CureVac employees. Any future changes proposed to be made to existing employment contract provisions will be implemented in accordance with applicable law.

Completion of the aforementioned strategic review and an assessment of potential alterations to the structure and/or management, may lead to changes in the composition and/or functions of central, divisional or local management. Specific proposals have not been formulated yet. BioNTech will only implement any proposal once the detailed review and integration planning referred to above has been completed and discussions have been undertaken with the stakeholders concerned.

Headquarters and locations

The headquarters of the combined business will remain in Mainz, Germany. On completion of the acquisition, BioNTech will maintain a CureVac presence in Tübingen, Germany including its state-of-the-art research and manufacturing site located in the city.

BioNTech intends to leverage the combined businesses' global presence to consolidate minor administrative offices where feasible in order to reduce property expenses, and to enable colleagues to work more closely together.

Disinvestments

BioNTech does not currently have any plans for any material disinvestments such as material sales of subsidiaries or any major lines of business after closing of the Transactions. BioNTech does not currently have any plans to cancel any future investments or disinvestments previously announced.

This explanation of the reasoning of the Company's Boards and all other information presented in this section is forward-looking in nature and, therefore, should be read in light of the factors discussed in section "*2.5 Forward-Looking Statements*".

3.1.1.6 Certain Financial Projections Provided by CureVac to BioNTech

CureVac shared its management's best estimates, as at the relevant time, of potential program outcomes and related financial forecasts in connection with BioNTech's consideration of the Transactions. In this regard, CureVac's management provided to BioNTech certain unaudited prospective financial information regarding three programs:

- addressing uropathogenic *Escherichia coli* in urinary tract infections, which we refer to as the UPEC projections;
- investigational cancer precision immunotherapy CVGBM for surgically resected glioblastoma, which we refer to as the CVGBM projections; and
- investigational cancer precision immunotherapy for squamous non-small cell lung cancer, which we refer to as the sqNSCLC projections.

At the time these projections were provided by CureVac to BioNTech, these programs were preclinical, Phase 1 ready (with no patients enrolled), and preclinical (with an Investigational New Drug application and Clinical Trial Application submitted in the first quarter of 2025), respectively.

In addition to the above, CureVac's management provided to BioNTech:

- certain unaudited prospective financial information regarding the Development and Intellectual Property Agreement between CureVac AG and Tesla Grohmann Automation GmbH, dated November 24, 2015, which we refer to as the Tesla projections and, together with the UPEC projections, the CVGBM projections, and the sqNSCLC projections, as the CureVac projections; and
- certain unaudited prospective financial information from a third-party analyst report regarding the Development and License Agreement between CureVac AG and CRISPR Therapeutics AG, dated November 9, 2017, as amended.

Using the above information, together with certain historical financial information as of December 31, 2024 and assumed proceeds from ongoing intellectual property litigation of $832.5 million, CureVac management calculated CureVac's total assets to be approximately $2.1 billion. Such assumptions with regard to intellectual property litigation were prepared prior to the settlement arrangements, see section "*11.12.1.4 Settlement Arrangements with GSK and CureVac*".

The prospective financial information summarized below is included for the purpose of providing certain non-public information that was furnished by CureVac to BioNTech in connection with the Transactions.

The inclusion of the CureVac projections herein should not be regarded as an indication that CureVac, BioNTech, or their respective affiliates, officers, directors, advisors, or other representatives considered or consider the projections to be necessarily predictive of actual future events, and this information should not be relied upon as such. While presented with numerical specificity, the CureVac projections were based on numerous variables and assumptions known to CureVac at the time of preparation. These variables and assumptions are inherently uncertain and many are beyond the control of CureVac or BioNTech. Assumptions include the development and commercialization of mRNA-based oncology and infectious disease product candidates, the probability of technical and regulatory success, clinical development timelines, product launch timing, certain market conditions, including pricing, market size, market growth, market share, the competitive landscape, cost structures as well as anticipated strategic partnerships, potential litigation outcomes (as a source of potential project funding) and other matters specific to CureVac's business that are inherently subjective. The CureVac projections also reflect assumptions regarding CureVac's research and development pipeline and anticipated synergies from ongoing and future collaborations. Uncertainties include, but are not limited to (i) litigation risks (for example, the outcome of jury trials in the United States, the appeals process, associated costs and time until damages (if any) may be paid), (ii) an evolving standard of care which increases risks of pipeline projects, (iii) the geo-political environment in the United States, Europe and other jurisdictions (e.g., defunding of mRNA research and cancellation of mRNA vaccine contracts in the United States), and (iv) the development of products by collaborators and competitors. The CureVac projections do not give effect to the impact of the Transactions, the expenses that may be incurred in connection with consummating the Transactions, the effect and cost of operating as a combined company, or any business or strategic decisions that may be taken as a result of the Transactions.

UPEC Projections

The following tables present a summary of the UPEC projections for fiscal years 2026 through 2043. The UPEC projections assume that Phase 1 studies occur in 2026 and 2027, Phase 2 studies occur in 2028 through 2030, Phase 3 studies occur in 2031 through 2033, and a New Drug Application is submitted in 2034.

	Year Ending December 31,								
(in millions $)	**2026P**	**2027P**	**2028P**	**2029P**	**2030P**	**2031P**	**2032P**	**2033P**	**2034P**
	(unaudited)								
Revenue	—	—	—	—	—	—	—	—	—
Research & development expense	(13)	(13)	(20)	(20)	(20)	(117)	(117)	(117)	(3)
Adjusted EBIT	(13)	(13)	(20)	(20)	(20)	(117)	(117)	(117)	(3)
Adjusted Free Cash Flow	(13)	(13)	(20)	(20)	(20)	(117)	(117)	(117)	(3)

	Year Ending December 31,								
(in millions $)	**2035P**	**2036P**	**2037P**	**2038P**	**2039P**	**2040P**	**2041P**	**2042P**	**2043P**
	(unaudited)								
Revenue	324	702	1,141	1,650	2,235	2,423	2,626	2,847	3,086
Research & development expense	—	—	—	—	—	—	—	—	—
Adjusted EBIT	155	337	548	792	1,073	1,163	1,261	1,367	1,481
Adjusted Free Cash Flow	109	236	383	554	751	814	882	957	1,037

CVGBM Projections

The following tables present a summary of the CVGBM projections for fiscal years 2025 through 2044. The CVGBM projections assume that Phase 1 studies conclude in 2025, Phase 2 studies occur in 2026 through 2029, Phase 3 studies occur in 2030 through 2032, and a New Drug Application is submitted in 2033.

	Year Ending December 31,									
(in millions $)	**2025P**	**2026P**	**2027P**	**2028P**	**2029P**	**2030P**	**2031P**	**2032P**	**2033P**	**2034P**
	(unaudited)									
Revenue	—	—	—	—	—	—	—	—	—	313
Research & development expense	(13)	(15)	(15)	(15)	(15)	(117)	(117)	(117)	(3)	—
Adjusted EBIT	(13)	(15)	(15)	(15)	(15)	(117)	(117)	(117)	(3)	(225)
Adjusted Free Cash Flow	(13)	(15)	(15)	(15)	(15)	(117)	(117)	(117)	(3)	(225)

	Year Ending December 31,									
(in millions $)	**2035P**	**2036P**	**2037P**	**2038P**	**2039P**	**2040P**	**2041P**	**2042P**	**2043P**	**2044P**
	(unaudited)									
Revenue	668	1,071	1,525	2,035	2,174	2,322	2,480	2,648	2,828	3,021
Research & development expense	—	—	—	—	—	—	—	—	—	—
Adjusted EBIT	52	366	720	1,118	1,226	1,342	1,465	1,596	1,737	1,887
Adjusted Free Cash Flow	36	256	504	783	858	939	1,025	1,117	1,216	1,321

sqNSCLC Projections

The following tables present a summary of the sqNSCLC projections for fiscal years 2026 through 2045. The sqNSCLC projections assume that Phase 1 studies occur in 2026 and 2027, Phase 2 studies occur in 2028 through 2030, Phase 3 studies occur in 2031 through 2033, and a New Drug Application is submitted in 2034.

	Year Ending December 31,									
(in millions $)	2026P	2027P	2028P	2029P	2030P	2031P	2032P	2033P	2034P	2035P
	(unaudited)									
Revenue	—	—	—	—	—	—	—	—	—	493
Research & development expense	(13)	(13)	(20)	(20)	(20)	(117)	(117)	(117)	(3)	—
Adjusted EBIT	(13)	(13)	(20)	(20)	(20)	(117)	(117)	(117)	(3)	(355)
Adjusted Free Cash Flow	(13)	(13)	(20)	(20)	(20)	(117)	(117)	(117)	(3)	(355)

	Year Ending December 31,									
(in millions $)	2036P	2037P	2038P	2039P	2040P	2041P	2042P	2043P	2044P	2045P
	(unaudited)									
Revenue	1,043	1,655	2,335	3,088	3,268	3,457	3,658	3,870	4,094	4,332
Research & development expense	—	—	—	—	—	—	—	—	—	—
Adjusted EBIT	74	552	1,082	1,670	1,809	1,957	2,113	2,279	2,454	2,639
Adjusted Free Cash Flow	52	386	757	1,169	1,266	1,370	1,479	1,595	1,718	1,847

Tesla Projections

The following table presents a summary of the Tesla projections for fiscal years 2025 through 2035. The below is subject to certain assumptions, including 100 new customers per year and a 30% tax rate.

	Year Ending December 31,										
(in millions $)	2025P	2026P	2027P	2028P	2029P	2030P	2031P	2032P	2033P	2034P	2035P
	(unaudited)										
Milestone payment revenue	10	10	20	20	20	20	20	20	20	10	20
Royalties revenue	—	—	—	20	40	60	80	100	120	140	160
Adjusted Free Cash Flow	7	7	14	28	42	56	70	84	98	105	126

The CureVac projections were prepared by CureVac's management for internal use and strategic planning purposes and were not prepared with a view toward public disclosure, nor were they prepared with a view toward compliance with generally accepted accounting principles ("**GAAP**"), IFRSs, CureVac's accounting policies or the published guidelines of the SEC or ESMA regarding projections and forward-looking statements or the guidelines established by the American Institute of Certified Public Accountants or the Institute of Public Auditors in Germany (*Institut der Wirtschaftsprüfer, IDW*), as applicable, for preparation and presentation of prospective financial information. The preparation of such projections was a part of a semi-annual internal planning process, which generally utilizes internal resources and, when needed in the judgment of CureVac management, external consultants.

The CureVac projections as set forth above regarding Adjusted EBIT and Adjusted Free Cash Flow are measures of performance not defined by IFRSs which are regarded as APMs within the meaning of the ESMA Guidelines. They should not be considered as an alternative to the historical financial information presented by CureVac in accordance with IFRS Accounting Standards as issued by the International Accounting Standards Board (IASB), which is incorporated by reference in, and forms part of, this Prospectus on a voluntary basis, see "*20 Financial Information of CureVac*". In particular, these APMs should not be considered as alternatives to the CureVac Group's operating profit / (loss) or net profit / (loss) as an indicator of its performance and profitability, or as alternatives to net cash flows provided by / (used in) operating activities, each as presented by CureVac. For further information on the limitations on APMs, see also section "*2.10 Non-IFRS Measures/Alternative Performance Measures*".

CureVac defines these APMs as follows:

- *Adjusted EBIT*: Adjusted EBIT refers to earnings before interest and taxes. It represents operating results before deduction of interest and taxes and thus serves as a measure of operational performance independent of capital structure and tax influences. Adjusted EBIT is calculated by removing non-recurring, irregular, or non-operational items from IFRS-EBIT reflected in compliant financial filings. Operating expenses include cost of goods sold (COGS), research and development expenses (R&D), product license cost, product launch cost, marketing and sales cost (M&S), selling, general, and administrative expenses (SG&A), royalties, and other operating income.

  CureVac discloses Adjusted EBIT as an APM, as CureVac believes Adjusted EBIT is a meaningful measure to evaluate the performance of the CureVac Group's business activities as it relates to the UPEC program, the CVGBM program and the sqNSCLC program. Adjusted EBIT is used by CureVac's management as a financial measure to assess the operating performance of the programs disclosed in this section.

- *Adjusted Free Cash Flow*: Adjusted Free Cash Flow refers to the cash inflow available after deducting operating expenses (adjusted by depreciation and amortization expenses), and customary non-cash expenses such as the changes in net working capital and capital expenditures (Capex). Adjusted Free Cash Flow is calculated by removing non-recurring, irregular, or non-operational items that are typically reflected in compliant financial filings.

  CureVac believes that the presentation of Adjusted Free Cash Flow provides meaningful information to investors because it is a measure of cash generated by the CureVac Group's operations after deducting cash outflows for operating expenses (adjusted by depreciation and amortization expenses), and customary non-cash expenses such as the changes in net working capital and capital expenditures (Capex) with respect to the UPEC program, the CVGBM program and the sqNSCLC program as well as the performance of the Development and Intellectual Property Agreement between CureVac AG and Tesla Grohmann Automation GmbH, dated November 24, 2015. Therefore, the measure gives an indication of the cash generating ability of the CureVac Group's business.

BioNTech does not currently have sufficient data to accurately estimate the variables and individual adjustments for a reconciliation of such items, including details and sources for the underlying assumptions related to financial forecasts, program outcomes and/or Adjusted EBIT and Adjusted Free Cash Flow calculations. BioNTech is unable to quantify the probable significance of these items at this time. The adjustments required for any reconciliation of the forward-looking non-IFRS and non-GAAP financial measures or APMs cannot be accurately forecasted by BioNTech. A reconciliation of a forward-looking APM is not required under the ESMA Guidelines, and therefore reconciliations have not been included. The CureVac projections have not been prepared in accordance with CureVac's accounting policies applied in its consolidated financial statements prepared under IFRS Accounting Standards as issued by the International Accounting Standards Board (IASB).

3.1.1.7 Directors and Management of BioNTech and CureVac or New Topco, as Applicable, Following the Closing of the Offer

The composition of the Company's Boards will not change as a result of the Transactions. During the last five years, no member of the Company's Boards has been (i) convicted in a criminal proceeding (excluding traffic violations and similar misdemeanors) or (ii) a party to any judicial or administrative proceeding (except for matters that were dismissed without sanction or settlement) that resulted in a judgment, decree, or final order enjoining such person from future violations of, or prohibiting activities subject to, U.S. federal or state securities laws, or a finding of any violation of U.S. federal or state securities laws.

From the effectuation of the closing of the Offer through the completion of the legal downstream merger, (i) the management board of CureVac will be comprised of individuals who will be designated in writing by the Company, in its sole discretion, as soon as reasonably practicable following the commencement of the offer and prior to convening the EGM and (ii) the supervisory board of CureVac will consist of at least five members, at least three of whom have been designated by the Company, and two of whom are designated as supervisory directors by CureVac and BioNTech by mutual written agreement and who will at all times be independent from the Company, dievini and Kreditanstalt für Wiederaufbau ("**KfW**") and will at all times qualify as independent in accordance with the independence standards set forth in the Dutch Corporate Governance Code ("**DCGC**").

From the merger effective time through the cancellation, the management board and supervisory board of New Topco will be as agreed between the Company and CureVac.

3.1.2 The Offer

The following is a description of the material aspects of the Offer. While the Company believes that the following description covers the material terms of the Offer, the description may not contain all of the information that is important to CureVac Shareholders. The Company encourages CureVac Shareholders to carefully read this entire Prospectus, including the Purchase Agreement and the other documents included in this Prospectus, for a more complete understanding of the Offer.

3.1.2.1 Offer Consideration

Pursuant to the Purchase Agreement, the Company will commence the Offer to acquire all of the issued CureVac Shares. In exchange for each tendered CureVac Share, the Company offers a number of Offer ADSs determined by multiplying the number of tendered CureVac Shares with the Exchange Ratio, taken to five decimals. The Exchange Ratio is determined by dividing $5.4641 by the BioNTech ADS VWAP. The BioNTech ADS VWAP in turn is determined as the volume-weighted average of the price per BioNTech ADS (as defined below), taken to four decimal places, over the period of 10 consecutive trading days ending on, and including, the fifth trading day immediately preceding the time on which the initial Offer expires (as it may be extended), and is subject to the following collar adjustment: In the event the BioNTech ADS VWAP is greater than or equal to $126.55, the Exchange Ratio will be 0.04318 and in the event the BioNTech ADS VWAP is less than or equal to $84.37, the Exchange Ratio will be 0.06476.

From June 12, 2025, when BioNTech and CureVac announced the execution of the Purchase Agreement, through October 17, 2025, the BioNTech ADS VWAP was not greater than or equal to $126.55 or less than or equal to $84.37. Accordingly, the Offer Consideration at all times during that period represented a market value of $5.4641. However, as shown below, were the BioNTech ADS VWAP to, for example, drop to $80 or go above $130 on the applicable calculation date, the market value of the Offer Consideration could be greater than or less than, respectively, $5.4641.

Accordingly, as of the date of this Prospectus, CureVac Shareholders will not know, or be able to calculate, the exact market value of the consideration that they will receive upon closing of the Offer or completion of the post-offer reorganization.

The Company will only deliver whole Offer ADSs in the Offer. To the extent a CureVac Shareholder otherwise would be entitled to a fractional Offer ADS as a result of the application of the Exchange Ratio, such shareholder will instead receive an amount in cash, without interest and less any applicable tax withholding, equal to the product of (i) the fractional Offer ADS interest such shareholder otherwise would be entitled to and (ii) the BioNTech ADS VWAP, rounded to the nearest cent.

3.1.2.2 Sample Calculation of the Offer Consideration

The following table provides, for illustrative purposes only, sample calculations of the Offer Consideration on the basis of the formula described above assuming various BioNTech ADS VWAPs, and assuming 100 CureVac Shares are being tendered. The actual BioNTech ADS VWAP used to calculate the Offer Consideration may be higher or lower than the examples provided below and will be subject to the collar adjustment described above.

BioNTech ADS VWAP	Exchange Ratio (After Collar Adjustment)	Number of BioNTech ADSs Received	Cash Paid In Lieu of Fractional BioNTech ADS
$80.00 (below collar)	0.06476x	6	$ 38.08
$90	0.06071x	6	$ 6.39
$100	0.05464x	5	$ 46.40
$110	0.04967x	4	$ 106.37
$120	0.04553x	4	$ 66.36
$130 (above collar)	0.04318x	4	$ 41.34

3.1.2.3 Announcement of Final Exchange Ratio

The Exchange Ratio will be fixed following the close of trading on Nasdaq on the fifth trading day prior to the scheduled expiration date of the Offer (i.e., the date of the Expiration Time). In accordance with Article 17(2) of the Prospectus Regulation, the Company will announce the number of Offer ADSs to be exchanged for each CureVac Share by issuing a press release no later than 9:00 a.m. (New York City time) on the fourth trading day prior to the then-scheduled Expiration Time.

For example, the Company will announce, by issuing a press release no later than 9:00 a.m. (New York City time) on November 26, 2025, the number of Offer ADSs to be received in exchange for each CureVac Share if the Offer expires at 9:00 a.m. (New York City time) on December 3, 2025. If the initial Offer is extended, the Company will recalculate this information based on the later expected final Expiration Time and announce the new Exchange Ratio in a similar manner.

During the Offer, an indicative Exchange Ratio (calculated in the manner described in this Prospectus) will be available at http://www.envisionreports.com/CureVacOffer, beginning on October 22, 2025.

3.1.2.4 Comparative Per Share Market Price Information

The BioNTech ADSs (and the Offer ADSs will be) and the CureVac Shares are both traded on Nasdaq under the symbols “BNTX” and “CVAC”, respectively. The following table presents the high and low sales price per BioNTech ADS and CureVac Share on June 11, 2025, the last full trading day before public announcement that BioNTech and CureVac had entered into the Purchase Agreement, and October 17, 2025, the last practicable trading day before publication of the Prospectus. In addition, for illustrative purposes, the following table provides the equivalent high, low, and closing price per CureVac Share on each of the specified dates, assuming the presented high, low and close price of the BioNTech ADSs were the BioNTech ADS VWAP on the relevant calculation date. Because all prices shown are within the collar, the equivalent value per share does not fluctuate. For additional information on the operation of the collar adjustment, see section “*3.1.2.1 Offer Consideration*”.

	BioNTech ADSs			CureVac Ordinary Shares			CureVac Equivalent Per Share		
Date	High	Low	Close	High	Low	Close	High	Low	Close
June 11, 2025	$108.36	$105.25	$105.46	$4.28	$4.07	$ 4.07	$5.46	$5.46	$5.46
October 17, 2025	$105.58	$103.10	$105.14	$5.38	$5.34	$ 5.36	$5.46	$5.46	$5.46

3.1.2.5 Comparative Share Prices and Dividends

The following table sets forth, for the periods indicated, the high and low sale prices of BioNTech ADSs as reported by Nasdaq and the high and low sale prices per share of CureVac Shares as reported by Nasdaq. As of October 17, 2025, there were 101,103,358 BioNTech ADSs issued and outstanding and as of the date of the Prospectus, there were 225,181,647 CureVac Shares issued and outstanding. The Company has not paid dividends on the Company's ordinary shares, and CureVac has not paid dividends on the CureVac Shares, in each case during the past two years:

	BioNTech Price Per BioNTech ADS		CureVac Price Per Ordinary Share	
	High	Low	High	Low
2023				
First Quarter	$ 156.28	$ 119.98	$ 12.48	$ 6.32
Second Quarter	$ 131.52	$ 100.08	$ 12.36	$ 6.59
Third Quarter	$ 125.83	$ 95.50	$ 10.87	$ 5.47
Fourth Quarter	$ 113.04	$ 88.00	$ 6.93	$ 3.41
2024				
First Quarter	$ 114.70	$ 85.21	$ 4.46	$ 2.76
Second Quarter	$ 104.33	$ 80.02	$ 5.28	$ 2.22
Third Quarter	$ 131.49	$ 76.53	$ 3.87	$ 2.70
Fourth Quarter	$ 125.40	$ 94.31	$ 3.51	$ 2.37
2025				
First Quarter	$ 129.27	$ 85.55	$ 5.00	$ 2.72
Second Quarter	$ 122.90	$ 81.20	$ 5.72	$ 2.47
Third Quarter	$ 115.54	$ 90.12	$ 5.54	$ 5.32

3.1.2.6 Treatment of CureVac Equity Awards

3.1.2.6.1 CureVac VSOP Awards

CureVac will work together with certain existing shareholders, which we refer to as the contributing shareholders, to cause the beneficiaries under CureVac's outstanding virtual stock option awards, which we refer to as the "**CureVac VSOP awards**", to enter into an amendment to the contractual terms of the CureVac VSOP awards providing for (i) the contributing shareholders to transfer the CureVac Shares required to settle the CureVac VSOP awards to the respective beneficiaries' accounts established in connection with CureVac's equity incentive plans, (ii) the beneficiaries to tender the respective CureVac Shares in order to receive the Offer Consideration for such CureVac Shares (in each case less any applicable tax withholdings) so that, as a consequence of (i) and (ii), any outstanding claims under the CureVac VSOP awards would be settled.

3.1.2.6.2 CureVac PSUs

At the closing of the Offer, each of CureVac's performance stock units, which we refer to as a "**CureVac PSU**", that is outstanding as of immediately prior to the closing of the Offer will become fully vested solely with respect to any time-vesting conditions applicable thereto and (i) if the performance-vesting conditions applicable to such CureVac PSU have been satisfied in full immediately prior to the closing of the offer, will be settled in cash (without interest and subject to any applicable tax withholdings) in an amount equal to the product obtained by multiplying (a) the CureVac value per share by (b) the total number of CureVac Shares subject to such CureVac PSU as of immediately prior to the closing of the offer or (ii) if the performance-vesting conditions applicable to such CureVac PSU have not been satisfied in full immediately prior to the closing of the Offer, will be cancelled for no consideration.

3.1.2.6.3 CureVac RSUs

At the closing of the Offer, each of CureVac's restricted stock units, which we refer to as a "**CureVac RSU**", that is outstanding as of immediately prior to the closing of the Offer will become fully vested and will be settled in cash (without interest and subject to any applicable tax withholdings) in an amount equal to the product obtained by multiplying (i) the CureVac value per share by (ii) the total number of CureVac Shares subject to such CureVac RSU as of immediately prior to the closing of the Offer.

3.1.2.6.4 CureVac Options

At the closing of the Offer, each of CureVac's options to purchase, which we refer to as a "**CureVac option**", that is outstanding as of immediately prior to the closing of the Offer will become fully vested and, if the per share exercise price of such CureVac option is less than the CureVac value per share, then such CureVac option will be settled in cash (without interest and subject to any applicable tax withholdings) in an amount equal to the product obtained by multiplying (i) the excess of the CureVac value per share over the per share exercise price applicable to such CureVac option and (ii) the total number of CureVac Shares subject to such CureVac option. Any other CureVac option will be cancelled for no consideration at the merger effective time.

3.1.2.7 Procedures for Tendering

Upon commencement of the Offer, BioNTech will mail, or cause to be mailed, the letter of transmittal (see section "*2.7 Documents Available for Inspection*"), to all CureVac Shareholders, in accordance with Rule 14d-4 under the Exchange Act. If CureVac Shares are held through a broker, dealer, commercial bank, trust company, or other nominee, such person may receive such materials and may relay them to the shareholder in accordance with the arrangements governing that relationship.

For holders of CureVac Shares to validly tender their CureVac Shares pursuant to the Offer, prior to the expiration of the Offer:

- If CureVac Shares are directly registered in the shareholder's own name in CureVac's shareholders register, including if the shareholder is a record holder and holds shares in book-entry form on the books of CureVac's transfer agent, the following must be received by the Exchange Agent at one of its addresses set forth in the letter of transmittal prior to the Expiration Time: (i) the letter of transmittal, properly completed and duly executed, and (ii) any other documents required by the letter of transmittal.
- If CureVac Shares are held in "street" name and are being tendered by book-entry transfer into an account maintained at The Depository Trust Company, or "**DTC**", the following must be received by the Exchange Agent, at one of its addresses set forth in the letter of transmittal prior to the Expiration Time: (i) the letter of transmittal, properly completed and duly executed, or an agent's message; (ii) a book-entry confirmation from DTC; and (iii) any other required documents.
- If holders of CureVac Shares hold their shares through a broker, dealer, commercial bank, trust company, or other nominee, they must contact their broker, dealer, commercial bank, trust company, or other nominee and give instructions that their shares be tendered.

The term "agent's message" means a message transmitted by DTC to, and received by, the Exchange Agent and forming a part of a book-entry confirmation, which states that DTC has received an express acknowledgment from the DTC participant tendering the CureVac Shares that are the subject of such book-entry confirmation, that such participant has received and agrees to be bound by the terms of the letter of transmittal and that the Company may enforce that agreement against such participant.

The Exchange Agent will establish an account with respect to the CureVac Shares at DTC for purposes of the Offer, and any eligible institution that is a participant in DTC may make book-entry delivery of the CureVac Shares by causing DTC to transfer such shares into the Exchange Agent's account at DTC in accordance with DTC's procedure for the transfer. Delivery of documents to DTC does not constitute delivery to the Exchange Agent.

Do not send letters of transmittal to the Company or CureVac. Letters of transmittal for CureVac Shares should be sent to the Exchange Agent at an address listed on the letter of transmittal.

Trustees, executors, administrators, guardians, attorneys-in-fact, officers of corporations, or others acting in a fiduciary or representative capacity who sign a letter of transmittal or any stock powers must indicate the capacity in which they are signing and must submit evidence of their power to act in that capacity unless waived by the Company.

The method of delivery of CureVac Shares and all other required documents, including delivery through DTC, is at the option and risk of the tendering CureVac Shareholder, and delivery will be deemed made only when actually received by the Exchange Agent. If delivery is by mail, the Company recommends registered mail with return receipt requested and properly insured. In all cases, CureVac Shareholders should allow sufficient time to ensure timely delivery.

3.1.2.8 No Guaranteed Delivery

The Company is not providing for guaranteed delivery procedures, and therefore CureVac Shareholders must allow sufficient time for the necessary tender procedures to be completed during normal business hours of DTC and the Exchange Agent, prior to the Expiration Time. DTC's cutoff for the processing of instructions for transactions like the offer is 6:00 p.m. (New York City time). Therefore, as a practical matter, instructions to be transmitted via DTC must be submitted by that time on the business day prior to the Expiration Time.

CureVac Shareholders must tender their CureVac Shares in accordance with the procedures set forth in this Prospectus. In all cases, the Company will exchange shares validly tendered and accepted for exchange pursuant to the Offer only after timely receipt by the Exchange Agent of shares (or timely confirmation of a book-entry transfer of such shares into the Exchange Agent's account at DTC as described in section "*3.1.2.7 Procedures for Tendering*"), a properly completed and duly executed letter of transmittal (or an agent's message in connection with a book-entry transfer), and any other required documents.

3.1.2.9 Acceptance for Exchange of CureVac Shares; Delivery of BioNTech ADSs; Capital Increases

Upon the terms of, and subject to the conditions to, the Offer, including the terms and conditions of any extension or amendment, the Company is required to accept for exchange CureVac Shares validly tendered and not properly withdrawn promptly following the Expiration Time (and, in any event, within two business days thereafter). For purposes of the Offer, the Company will be deemed to have accepted for exchange, and thereby acquired, CureVac Shares that are validly tendered in the Offer and not validly withdrawn prior to the Expiration Time as, if, and when the Company gives oral or written notice to the Exchange Agent of the Company's acceptance for exchange of such shares. The Company will immediately accept CureVac Shares tendered during the Subsequent Offering Period.

On the terms of, and subject to the conditions to, the Offer, the delivery of consideration for CureVac Shares that are accepted for exchange will be made by delivery of the Offer ADSs (and the deposit of any cash to be paid in lieu of fractional Offer ADSs) to the Exchange Agent, which will act as an agent for CureVac Shareholders tendering shares for the purpose of receiving the Offer Consideration from the Company and transmitting payment to such CureVac Shareholders whose CureVac Shares have been accepted for exchange.

If the Company is delayed in its acceptance of, or delivery of consideration for, CureVac Shares that are tendered, for any reason, including as described below, then, without prejudice to the Company's rights (but subject to compliance with Rule 14e-1(c) under the Exchange Act (relating to a bidder's obligation to pay for or return tendered securities promptly after the termination or withdrawal of such bidder's offer) and the terms of the Purchase Agreement), the Exchange Agent may, nevertheless, on behalf of the Company, retain CureVac Shares that are tendered, and such shares may not be withdrawn except to the extent that shareholders tendering such shares are entitled to do so as described below under section "*3.1.2.15 Withdrawal Rights*" or as otherwise contemplated by law. Tendering CureVac Shareholders will not receive any interest or other compensation for the period between the date on which they tender their CureVac Shares in the initial Offer or the Subsequent Offering Period and the date on which they receive Offer ADSs.

The transfer of Offer ADSs to tendering CureVac Shareholders will only be made after the Company's ordinary shares that will underly the Offer ADSs constituting the Offer Consideration have been validly issued and assigned or transferred to the depositary, after which the Offer ADSs will be transferred to the Exchange Agent, as described below.

Under the Purchase Agreement, the Company must initiate a Share Capital Increase promptly following the Acceptance Time, but in any event no later than the fifth business day thereafter. The Company must then initiate an additional Share Capital Increase promptly following the expiration of the Subsequent Offering Period, but in any event no later than the fifth business day thereafter. Under the Purchase Agreement, the Company must use reasonable best efforts to ensure the Share Capital

Increases become effective as soon as reasonably possible after filing the applicable registration. The Company is obligated to deliver Offer ADSs and settle the initial Offer and Subsequent Offering Period within 10 business days of the effectiveness of the first and second Share Capital Increases, respectively.

On September 3, 2025, the Management Board (with the consent of the Supervisory Board of September 7, 2025) resolved in-principle to increase the Company's share capital against contribution in kind with exclusion of preemptive rights (*Sachkapitalerhöhung mit Bezugsrechtsausschluss*) against contribution of validly tendered CureVac Shares, utilizing the authorized capital 2025. To issue a definitive number of ordinary shares that will underly the Offer ADSs constituting the Offer Consideration, the Management Board (with the consent of the Supervisory Board) is expected to resolve following the (A) the Acceptance Time and (B) the expiration of the Subsequent Offering Period to increase the Company's share capital against contribution in kind with exclusion of preemptive rights (*Sachkapitalerhöhung mit Bezugsrechtsausschluss*) of CureVac Shares validly tendered by the end of any such period by the corresponding amount through the issuance of the corresponding number of new ordinary shares. The new BioNTech ordinary shares that will underly the Offer ADSs constituting the Offer Consideration will be subscribed by, and issued to, the Subscription Agent, in trust for the benefit of the CureVac Shareholders having validly tendered their CureVac Shares by the end of any such period. Such capital increase will be effected by (i) allowing the Subscription Agent to execute a subscription certificate (*Zeichnungsschein*) in respect of the relevant number of shares; (ii) seeing to the effectuation of the contribution-in-kind through a transfer by the Exchange Agent of the relevant tendered CureVac Shares to the Subscription Agent and then by the Subscription Agent to the Company; (iii) registering the implementation of such capital increase of the Company's registered capital with the commercial register of the Company (each, a "**Share Capital Increase**"); and (iv) issuing the new ordinary shares that will underly Offer ADSs constituting the Offer Consideration to the Subscription Agent in trust for the benefit of the relevant tendering CureVac Shareholders (each, a "**Share Issuance**"). Following the Share Issuances, the Company's share capital may be increased from €248,552,200 by up to €15,061,575 to up to €263,613,775 through the issuance of up to 15,061,575 new ordinary shares.

The subscription certificate (clause (i) above) is expected to be executed by the Subscription Agent promptly following the Acceptance Time or, as applicable, the expiration of the Subsequent Offering Period and the transfer by the Exchange Agent of the relevant tendered CureVac Shares to the Subscription Agent and the transfer of all validly tendered CureVac Shares by the Subscription Agent to the Company (clause (ii) above) is expected to be made on that same day. The filing for the registration of the relevant Share Capital Increase (clause (iii) above) will be effected as soon as reasonably practicable thereafter.

After receipt of the commercial register filing, the registry court will assess compliance with the formal requirements of the capital increase, including board resolutions, filings, subscription, and receipt of consideration exceeding nominal value. Such assessment is mandatory under German law for any capital increase of a stock corporation against a contribution in kind.

As the competent court administering the Company's commercial register is responsible for the processing of the Company's application for registration of the relevant Share Capital Increase and the exact timing of the registration process is therefore outside of the Company's control, there may be delays in the effectiveness of the Share Capital Increases and the creation of the BioNTech ordinary shares that will underly the Offer ADSs constituting the Offer Consideration and, thus, the transfer of the Offer ADSs constituting the Offer Consideration to tendering CureVac Shareholders.

Following each Share Issuance, the Company will cause (i) the Subscription Agent to transfer to the depositary, in trust for the benefit of the relevant tendering CureVac Shareholders, the BioNTech ordinary shares that will underly the Offer ADSs constituting the Offer Consideration, (ii) the depositary to issue to the Exchange Agent the Offer ADSs constituting the Offer Consideration, and (iii) the Exchange Agent to deliver the Offer ADSs constituting the Offer Consideration to the tendering CureVac Shareholders and any cash in lieu of fractional Offer ADSs. The Company expects that the delivery of Offer ADSs to the tendering CureVac Shareholders will take approximately ten business days following the Acceptance Time or, as applicable, the expiration of the Subsequent Offering Period, but it could be three weeks or more.

In light of the foregoing, the Company cannot guarantee the precise timing of delivery of Offer ADSs in connection with the Offer or the Subsequent Offering Period. The Company is delivering the Offer ADSs in accordance with the requirements of German law and practice, consistent with Rule 14d-1(d)(2)(iv) under the Exchange Act.

For information on the authorized capital 2025, see section "*16.4.1 Authorized Capital*".

3.1.2.10 Effect of Tenders

A tender of CureVac Shares pursuant to any of the procedures described above will constitute your acceptance of the terms and conditions of the Offer, as well as your representation and warranty to BioNTech that, among other things, (i) you have the full power and authority to tender, sell, assign, and transfer the tendered shares (and any and all other CureVac Shares or other securities issued or issuable in respect of such shares); and (ii) when the same are accepted for exchange, the Company will acquire good, marketable, and unencumbered title to such shares, free and clear of all liens, restrictions, charges, and encumbrances, and not subject to any adverse claims. Tendering CureVac Shareholders should carefully review the representations and warranties included in the letter of transmittal, all of which will be deemed to be given upon tendering of CureVac Shares.

The exchange of CureVac Shares validly tendered and accepted for exchange pursuant to the Offer will be made only after timely receipt by the Exchange Agent of (i) the letter of transmittal for the CureVac Shares, properly completed and duly executed, with any required signature guarantees, or, in the case of a book-entry transfer through DTC, an agent's message, and (ii) any other required documents.

3.1.2.11 Determination of Validity

The Company will determine questions as to the validity, form, eligibility (including time of receipt), and acceptance for exchange of any tender of CureVac Shares, in the Company's sole discretion, and its determination will be final and binding, subject to any judgment of any court of competent jurisdiction. The Company reserves the absolute right to reject any and all tenders of CureVac Shares that it determines are not in proper form or the acceptance of or exchange for which may, in the opinion of its counsel, be unlawful. The Company also reserves the absolute right to waive any defect or irregularity in the tender of any CureVac Shares. No tender of CureVac Shares is valid until all defects and irregularities in such tender have been cured or waived. None of the Company, the Exchange Agent, the information agent or any other person is under any duty to give notification of any defects or irregularities in the tender of any CureVac Shares or will incur any liability for failure to give any such notification. The Company's interpretation of the terms and conditions of the Offer (including the letter of transmittal and instructions thereto) will be final and binding.

3.1.2.12 Extension of the Offer

The Company may extend the Offer to such other date and time as may be agreed in writing by the Company and CureVac, and the Company will extend the Offer for any minimum period as required by the SEC (including, without limitation, for any five-day extension period or longer period required under Rule 14d-4 or Rule 14e-1 under the Exchange Act) or Nasdaq.

In the event the minimum condition is reduced from 80% to 75% pursuant to the terms of the Purchase Agreement, such reduction will be announced and the offer will remain open for at least 10 business days from the date of such announcement.

In addition, the Company must extend the Offer on one or more occasions in consecutive periods of up to ten business days each if, at the then-scheduled Expiration Time, any condition to the Offer has not been satisfied or waived in order to permit satisfaction of such condition, or for periods of up to 20 business days in case of the antitrust approvals condition and the no legal restraints condition, if either of such conditions is not reasonably likely to be satisfied within such 10 business day extension period. The Company will not be required to extend the Offer on more than four occasions if the sole remaining unsatisfied condition to the Offer is the Minimum Condition, and the Company will not be required to extend the Offer beyond the March 12, 2026 outside date (which outside date may be extended in accordance with the Purchase Agreement).

3.1.2.13 Subsequent Offering Period

Following the Acceptance Time, the Company will provide a Subsequent Offering Period in accordance with Rule 14d-11 promulgated under the Exchange Act of not less than 10 business days (calculated in accordance with Rule 14d-1(g)(3) under the Exchange Act).

3.1.2.14 The Post-Offer Reorganization and the New Topco U.S. Tax Election

If all conditions are satisfied or waived (including, if applicable, the reduced minimum condition of 75%) and the Offer expires then, as promptly as practicable following the expiration of the Subsequent Offering Period, the Company and CureVac will effectuate the post-offer reorganization and the New Topco U.S. tax election. Pursuant to the post-offer reorganization, if the required resolutions are adopted at the EGM (or subsequent EGM) and if permitted under applicable law, the Company will become the sole owner of all of CureVac's business operations. In connection with the post-offer reorganization, CureVac will cease to exist and no public shareholders will continue to hold shares in it. Any CureVac Shareholders who do not participate in the Offer, including the Subsequent Offering Period, will receive in the post-offer reorganization the same consideration as such shareholder would have received had it participated in the Offer. However, the cancellation consideration will, in principle, be subject to Dutch dividend withholding tax, as set out in more detail below.

The Company intends to effectuate the post-offer reorganization by the legal downstream merger, followed promptly by the post-downstream merger share sale and the cancellation. The Company will additionally effectuate, or cause to be effectuated, the New Topco U.S. tax election, effective one day after the cancellation. To effectuate the legal downstream merger, CureVac will merge with and into New Topco, a newly incorporated wholly owned subsidiary of CureVac. New Topco will be the surviving entity of the legal downstream merger and CureVac will cease to exist. All assets and liabilities of CureVac (including its interest in CureVac SE, which holds all of the CureVac business) will transfer by operation of Dutch law to New Topco. As part of the legal downstream merger, CureVac Minority Shareholders will be allotted New Topco A Shares, and the Company will be allotted New Topco B Shares in exchange for their CureVac Shares, and their CureVac Shares will cease to exist. Following the legal downstream merger, New Topco will sell the issued and outstanding shares of CureVac SE to the Company, for which the Company will pay a purchase price equal to the excess of the aggregate Offer Consideration for all CureVac Shares over the amount of cash and cash equivalents of CureVac, including any receivables, and any other assets net of any liabilities of CureVac. This will be paid for in the form of (i) BioNTech ADSs to enable New Topco to distribute to each holder of New Topco A Shares pursuant to the cancellation the requisite number of BioNTech ADSs and (ii) a loan note with a principal amount equal to the remaining consideration payable by the Company with respect to the outstanding shares in the capital of CureVac SE. As a result, CureVac SE will become a direct wholly owned subsidiary of the Company. Subsequently, the New Topco A Shares (held by the former CureVac minority shareholders) will be cancelled against a repayment in kind. As a result of the foregoing, former CureVac Shareholders who did not tender in the Offer, including the Subsequent Offering Period (and now hold New Topco A Shares), will receive BioNTech ADSs (and cash in lieu of fractional BioNTech ADSs) following completion of the cancellation, without interest and subject to applicable Dutch dividend withholding tax.

No Dutch dividend withholding tax is applicable to the Offer Consideration received in exchange for CureVac Shares tendered in the Offer, including during the Subsequent Offering Period. However, the cancellation consideration received in the post-offer reorganization will, in principle, be subject to Dutch dividend withholding tax at a rate of 15% if and to the extent the cancellation consideration exceeds the average paid-in capital recognized for Dutch dividend withholding tax purposes of the New Topco A Shares, which we refer to as the Fiscally Recognized Capital (see section "*18.2.2.2.2 Dividend Withholding Tax*"), immediately prior to the cancellation effective time.

The Fiscally Recognized Capital of New Topco is, immediately following the merger effective time, equal to (i) the Fiscally Recognized Capital of CureVac at the time of the legal downstream merger, or (ii) if lower, the fair market value of CureVac at such time. It is currently expected that the Fiscally Recognized Capital of New Topco will be increased at most by an amount equal to the fair market value of CureVac at the time of the legal downstream merger.

In the event the cancellation consideration per New Topco A Share exceeds such Fiscally Recognized Capital of the New Topco A Shares immediately prior to the cancellation effective time, the excess will,

in principle, be subject to Dutch dividend withholding tax. Because the Exchange Ratio will only be fixed following the close of trading on Nasdaq on the fifth trading day prior to the scheduled Expiration Time and the number of BioNTech ADSs issuable in the Offer is subject to a collar, the value of the BioNTech ADSs to be received by the CureVac Shareholders in the post-offer reorganization, and thus the value of the cancellation consideration to be received by non-tendering CureVac Shareholders is not yet clear. Therefore, it is, as of the date of this Prospectus, not possible to determine the value of the cancellation consideration and thus not possible to determine Dutch dividend withholding tax consequences of the legal downstream merger and the cancellation.

Notwithstanding the above, as long as New Topco has its place of effective management in Germany and is therefore exclusively considered a tax resident of Germany under the double tax treaty between Germany and the Netherlands, as currently expected, the Netherlands will be restricted from imposing Dutch dividend withholding tax in respect of the cancellation consideration, except in the event the cancellation consideration is paid to (i) a shareholder who is resident or deemed to be resident in the Netherlands for Dutch income tax purposes or Dutch corporate income tax purposes (i.e., a Dutch Resident Holder), or (ii) a shareholder who is not resident nor deemed to be resident in the Netherlands for Dutch income tax purposes or Dutch corporate income tax purposes but who derives profits from an enterprise which enterprise is carried on, in whole or in part, through a permanent establishment or a permanent representative in the Netherlands, to which its New Topco A Shares are attributable (i.e., a Dutch PE Holder).

In order to apply this regime correctly, New Topco needs to identify its shareholders to assess whether they are Dutch Resident Holders and Dutch PE Holders. As a practical matter, New Topco will not be able to make this confirmation with certainty prior to the cancellation effective time. Therefore, by default, Dutch dividend withholding tax will be withheld on the cancellation consideration if and to the extent the cancellation consideration exceeds the Fiscally Recognized Capital of the New Topco A Shares immediately prior to the cancellation effective time.

Any such Dutch withholding tax will be for the account of such former CureVac Shareholders. The Exchange Agent will be allowed to sell, or procure the sale of, in one or more transactions, the minimum number of BioNTech ADSs to obtain a sufficient cash amount to remit to the Dutch tax authority the relevant amount of withholding tax and will not be obliged to pay any additional amounts to a holder of New Topco A Shares for any Dutch withholding tax effectively deducted from the cancellation consideration. As a result, CureVac Shareholders that do not tender their shares in the offer (including the Subsequent Offering Period) may receive a lower after-tax return than those who do.

Shareholders who are neither a Dutch Resident Holder nor a Dutch PE Holder may be able to reclaim any Dutch dividend withholding tax withheld from their cancellation consideration. Under current administrative practice, where a company incorporated under Dutch law is exclusively considered a tax resident in Germany pursuant to the double tax treaty between Germany and the Netherlands, as is expected for New Topco, the Dutch tax authorities generally require that refund applications be submitted through the designated withholding agent through an objection to the relevant dividend withholding tax return filed by the withholding agent. The dividend withholding tax return must be filed within one month following the cancellation and any objection must be submitted within six weeks of the date of payment. Accordingly, shareholders who may be eligible for a refund have a limited window in which to request that New Topco, as withholding agent, initiate the objection process.

To enable New Topco to file a timely objection, a cancellation consideration recipient must submit a written request to New Topco, no later than three weeks following the cancellation effective time in which such recipient timely confirms that such recipient (i) is not a resident nor deemed to be resident in the Netherlands for Dutch corporate income tax purposes or Dutch income tax purposes, (ii) does not derive profits from an enterprise, which enterprise is carried on, in whole or in part, through a permanent establishment or a permanent representative in the Netherlands to which its New Topco A Shares are attributable, and (iii) is, under Dutch law, the beneficial owner of the cancellation consideration. We refer to such confirmation as the "**Dutch WHT Confirmation**". New Topco will only process such requests and submit an objection to the Dutch tax authorities for the purpose of claiming a refund if the Dutch WHT Confirmation is provided to New Topco's sole satisfaction and all required conditions are also satisfied. All costs associated with this process will be borne by the requesting cancellation consideration recipient.

There can be no assurances as to the success of any refund request. In any event, any amounts refunded will be in cash. Therefore, non-tendering CureVac Shareholders will not receive the investment benefit, if any, of receiving any BioNTech ADSs sold by the Exchange Agent as described above to cover any applicable Dutch dividend withholding tax.

3.1.2.15 Withdrawal Rights

A CureVac Shareholder may properly withdraw CureVac Shares tendered pursuant to the Offer at any time prior to the Expiration Time. On and after the Expiration Time, CureVac Shareholders that have tendered their shares pursuant to the Offer will no longer be able to withdraw their shares and tenders of shares made pursuant to the Offer will be irrevocable; provided that, if the Company has not yet accepted CureVac Shares tendered for exchange, any CureVac Shareholder may withdraw its tendered shares after the 60th day following commencement of the Offer pursuant to Section 14(d)(5) of the Exchange Act.

To properly withdraw previously tendered shares, CureVac Shareholders must instruct the Exchange Agent to arrange for the withdrawal of such shares by a written or facsimile transmission notice of withdrawal (see section "*2.7 Documents Available for Inspection*"), which must be timely received by the Exchange Agent prior to the Expiration Time at the appropriate address. Any notice of withdrawal must specify the name of the person having tendered the CureVac Shares to be withdrawn, the number of tendered CureVac Shares to be withdrawn and the name of the holder of the tendered CureVac Shares to be withdrawn, if different from that of the person who tendered such shares.

The Exchange Agent's address is:

Computershare Trust Company, N.A.

If delivering by trackable mail, including overnight delivery or any other expedited service:	***If delivering by First Class Mail:***
Computershare Trust Company, N.A. c/o Voluntary Corporate Actions; COY: BNSB 150 Royall Street, Suite V Canton, MA 02021	Computershare Trust Company N.A. c/o Voluntary Corporate Actions: COY BNSB P.O. Box 43011 Providence, RI 02940

All questions as to the form and validity (including time of receipt) of any notice of withdrawal will be determined by the Company, in its sole discretion, which determination will be final and binding, subject to any judgment of any court of competent jurisdiction. No withdrawal of tendered CureVac Shares will be deemed to have been properly made until all defects and irregularities have been cured or waived. None of the Company or any of its affiliates or assignees, the Exchange Agent, or any other person will be under any duty to give notification of any defects or irregularities in any notice of withdrawal or incur any liability for failure to give such notification. Withdrawals of tenders of CureVac Shares may not be rescinded, and any CureVac Shares properly withdrawn will be deemed not to have been validly tendered for purposes of the Offer. However, withdrawn CureVac Shares may be retendered by following one of the procedures for tendering described above.

CureVac Shares tendered during the Subsequent Offering Period may not be withdrawn, except as otherwise provided by the Prospectus Regulation.

3.1.2.16 Antitrust Approvals

Under the Hart-Scott-Rodino Antitrust Improvements Act, which we refer to as "**HSR Act**", and the rules and regulations promulgated thereunder, the Offer may not be completed until the Company and CureVac each files a Notification and Report Form with the Federal Trade Commission, which we refer to as the "**FTC**", and the Antitrust Division of the U.S. Department of Justice, which we refer to as the "**DOJ**", and the applicable waiting period has expired or been terminated. The waiting period under the HSR Act expired at 11:59 pm Eastern Time on August 11, 2025.

At any time before or after consummation of the Transactions, notwithstanding the termination or expiration of the waiting period under the HSR Act, the FTC or the DOJ could take such action under U.S. antitrust laws as it deems necessary under the applicable statutes, including seeking to enjoin the completion of the Transactions, seeking divestiture of substantial assets of the parties, or requiring the parties to license, or hold separate, assets or to terminate existing relationships and contractual rights. At any time before or after the completion of the Transactions, and notwithstanding the termination or expiration of the waiting period under the HSR Act, any U.S. state attorney general could take such action under the antitrust laws as they deem necessary or desirable in the public interest. Such action could include seeking to enjoin the completion of the Transactions or seeking divestiture of substantial assets of the parties, or requiring the parties to license, or hold separate, assets or to terminate existing relationships and contractual rights. Private parties may also seek to take legal action under the antitrust laws under certain circumstances.

The Transactions have, as of October 14, 2025, obtained all relevant non-U.S. antitrust approvals, with full force and effect as of October 15, 2025.

3.1.2.17 Other Regulatory Approvals

Under Regulation (EU) 2022/2560 of 14 December 2022 on foreign subsidies distorting the internal market ("**FSR Regulation**"), the Offer may not be completed until the assessment period of 25 working days after receipt of the Company's complete notification by the EU Commission has lapsed and the EU Commission has not initiated an in-depth investigation. The Company submitted notification on September 5, 2025, so that the assessment period of 25 working days expired on October 10, 2025. The EU Commission considers, on the basis of the information available to it, that there are insufficient indications to initiate an in-depth investigation and has, therefore, closed its preliminary review. Consequently, the Offer condition of the lapse of the assessment period or clearance by the EU Commission under the FSR Regulation was fulfilled on that day.

3.1.2.18 Litigation

On August 7, 2025, BioNTech announced certain settlement arrangements among the Company and an affiliate, CureVac and certain of its affiliates, Pfizer and GlaxoSmithKline Biologicals SA, to resolve the pending patent litigation among these parties in the United States, and a framework for resolving patent litigation and allegations of patent infringement among the parties outside the United States, which is subject to the closing of the Offer. For further information see section "*11.12.1.4 Settlement Arrangements with GSK and CureVac*".

3.1.2.19 Appraisal Rights

Neither CureVac Shareholders nor shareholders of New Topco are entitled under Dutch law to appraisal or dissenters' rights related to the CureVac Shares or New Topco shares in connection with the Offer or the post-offer reorganization.

3.1.2.20 Accounting Treatment of the Transaction

The acquisition will be accounted for in accordance with IFRSs and in particular, with IFRS 3 *Business Combinations*, under which the transaction qualifies as a business combination, since the acquisition of CureVac by BioNTech fulfills the definition of the acquisition of a business. On the date of the acquisition, the identifiable assets acquired and liabilities assumed of CureVac will be recorded by BioNTech at their respective acquisition-date fair values.

3.1.2.21 Fees and Expenses

The Company has retained Georgeson LLC as the information agent in connection with the Offer and the post-offer reorganization. The information agent may contact holders of shares by mail, email, telephone, facsimile, and personal interview and may request brokers, dealers, and other nominee stockholders to forward material relating to the Offer and the post-offer reorganization to beneficial owners of CureVac Shares. The Company will pay the information agent reasonable and customary compensation for these services in addition to reimbursing the information agent for its reasonable out-of-pocket expenses. The Company agreed to indemnify the information agent against certain liabilities and expenses, including certain liabilities under the U.S. federal securities laws.

In addition, the Company has retained Computershare Trust Company, N.A. as Exchange Agent in connection with the Offer and the post-offer reorganization. The Company will pay the Exchange Agent reasonable and customary compensation for its services in connection with the Offer and the post-offer reorganization, will reimburse the exchange agent for its reasonable out-of-pocket expenses and will indemnify the Exchange Agent against certain liabilities and expenses, including certain liabilities under the U.S. federal securities laws. The Company will reimburse brokers, dealers, commercial banks, and trust companies and other nominees, upon request, for customary clerical and mailing expenses incurred by them in forwarding offering materials to their customers.

Except as set forth above, neither the Company nor New Topco will pay any fees or commissions to any broker, dealer, or other person for soliciting tenders of CureVac Shares pursuant to the Offer.

CureVac Shareholders which are the record owner of their CureVac Shares and tender their shares directly to the Exchange Agent, will not have to pay brokerage fees, commissions, or similar expenses. If CureVac Shares are owned through a broker, dealer, commercial bank, trust company, or other nominee and the CureVac Shareholder's broker, dealer, commercial bank, trust company, or other nominee tenders the CureVac Shares on such shareholder's behalf, the broker, dealer, commercial bank, trust company, or nominee may charge a fee for doing so. CureVac Shareholders should consult their broker, dealer, commercial bank, trust company, or nominee to determine whether any charges will apply.

3.1.3 Lock-up Undertakings

dievini's tender and support agreement (see section "*3.3 The Tender and Support Agreements*") provides that for two successive 90-day periods beginning on, and including, the date of the closing of the offer, dievini will not transfer an amount of BioNTech equity securities (including Offer ADSs) in excess of 25% of those it receives in connection with the transactions during either period (together the "**Restriction Period**"), provided, that (A) the foregoing restrictions shall not apply following the end of the Restriction Period, and (B) during the Restriction Period, the foregoing restrictions shall not apply to the transfer of the Company's equity securities (each, a "**Permitted Transfer**"): (I) if the relevant equity security holder is a corporation, partnership, limited liability company, trust, foundation (including, for the avoidance of doubt, any foundation (*Stiftung*) established under Liechtenstein law) or other business entity, to any controlled affiliate(s) of such equity security holder or any funds, investors, entities or accounts that are managed, sponsored or advised by such equity security holder or its controlled affiliates; (II) if the security holder is an individual, by gift, or by will or intestate succession to a family member or to a trust or foundation (including, for the avoidance of doubt, any foundation (*Stiftung*) established under Liechtenstein law) whose beneficiaries consist exclusively of one or more of such equity security holder or a family member, or by virtue of laws of descent and distribution upon death of such individual or pursuant to operation of law pursuant to a qualified domestic order or in connection with a divorce settlement; or (III) pursuant to a bona fide tender offer, merger, consolidation or other similar transaction, in each case made to all holders of BioNTech ADSs, involving a change of control (including negotiating and entering into an agreement providing for any such transaction); provided, that in the event that such tender offer, merger, consolidation or other such transaction is not completed, the Company's securities shall remain subject to the lock-up restrictions; provided, further, that in the case of each Permitted Transfer pursuant to clauses (I) through (III) above, it shall be a condition to such transfer that each Permitted Transferee executes and delivers to the Company an agreement in form and substance satisfactory to the Company stating that such transferee is receiving and holding such Company securities subject to the provisions of the lock-up undertaking and agrees not to sell or offer to sell such Company securities, engage in any swap or engage in any other activities restricted under the lock-up undertaking except as permitted thereunder (as if such Permitted Transferee had originally been bound by the lock-up undertaking).

3.1.4 Selling Restrictions

The distribution of this Prospectus and the distribution of the Offer ADSs may be restricted by law in certain jurisdictions. No action has been or will be taken by the Company to permit a public offering of the Offer ADSs using this Prospectus anywhere other than in Germany, Austria, France, Italy, the Netherlands and Spain as well as in Switzerland or the transmission or distribution of this Prospectus into any other jurisdiction, where additional actions for that purpose may be required.

The Company will file this Prospectus with the Swiss review body of SIX Exchange Regulation Ltd. pursuant to Article 54(2) of the Swiss Financial Services Act dated June 15, 2018, and may be obtained free of charge in electronic form at: https://investors.biontech.de under the "Investors — CureVac Tender Offer — CureVac Tender Offer Materials for EEA and Swiss Investors" section or in printed form, upon request from BioNTech SE, (telephone: +49 228 4108-0; email: investors@biontech.de).

Accordingly, this Prospectus may not be distributed or published in any jurisdiction other than in Germany, Austria, France, Italy, the Netherlands and Spain as well as in Switzerland, except under circumstances that will result in compliance with any applicable laws and regulations. Persons into whose possession this Prospectus comes are required to inform themselves about and observe any such restrictions, including those set out in the following paragraphs. Any failure to comply with these restrictions may constitute a violation of the securities laws of any such jurisdiction.

The acceptance of the Offer outside of Germany, Austria, France, Italy, the Netherlands and Spain as well as in Switzerland may be subject to restrictions. Persons who intend to accept the Offer outside of these countries are requested to inform themselves of and comply with the restrictions that exist outside of these countries.

3.1.4.1 United States

This Prospectus is not an offer to sell securities and is not soliciting an offer to buy securities in the United States. Any such offer or solicitation in the United States will be conducted only pursuant to an effective registration statement under the Securities Act.

The Offer ADSs to be issued in connection with the Offer will not be subject to any restrictions on transfer existing under the Securities Act, except for any ADSs to be paid by the Company to a CureVac Shareholder who may be deemed to be an "affiliate" of BioNTech after the completion of the Transactions. Such a CureVac Shareholder will be subject to volume and manner of sale restrictions pursuant to Rule 144 under the Securities Act. This Prospectus does not cover resales of Offer ADSs by affiliates of BioNTech or CureVac.

3.1.4.2 European Economic Area

In relation to each member state of the European Economic Area, or each a "**Relevant Member State**", no Offer ADSs have been offered or will be offered pursuant to the Offer to the public in a Relevant Member State other than in Germany, Austria, France, Italy, the Netherlands and Spain, except that the Offer ADSs may be offered to the public in that Relevant Member State at any time under the following exemptions under the Prospectus Regulation:

(i) to any qualified investor as defined in Article 2 lit. (e) of the Prospectus Regulation,

(ii) to fewer than 150 natural or legal persons (other than qualified investors as defined in Article 2 lit. (e) the Prospectus Regulation), or

(iii) in any other circumstances falling within Article 1 para. 4 of the Prospectus Regulation,

provided that no such offer (as set forth in clauses (i) to (ii)) of Offer ADSs will result in a requirement for the publication by the Company of a prospectus pursuant to Article 3 of the Prospectus Regulation or supplement a prospectus pursuant to Article 23 of the Prospectus Regulation.

For the purposes of this restriction, the expression an "offer of securities to the public" in relation to any Offer ADSs in any Relevant Member State means a communication to persons in any form and by any means, presenting sufficient information on the terms of the Offer and the Offer ADSs to be offered, so as to enable an investor to decide to purchase or subscribe for any Offer ADSs.

3.1.4.3 United Kingdom

The Offer of Offer ADSs in the U.K. is also subject to restrictions. No ADSs or shares of the Company have been offered or will be offered pursuant to the Offer to the public in the U.K., except that the Offer ADSs may be offered to the public in the U.K. at any time under the following exemptions under the U.K. Prospectus Regulation:

(i) to any legal entity which is a qualified investor as defined under Article 2 of the U.K. Prospectus Regulation;

(ii) to fewer than 150 natural or legal persons (other than qualified investors as defined under Article 2 of the U.K. Prospectus Regulation); or

(iii) in any other circumstances falling within Section 86 of the Financial Services and Markets Act 2000, as amended, or "**FSMA**",

provided that no such offer of the Offer ADSs shall require the Company to publish a prospectus pursuant to Section 85 FSMA or supplement a prospectus pursuant to Article 23 of the U.K. Prospectus Regulation. For the purposes of this provision, the expression an "offer to the public" in relation to the Offer ADSs in the U.K. means the communication in any form and by any means of sufficient information on the terms of the Offer and any Offer ADSs to be offered so as to enable an investor to decide to purchase or subscribe for any Offer ADSs.

In addition, in the U.K., this Prospectus is only addressed and directed to qualified investors as defined under Article 2 of the U.K. Prospectus Regulation (i) who have professional experience in matters relating to investments falling within Article 19 para. 5 of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005, as amended, or the "Order", and/or (ii) who are high net worth entities falling within Article 49 para. 2 (a) to (d) of the Order, and (iii) other persons to whom it may otherwise lawfully be communicated (all such persons together being referred to as "Relevant Persons"). In the U.K., any investment or investment activity to which this Prospectus relates is available only to, and will only be engaged in with, Relevant Persons. Any person in the U.K. who is not a Relevant Person must not act or rely on this Prospectus or any of its contents.

3.1.5 Expected Timetable; Announcements

The expected timetable for the Offer, which may be extended or shortened and remains subject to change, is as follows, assuming that the conditions to closing of the Offer (see "*3.2.5 Conditions to Closing of the Offer*") will be satisfied or waived and a Subsequent Offering Period of 10 business days applies:

October 20, 2025	Approval of the Prospectus by BaFin. Publication of the approved Prospectus on the website of BioNTech SE (https://investors.biontech.de under the "Investors — CureVac Tender Offer — CureVac Tender Offer Materials for EEA and Swiss Investors" section). Filing of this Prospectus with the Swiss review body of SIX Exchange Regulation Ltd. pursuant to Article 54(2) of the Swiss Financial Services Act dated June 15, 2018. The Prospectus may be obtained free of charge in electronic form at: https://investors.biontech.de under the "Investors — CureVac Tender Offer — CureVac Tender Offer Materials for EEA and Swiss Investors" section or in printed form, upon request from BioNTech SE, (telephone: +49 228 4108-0; email: investors@biontech.de).
October 21, 2025, 4:00 p.m. (New York City time)	Commencement of the initial Offer.
November 25, 2025	Determination of the final Exchange Ratio.
By no later than November 26, 2025, 9:00 a.m. (New York City time)	Publication of the Exchange Ratio in accordance with Article 17(2) of the Prospectus Regulation by press release.

December 3, 2025, 9:00 a.m. (New York City time)	End of the initial Offer (Expiration Time).
By December 3, 2025, 6:00 p.m. (New York City time)	Occurrence of the Acceptance Time and publication of the result of the initial Offer on the same day.
December 4, 2025	Commencement of Subsequent Offering Period in accordance with Rule 14d-11 promulgated under the Exchange Act.
On or about December 4, 2025	Resolutions on the Share Capital Increase and the related Share Issuance for the ordinary shares that will underly the Offer ADSs constituting the Offer Consideration for CureVac Shares to be acquired from CureVac Shareholders having tendered in the initial Offer.
On or about December 9, 2025	Application for registration of the Share Capital Increase with the Company's commercial register.
On or about December 15, 2025	Registration of the Share Capital Increase with the Company's commercial register, transfer of the newly issued ordinary registered shares to the depositary, for the benefit of the relevant tendering CureVac Shareholders, and delivery of the Offer ADSs to the Exchange Agent. The BioNTech ADSs are listed on Nasdaq as a class, and the Offer ADSs will be tradable upon their delivery.
On or about December 17, 2025	Onward delivery of the Offer ADSs and payment of any cash in lieu of fractional Offer ADSs to CureVac Shareholders having validly tendered CureVac Shares in the initial Offer.
December 18, 2025, 12:01 a.m. (New York City time)	End of Subsequent Offering Period and publication of the result of the Subsequent Offering Period on the same day.
On or about December 19, 2025	Resolutions on the Share Capital Increase and the related Share Issuance for the ordinary shares that will underly the Offer ADSs constituting the Offer Consideration for CureVac Shares to be acquired from CureVac Shareholders having tendered in the Subsequent Offering Period.
On or about December 29, 2025	Application for registration of the Share Capital Increase with the Company's commercial register.
On or about January 2, 2026	Registration of the Share Capital Increase with the Company's commercial register, transfer of the newly issued ordinary registered shares to the depositary, for the benefit of the relevant tendering CureVac Shareholders, and delivery of the Offer ADSs to the Exchange Agent. The BioNTech ADSs are listed on Nasdaq as a class, and the Offer ADSs will be tradable upon their delivery.
On or about January 6, 2026	Onward delivery of the Offer ADSs and payment of any cash in lieu of fractional Offer ADSs to CureVac Shareholders having validly tendered CureVac Shares in the Subsequent Offering Period.

The expected timetable is subject to any extension of the initial Offer and any Subsequent Offering Period, as set forth in sections "*3.1.2.12 Extension of the Offer*" and "*3.1.2.13 Subsequent Offering Period*" above.

The Company will publish any extension of the initial Offer by means of a public announcement of the extension no later than 9:00 a.m. (New York City time) on the next business day after the day on which the Offer was otherwise scheduled to expire and will publish the final Exchange Ratio, the results of the Offer, and any changes to the terms of the Offer, and upon expiry of the Expiration Time, any Subsequent Offering Period, by means of a public announcement via a press release and on the Company's website at https://investors.biontech.de under the "Investors — CureVac Tender Offer — CureVac Tender Offer Materials for EEA and Swiss Investors" section.

3.2 The Purchase Agreement

This section of this Prospectus summarizes the material provisions of the Purchase Agreement (see section "*21 The Purchase Agreement*"). CureVac Shareholders are not a third-party beneficiary of the Purchase Agreement and therefore may not directly enforce any of its terms and conditions.

This summary may not contain all of the information about the Purchase Agreement that is important to investors. BioNTech urges investors to carefully read the full text of the Purchase Agreement because it is the legal document that governs the Offer. The Purchase Agreement is not intended to provide investors with any factual information about BioNTech. In particular, the assertions embodied in the representations and warranties contained in the Purchase Agreement (and summarized below) are qualified by information each of BioNTech and CureVac filed with the SEC prior to the date of the Purchase Agreement, as well as by certain disclosure letters each party delivered to the other in connection with the signing of the Purchase Agreement, which modify, qualify, and create exceptions to the representations and warranties set forth in the Purchase Agreement. Moreover, some of those representations and warranties may not be accurate or complete as of any specified date, may apply contractual standards of materiality in a way that is different from what may be viewed as material by investors or that is different from standards of materiality generally applicable under the U.S. federal securities laws or may not be intended as statements of fact, but rather as a way of allocating risk among the parties to the Purchase Agreement. The representations and warranties and other provisions of the Purchase Agreement and the description of such provisions in this Prospectus should not be read alone but instead should be read in conjunction with the other information contained in this Prospectus.

BioNTech acknowledges that, notwithstanding the inclusion of the foregoing cautionary statements, BioNTech is responsible for considering whether additional specific disclosures of material information regarding material contractual provisions are required to make the statements in this Prospectus not misleading.

3.2.1 The Offer

3.2.1.1 Consideration Offered to CureVac Shareholders

On the terms and subject to the conditions of the Purchase Agreement, the Company will offer to exchange each CureVac Share validly tendered and not properly withdrawn pursuant to the Offer for the right to receive a number of BioNTech ADSs, equal to the amount obtained by dividing $5.4641 by the BioNTech ADS VWAP. In the event the BioNTech ADS VWAP is greater than or equal to $126.55, the Exchange Ratio will be 0.04318, and in the event the BioNTech ADS VWAP is less than or equal to $84.37, the Exchange Ratio will be 0.06476.

3.2.1.2 Commencement and Expiration of the Offer

Under the Purchase Agreement, the Company must commence the Offer promptly (and, in any event, within two business days) after the registration statement is declared effective under the Securities Act and the EU prospectus (as defined in the Purchase Agreement) is approved by the German Federal Financial Supervisory Authority (*Bundesanstalt für Finanzdienstleistungsaufsicht*). The Offer will expire at 9:00 a.m. (New York City time) on December 3, 2025, unless extended or terminated as described below.

3.2.1.3 Acceptance of CureVac Shares in the Offer

The obligation of the Company to accept for exchange, and the obligation of the Company to issue and cause to be transferred BioNTech ADSs in exchange for, any CureVac Shares validly tendered and not properly withdrawn pursuant to the Offer will be subject to the satisfaction or waiver of the closing

conditions set forth in section "*3.2.5 Conditions to Closing of the Offer*". If the Company accepts CureVac Shares in the Offer in accordance with the terms of the Purchase Agreement, then the Company and CureVac and their respective subsidiaries, as applicable, will effectuate or cause to be effectuated the post-offer reorganization.

3.2.1.4 Extension of the Offer

The Company may extend the Offer to such other date and time as may be agreed in writing by the Company and CureVac, and the Company will extend the Offer for any minimum period as required by the SEC (including, without limitation, for any period required under Rule 14d-4 or Rule 14e-1 under the Exchange Act) or Nasdaq.

The Company will also extend the Offer on one or more occasions in consecutive periods of up to 10 business days each if, at the then-scheduled Expiration Time, any condition to the Offer has not been satisfied or waived, in order to permit satisfaction of such condition, or for periods of up to 20 business days if it is not reasonably likely that, within such 10 business day extension period, a necessary antitrust approval will be obtained and/or a legal restraint will be removed. The Company will not be required to extend the Offer on more than four occasions if the sole remaining unsatisfied condition to the Offer is the Minimum Condition, and the Company will not be required to extend the outside date beyond the March 12, 2026 outside date; provided that, if all conditions to the Offer, other than the required antitrust approvals, are satisfied or capable of being satisfied, the Offer will be automatically extended for up to two additional 90-day periods.

In order to allow sufficient time to determine the BioNTech ADS VWAP, the Company will also extend the Offer if, on any date that is less than five consecutive Nasdaq trading days prior to then-scheduled Expiration Time, all conditions to the Offer have been satisfied or waived by the Company or CureVac, in each case to the extent any such condition to the Offer is for the benefit of the Company or CureVac, respectively, such that the Offer will expire at 5:00 p.m. (New York City time) on the fifth consecutive Nasdaq trading day following such date.

Following the Acceptance Time, the Company will provide a Subsequent Offering Period in accordance with Rule 14d-11 promulgated under the Exchange Act for not less than 10 business days (calculated in accordance with Rule 14d-1(g)(3) under the Exchange Act).

3.2.1.5 Treatment of CureVac Equity Awards

CureVac VSOP awards. As promptly as practicable following the date of the Purchase Agreement, CureVac will use reasonable best efforts to work together with the contributing shareholders to cause the respective beneficiaries under the CureVac VSOP awards to enter into an amendment to the contractual terms of the CureVac VSOP awards, in particular, providing for the contributing shareholders to (i) tender the respective CureVac Shares required to settle the CureVac VSOP awards, and (ii) transfer the respective Offer Consideration received for such respective CureVac Shares (in each case less any applicable tax withholdings) to the respective beneficiaries so that, as a consequence of (i) and (ii) any outstanding claims under the CureVac VSOP awards would be settled.

CureVac PSUs. At the closing of the Offer, each CureVac PSU that is outstanding as of immediately prior to the closing of the Offer will become fully vested solely with respect to any time-vesting conditions applicable thereto and (i) if the performance-vesting conditions applicable to such CureVac PSU have been satisfied in full immediately prior to closing of the Offer, will be settled in cash (without interest and subject to any applicable tax withholdings) in an amount equal to the product obtained by multiplying (x) the CureVac value per share by (y) the total number of CureVac Shares subject to CureVac PSU as of immediately prior to the closing of the Offer or (ii) if the performance-vesting conditions applicable to such CureVac PSU have not been satisfied in full immediately prior to closing of the Offer, will be cancelled for no consideration.

CureVac RSUs. At the closing of the Offer, each CureVac RSU that is outstanding as of immediately prior to the closing of the Offer will become fully vested and will be settled in cash (without interest and subject to any applicable tax withholdings) in an amount equal to the product obtained by multiplying (i) the CureVac value per share by (ii) the total number of CureVac Shares subject to such CureVac RSU as of immediately prior to the closing of the Offer.

CureVac options. At the closing of the Offer, each CureVac option that is outstanding as of immediately prior to the closing of the Offer will become fully vested and if the per share exercise price of such CureVac option is less than the CureVac value per share, then such CureVac option will be settled in cash (without interest and subject to any applicable tax withholdings) in an amount equal to the product obtained by multiplying (i) the excess of the CureVac value per share over the per share exercise price applicable to such CureVac option and (ii) the total number of CureVac Shares subject to such CureVac option. Any other CureVac option will be cancelled for no consideration at the merger effective time.

3.2.1.6 No Fractional Shares

In lieu of any fractional BioNTech ADSs that otherwise would be issuable pursuant to the Offer, each holder of CureVac Shares who otherwise would be entitled to receive a fraction of a BioNTech ADS pursuant to the Offer (after aggregating all CureVac Shares tendered in the Offer (and not validly withdrawn) by such holder) will be paid an amount in cash (without interest and subject to any applicable dividend withholding tax) equal to such fractional part of a BioNTech ADS multiplied by the BioNTech ADS VWAP, rounded to the nearest whole cent.

3.2.2 The Post-Offer Reorganization and the New Topco U.S. Tax Election

As promptly as practicable following the expiration of the Subsequent Offering Period, the Company will effectuate, or cause to be effectuated, in which case CureVac and its subsidiaries will effectuate, a corporate reorganization (referred to as the post-offer reorganization) consisting of the legal downstream merger, the post-downstream merger share sale, and the cancellation, in that order, provided that each step of the post-offer reorganization is permitted under applicable law. In addition, BioNTech will effectuate, or cause to be effectuated, the New Topco U.S. tax election, to be effective after the cancellation.

3.2.3 Representations and Warranties

The Purchase Agreement contains a number of representations and warranties made by the Company, on the one hand, and CureVac, on the other hand. The representations and warranties were made by the parties as of the date of the Purchase Agreement and, with respect to the representations and warranties made by CureVac, are repeated, subject to materiality qualifiers with respect to specific representations and warranties, as of the Expiration Time for purposes of determining whether the conditions to the Offer are satisfied, but do not survive the Acceptance Time. Certain of these representations and warranties are subject to specified exceptions and qualifications contained in the Purchase Agreement and qualified by information with respect to each of the Company and CureVac filed with or furnished to the SEC prior to the date of the Purchase Agreement and in the disclosure letters delivered by the Company and CureVac in connection with the Purchase Agreement.

3.2.3.1 Representations and Warranties of CureVac

In the Purchase Agreement, CureVac has made customary representations and warranties to the Company, including representations relating to, among other things: its organization, valid existence, and standing under the laws of the jurisdiction in which its business is being conducted; its subsidiaries; its articles of association and bylaws; its capitalization; its corporate power and authority relative to the Purchase Agreement and the Transactions; required governmental authorizations or filings or other consents and approvals, and the absence of violations or conflicts of its or its subsidiaries' organizational documents and contracts; public SEC filings and financial statements; certain business practices, including controls and procedures over disclosures and financial reporting; the absence of certain changes or events; the absence of undisclosed liabilities; compliance with laws, including sanctions laws, healthcare laws, and other regulatory matters; the absence of litigation; real property; intellectual property matters, including software, IT systems, privacy, and data protection; tax matters; tax free reorganization matters; employee benefit plan matters; labor and employment matters; environmental matters; material contracts; financial advisor fees and expenses; the opinion of CureVac's financial advisor with respect to the fairness of the Offer Consideration; insurance matters; anti-takeover measures; the accuracy of information supplied for purposes of the offer documents and the Schedule 14D-9; related party transactions and Rule 14d-10 matters; and the absence of representations and warranties by BioNTech except as set forth in the Purchase Agreement.

The representations and warranties in the Purchase Agreement made by CureVac are, in certain cases, modified by knowledge, materiality, and company material adverse effect (as defined below) qualifiers.

For purposes of the Purchase Agreement, knowledge means the actual knowledge of certain identified employees and/or members of the CureVac Boards, and the knowledge any such persons would reasonably be expected to have after reasonable inquiry (which for the avoidance of doubt will not require the procurement of a freedom to operate or similar analysis with respect to validity or non-infringement of intellectual property rights). For purposes of the Purchase Agreement, "**company material adverse effect**" means any fact, change, event, development, occurrence, or effect, each of which we refer to as an effect, that, individually or in the aggregate, (i) materially adversely affects, or would reasonably be expected to materially adversely affect, the business, assets, results of operations or condition of CureVac and its subsidiaries, taken as a whole, or (ii) prevents or materially impairs the ability of CureVac to consummate the Transactions. Clause (i) of the definition of company material adverse effect excludes:

(A) general economic conditions (or changes in such conditions) in Germany, the United States, the Netherlands or any other country or region in the world in which CureVac or its subsidiaries conduct business;

(B) changes in any financial, debt, credit, capital, banking or securities markets or conditions, in which CureVac or any of its subsidiaries conduct business;

(C) changes in interest, currency, or exchange rates or in the price of any commodity, security or market index;

(D) changes after the date of the Purchase Agreement in applicable law (or enforcement or the interpretation thereof), tariffs issued by any governmental authority after the date of the Purchase Agreement, or in IFRS (i.e., IFRS Accounting Standards as issued by the International Accounting Standards Board (IASB)) or other applicable accounting standards (or the interpretation thereof) and changes after the date of the Purchase Agreement in stock exchange rules or listing standards (or the enforcement or interpretation thereof);

(E) changes in the industries in which CureVac or its subsidiaries operate;

(F) any change in the market price, trading volume, or ratings of any securities or indebtedness of CureVac or any of its subsidiaries, any change of the ratings or the ratings outlook for CureVac or any of its subsidiaries by any applicable rating agency and the consequences of such ratings or outlook decrease, or failure of CureVac to meet, or the publication of any report regarding, any internal or public projections, forecasts, guidance, budgets, predictions, or estimates of or relating to CureVac or any of its subsidiaries (it being understood that the underlying facts and circumstances giving rise to any such change or failure may, if not otherwise excluded, be deemed to constitute and be taken into account in determining whether a company material adverse effect has occurred or will occur);

(G) the continuation, occurrence, escalation, outbreak, or worsening of any civil unrest, protests and public demonstrations, cyberattacks, hostilities, war, police action, acts of terrorism, sabotage, or military conflicts, whether or not pursuant to the declaration of an emergency or war;

(H) the execution and delivery of the Purchase Agreement or the announcement or pendency of the Transactions (including by reason of the identity of BioNTech), including any disruption in supplier, distributor, customer, partner, licensing or similar relationships or any loss of employees (other than certain specified exceptions);

(I) the existence, occurrence, or continuation of any force majeure events, including any earthquakes, floods, hurricanes, tropical storms, fires, or other natural or manmade disasters, any epidemic, pandemic or other similar outbreak (including any non-human epidemic, pandemic or other similar outbreak), or any other national, international, or regional calamity;

(J) any action brought or threatened by shareholders of CureVac (whether on behalf of CureVac or otherwise) asserting allegations of breach of fiduciary duty relating to the Purchase Agreement or violations of securities laws in connection with the company disclosure documents (as defined in the Purchase Agreement);

(K) any action expressly required to be taken pursuant to the Purchase Agreement or any action taken at the express written direction of BioNTech; or

(L) any ongoing litigation between CureVac and BioNTech, including any potential dismissal or mutually agreed settlement thereof;

provided that, with respect to subclauses (A), (B), (C), (D), (E), (G), and (I), if such effect disproportionately affects CureVac and its subsidiaries, taken as a whole, compared to other companies operating in the same industry and market as CureVac and its subsidiaries, then, only such incremental disproportionate impact or impacts will be taken into account in determining whether there has been, or would reasonably be expected to be, a company material adverse effect.

Additionally, the Purchase Agreement provides, among other things, that CureVac has represented that the CureVac Boards, at a meeting duly called and held, (i) determined that the Purchase Agreement and the Transactions are in the best interests of CureVac and the sustainable success of its business, having considered the interest of its shareholders, employees, and other relevant stakeholders, (ii) approved and adopted the Purchase Agreement (including the execution, delivery and performance thereof) and approved the Transactions, and (iii) unanimously resolved, on the terms and subject to the conditions set forth in Purchase Agreement, including the no solicitation/adverse recommendation change clauses, to support the Offer and to recommend acceptance of the Offer by the shareholders of CureVac and to recommend approval and adoption of the matters at the EGM.

3.2.3.2 Representations and Warranties of BioNTech

In the Purchase Agreement, the Company has also made customary representations and warranties to CureVac that are subject to specified exemptions and qualifications contained in the Purchase Agreement.

The Company's representations and warranties include representations relating to, among other things: organization, valid existence, and standing of the Company; corporate power and authority relative to the Purchase Agreement and the Transactions; required governmental authorizations or filings or other consents and approvals, and the absence of violations of its organizational documents; public SEC filings and financial statements; its capitalization; certain business practices, including controls and procedures over disclosures and financial reporting; the absence of certain changes or events; the absence of undisclosed liabilities; the absence of litigation; the absence of ownership of CureVac's Shares with certain exceptions, and the absence of voting trusts or other agreements to which the Company is party with respect to the voting of CureVac's shares, other than the tender and support agreements; accuracy of information supplied for purposes of the offer documents and the Schedule 14D-9; tax-free reorganization matters; the absence of certain agreements; and the absence of representations and warranties by CureVac except as set forth in the Purchase Agreement.

The Company's representations and warranties are, in certain cases, modified by knowledge, materiality, and buyer material adverse effect (as defined below). For purposes of the Purchase Agreement, "**buyer material adverse effect**" means an effect that, individually or in the aggregate, (i) materially adversely affects, or would reasonably be expected to materially adversely affect, the business, assets, results of operations or condition (financial or otherwise) of the Company and its subsidiaries, taken as a whole, or (ii) prevents or materially impairs the ability of the Company to consummate the Transactions. Clause (i) of the definition of buyer material adverse effect excludes:

(A) general economic conditions (or changes in such conditions) in Germany, the United States, the Netherlands, or any other country or region in the world in which the Company or any of its subsidiaries conduct business;

(B) changes in any financial, debt, credit, capital, banking, or securities markets or conditions in which BioNTech or any of its subsidiaries conduct business;

(C) changes in interest, currency, or exchange rates or in the price of any commodity, security or market index;

(D) changes after the date of the Purchase Agreement in applicable law (or the enforcement or interpretation thereof), tariffs issued by any governmental authority after the date of the Purchase Agreement, changes after the date of the Purchase Agreement in IFRS or other applicable accounting standards (or the interpretation thereof), and changes after the date of the Purchase Agreement in stock exchange rules or listing standards (or the enforcement or interpretation thereof);

(E) changes in the industries in which BioNTech or its subsidiaries operate;

(F) any change in the market price, trading volume, or ratings of any securities or indebtedness of the Company or any of its subsidiaries, any change or prospective change of the ratings or the ratings outlook for the Company or any of its subsidiaries by any applicable rating agency and the consequences of such ratings or outlook decrease, or the change in, or failure of the Company to meet, or the publication of any report regarding, any internal or public projections, forecasts, guidance, budgets, predictions, or estimates of or relating to the Company or any of its subsidiaries (it being understood that the underlying facts and circumstances giving rise to any such change or failure may, if they are not otherwise excluded from the definition of buyer material adverse effect, be deemed to constitute and may be taken into account in determining whether a buyer material adverse effect has occurred or will occur);

(G) the continuation, occurrence, escalation, outbreak, or worsening of any civil unrest, protests and public demonstrations, cyberattacks, hostilities, war, police action, acts of terrorism, sabotage, or military conflicts, whether or not pursuant to the declaration of an emergency or war;

(H) the execution and delivery of the Purchase Agreement or the announcement or pendency of the Transactions (including by reason of the identity of CureVac), including any disruption in supplier, distributor, customer, partner licensing or similar relationships or any loss of employees (other than certain specified exceptions);

(I) the existence, occurrence or continuation of any force majeure events, including any earthquakes, floods, hurricanes, tropical storms, fires, or other natural or manmade disasters, any epidemic, pandemic, or other similar outbreak (including any non-human epidemic, pandemic or other similar outbreak) or any other national, international, or regional calamity;

(J) any action brought or threatened by shareholders of the Company (whether on behalf of the Company or otherwise) asserting allegations of breach of fiduciary duty relating to the Purchase Agreement or violations of securities laws in connection with the offer documents;

(K) any action expressly required to be taken pursuant to the Purchase Agreement, or any action taken at the express written direction of CureVac; or

(L) any ongoing litigation between the BioNTech and CureVac, including any potential dismissal or mutually agreed settlement thereof;

provided that, with respect to subclauses (A), (B), (C), (D), (E), (G), and (I), if such effect disproportionately affects the Company and its subsidiaries, taken as a whole, compared to other companies operating in the same industry and market as the Company and its subsidiaries, then, only such incremental disproportionate impact or impacts will be taken into account in determining whether there has been, or would reasonably be expected to be, a buyer material adverse effect.

3.2.4 Covenants and Agreements

3.2.4.1 Conduct of Business of CureVac

From the date of the Purchase Agreement until the closing of the Offer or the earlier termination of the Purchase Agreement in accordance with its terms, except as (i) expressly required or expressly contemplated by the Purchase Agreement, (ii) set forth on the disclosure letter that CureVac delivered to the Company concurrently with the execution of the Purchase Agreement, which we refer to as the "**CureVac disclosure letter**", (iii) required by applicable law, or (iv) consented to in advance in writing by BioNTech, CureVac has agreed to (a) conduct its business in all material respects in the ordinary course of CureVac and its subsidiaries and (b) use commercially reasonable efforts to preserve intact its business organization and material business relationships with third parties, including manufacturers, suppliers, vendors, distributors, governmental authorities, customers, licensors, licensees, and others third parties with which it has material business relationships, and keep available the services of its present officers and key employees, subject to certain exceptions. In addition to the foregoing, from the date of the Purchase Agreement until the closing of the Offer or the earlier termination of the Purchase Agreement in accordance with its terms, except as (w) expressly required or expressly contemplated by the Purchase Agreement, (x) set forth on the CureVac disclosure letter, (y) required by applicable law or tax law or IFRS, or (z) as consented to in advance by the Company in writing (such consent not to be unreasonably withheld, conditioned or delayed), CureVac will not, and will cause its subsidiaries not to:

(A) amend, adopt any amendment to, or otherwise change its articles of association, bylaws, or other similar organizational documents;

(B) (i) split, combine, subdivide, exchange, or reclassify any shares in its share capital or other equity interests, (ii) declare, set aside, or pay any dividend or other distribution (whether in cash, shares, or property or any combination thereof) in respect of its shares or other equity interests or authorize the issuance of any other securities in respect of, in lieu of, or in substitution for, shares in its share capital or other equity interests, except for dividends or distributions paid by any of its wholly owned subsidiaries to CureVac or other wholly owned subsidiaries of CureVac, (iii) redeem, repurchase, or otherwise acquire or offer to redeem, repurchase, or otherwise acquire any CureVac securities or any securities of CureVac's subsidiaries, except as required by the terms of any CureVac equity plan or CureVac equity awards, (iv) enter into any contract with respect to the voting or registration of its share capital or any other CureVac securities or securities of CureVac's subsidiaries, or (v) other than offers and sales pursuant to Form S-8 that are otherwise permitted under the Purchase Agreement, register the offer or sale of any class of debt or equity securities pursuant to the Securities Act or otherwise subject any class of debt or equity securities to the periodic reporting requirements of the Exchange Act;

(C) except as otherwise expressly permitted, (i) issue, pledge, dispose, grant, transfer, encumber (or otherwise cause to be subject to any lien), deliver or sell, or authorize the issuance, pledge, disposition, grant, transfer, encumbrance (or subjection to any lien), delivery of or sale of, any shares of any CureVac securities or securities of CureVac's subsidiaries, other than the issuance of any CureVac Shares upon the exercise of CureVac options or CureVac VSOP awards or the settlement of CureVac RSUs and CureVac PSUs that are outstanding on the date of the Purchase Agreement in each case, in accordance with the terms of such CureVac options, CureVac VSOP awards, CureVac RSUs and CureVac PSUs as of the date of the Purchase Agreement; provided that, in the event that CureVac is required to make a performance determination prior to the closing of the Offer, such determination will be made in the ordinary course of business of CureVac and its subsidiaries in a manner consistent with past practice, or (ii) adjust or amend the rights of, or any term of, any CureVac security (including CureVac equity awards) or any securities of CureVac's subsidiaries;

(D) (i) acquire (whether by merger or consolidation, acquisition of stock or other securities or assets, license, by formation of a joint venture, or otherwise) any other person or business or any assets (other than ordinary course purchases from vendors) or properties or rights of any other person or (ii) make any investment in any other person by purchase of stock or securities, contributions to capital or property transfers, except in each case for (a) acquisitions from wholly owned subsidiaries of CureVac; (b) the purchase of equipment, supplies, and inventory in the ordinary course of business of CureVac and its subsidiaries in a manner consistent with past practice; (c) generally commercially available software licensed pursuant to a standard off-the-shelf or shrink wrap or click wrap agreement; and (d) acquisitions of any assets (other than ordinary course purchases from vendors) as to which the aggregate consideration for all such acquisitions does not exceed $5,000,000 in the aggregate;

(E) sell, assign, lease, license, transfer, divest, allow to lapse, dispose of (whether by merger or consolidation, sale of stock or other securities or assets, license by formation of a joint venture, or otherwise), or otherwise mortgage, encumber, or subject to any lien (other than permitted liens), to any person (including any subsidiary of CureVac) in a single transaction or series of related transactions any of its assets, securities, properties, interests or businesses, including the capital stock of subsidiaries of CureVac, except (i) in the ordinary course of business of CureVac and its subsidiaries in a manner consistent with past practice (including granting non-exclusive licenses under owned company intellectual property (as defined in the Purchase Agreement), for the purpose of enabling research and development by third parties, which, for the avoidance of doubt, will not include commercialization licenses or exclusive licenses to owned company intellectual property), and (ii) disposition of immaterial equipment and immaterial property no longer required in the operation of the business;

(F) (i) sell, assign, transfer, convey, pledge, encumber, dispose, license, sublicense, abandon, cancel, waive, permit to lapse or relinquish (other than any patent or copyright expiring at the end of its statutory term and not capable of being extended), or impair any owned company intellectual property (in each case, other than granting non-exclusive licenses in the ordinary course of business in a manner consistent with past practice (including granting non-exclusive licenses under owned company intellectual property, for the purpose of enabling research and development by third parties, which, for the avoidance of doubt, will not include commercialization licenses or exclusive licenses to owned company intellectual property)), (ii) amend or extend any patent or trademark registration in CureVac intellectual property rights, or amend or abandon any patent application or

trademark application in CureVac intellectual property rights except as required by diligent prosecution, (iii) fail to exercise a right of renewal or extension under or with respect to any CureVac intellectual property right, or (iv) disclose any confidential and non-public data or information of CureVac, its subsidiaries, or its affiliates without a confidentiality agreement consistent with past practice in place protecting such confidential and non-public data;

(G) (i) commence any clinical study in respect of any CureVac product, (ii) make any material change to, discontinue, terminate, or suspend any clinical study, or (iii) qualify any new site for manufacturing of any CureVac product unless in line with existing development plans;

(H) enter into, amend, renew, extend, modify, terminate, or waive any rights under, in each case, in any material respect, any real property lease or material contract required under the Purchase Agreement to be listed in a specific section of the CureVac disclosure letter (or any CureVac real property lease or material contract that if entered into prior to the date of the Purchase Agreement would be a CureVac real property lease or any contract required to be listed thereunder) or any affiliate agreement (subject to certain exceptions);

(I) except as set forth in the CureVac disclosure letter, make any loans, advances, or capital contributions to, or investments in, any other person, other than loans, advances or capital contributions among CureVac and any of its wholly owned subsidiaries and capital contributions to or investments in its wholly owned subsidiaries, in each case in the ordinary course of business of CureVac and its subsidiaries in a manner consistent with past practice;

(J) incur, create, assume, or otherwise become liable for any indebtedness for borrowed money or guarantees thereof (directly, contingently or otherwise), other than indebtedness incurred between CureVac and any of its wholly owned subsidiaries or between any of such wholly owned subsidiaries or guarantees by CureVac of indebtedness of any wholly owned subsidiary of CureVac, in each case in the ordinary course of business of CureVac and its subsidiaries in a manner consistent with past practice;

(K) except as required by the terms of a CureVac plan or collective bargaining agreement (as defined in the Purchase Agreement), in each case, in effect as of the date of the Purchase Agreement, (i) increase the annualized compensation or benefits of any then-current CureVac service provider (other than annual increases in base salary or hourly wage rate, as applicable, in the ordinary course of business of CureVac and its subsidiaries in a manner consistent with past practice), (ii) grant any equity (or equity-based) award to any current, former, or future CureVac service provider, (iii) grant any rights to severance, termination pay, retention, or change in control benefit or agreement to any CureVac service provider or increase the amount of such rights, (iv) establish, adopt, enter into, amend, or terminate any CureVac plan or collective bargaining agreement or become a member of an employers' association, (v) accelerate the time of payment or vesting of, or the lapsing of restrictions with respect to, or fund or otherwise secure the payment of, any compensation or benefits under any benefit plan, (vi) change any actuarial or other assumptions used to calculate funding obligations with respect to any CureVac plan or change the manner in which contributions to such plans are made or the basis on which such contributions are determined, except as may be required by IFRS, (vii) amend or waive any performance or vesting criteria or accelerate the payment or vesting of any payment, equity, or other incentive award or benefit provided or to be provided to any current, former or future CureVac service provider or otherwise pay any amounts or provide any benefits (including the forgiveness of indebtedness of any loan) not required to be paid to such individual under the applicable CureVac plan or collective bargaining agreement, in each case, as in effect as of the date of the Purchase Agreement, (viii) hire or terminate the employment of any CureVac service provider (other than a termination for cause), or (ix) promote any employee (a) to a position with an annual base salary or annual base compensation of €120,000 or more or (b) to the vice president level or above, in each case, other than in the ordinary course of business consistent with past practice, including to fill a vacant role;

(L) make or authorize any capital expenditures, except as consistent with (i) CureVac's current capital expenditure plan, and (ii) any other subsequent annual capital budget that (a) is prepared in the ordinary course of business of CureVac and its subsidiaries in a manner consistent with past practice by CureVac and approved by the CureVac Boards, and (b) provides for total capital expenditures that do not exceed, in the aggregate, 110% of those set forth in the capital expenditure plan referred to in subclause (i) above;

(M) (i) cancel any material indebtedness (other than intercompany indebtedness canceled in compliance with law); (ii) waive, release, grant, or transfer any material claim or right of material value or consent to the termination of any material claim or right of material value; or (iii) commence any action, except in connection with a breach of the Purchase Agreement or any other agreements contemplated thereby or otherwise related to the Transactions;

(N) pay, discharge, compromise, settle, or satisfy any liability (whether absolute, accrued, asserted or unasserted, contingent, or otherwise) or any action, inquiry, or investigation against CureVac or any of its subsidiaries or any of their respective directors or officers, other than (i) liabilities or actions relating to taxes, (ii) the payment, discharge, settlement, or satisfaction of claims or liabilities (a) fully covered by insurance, (b) reflected in or reserved against in the CureVac balance sheet (or the notes thereto) (as defined in the Purchase Agreement) and for amounts not in excess of such reserves, (c) related to costs and expenses incurred by CureVac in connection with the Transactions, or (d) with respect to any Transaction litigation in accordance with, and as permitted by the Purchase Agreement, or (iii) where the amount paid or to be paid by CureVac and its subsidiaries does not exceed $1,000,000 individually, or $5,000,000, in the aggregate (except with respect to settlement of certain matters set forth in the CureVac disclosure letter) (in each case, net of insurance proceeds, indemnity, contribution, or similar payments received or to be received by CureVac or any of its subsidiaries in respect thereof), in each case, only without the imposition of any material restrictions on the business or operations of CureVac or any of its subsidiaries or the imposition of equitable relief on, or the admission of criminal or fraudulent conduct by, CureVac or any of its subsidiaries or any of their respective officers or directors;

(O) convene any general meeting of CureVac (or any adjournment or postponement thereof) other than the EGM and any subsequent EGM or pursuant to the Company's request under the Purchase Agreement (unless CureVac determines in good faith, after consultation with outside legal counsel, that such a meeting is required by applicable law, or such a meeting would otherwise be in the ordinary course of business);

(P) write up, write down, or write off the book value of any assets for accounting purposes, except (i) for depreciation and amortization in accordance with IFRS consistently applied, (ii) as otherwise required under IFRS (including to increase any reserves for contingent liabilities), or (iii) in the ordinary course of business in accordance with IFRS;

(Q) make any changes to CureVac's methods of accounting (including any change to CureVac's fiscal year), except as required by concurrent changes in IFRS or in Regulation S-X as promulgated by the SEC, as agreed to by its independent public accountants;

(R) (i) change any material method of tax accounting, (ii) settle or compromise any audit or other proceeding relating to a material amount of tax, (iii) change any material tax election or file any material amended tax return, (iv) agree to an extension or waiver of the statute of limitations with respect to the assessment or determination of a material amount of taxes (other than extensions granted in connection with extensions of time to file tax returns obtained in the ordinary course of business and automatically granted), (v) enter into any closing agreement with respect to any material amount of tax or surrender any right to claim any material tax refund, or (vi) change its residency for tax purposes;

(S) adopt a plan or agreement of complete or partial liquidation, dissolution, restructuring, recapitalization, merger, or other reorganization of CureVac or any of its subsidiaries (other than wholly owned subsidiaries or as contemplated by the Purchase Agreement);

(T) enter into a new line of business outside of the business of CureVac and its subsidiaries conducted as of the date of the Purchase Agreement;

(U) take any action that would reasonably be expected to (i) impede or materially delay consummation of the Transactions on a timely basis, (ii) require the receipt of any authorizations, consents, orders, or approvals from any governmental authority, or consent, approval, or waiver of any third party, in each case in connection with the consummation of the Transactions, (iii) result in any of certain conditions set forth in the Purchase Agreement not being satisfied, or (iv) impair its ability to perform its obligations under the Purchase Agreement or to consummate the Transactions on a timely basis; or

(V) offer, propose, authorize, agree, resolve, or commit to do any of the foregoing.

During the pre-closing period (as defined in the Purchase Agreement), CureVac will take all actions and implement any measures required to remediate any deficiencies or weaknesses disclosed in any CureVac SEC document or in the CureVac disclosure letter related to CureVac's (i) system of internal

control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) of the Exchange Act) regarding the reliability of financial reporting and the preparation of its financial statements for external purposes in accordance with IFRS, or (ii) disclosure controls and procedures (as defined in Rule 13a-15(e) of the Exchange Act).

3.2.4.2 Conduct of Business of BioNTech

During the pre-closing period, except as (i) expressly required or expressly contemplated by the Purchase Agreement, (ii) set forth in the disclosure letter delivered by the Company to CureVac, which we refer to as the BioNTech disclosure letter, (iii) required by applicable law or (iv) consented to in advance in writing by CureVac (such consent not to be unreasonably withheld, conditioned, or delayed), the Company will, and will cause each of its subsidiaries to, (a) conduct its business in all material respects in the ordinary course of business consistent with past practice and (b) use its reasonable best efforts to preserve intact in all material respects its business organization and material business relationships with suppliers, vendors, governmental authorities, customers, and other persons with which the Company has material business relationships; provided that neither the Company nor any of its subsidiaries will be required to (or will without CureVac's prior consent, not to be unreasonably withheld, conditioned, or delayed) make any payments to its business relationship counterparties, beyond that paid in the ordinary course of business in order to maintain such business relationships. In addition to and without limiting the generality of the foregoing, during the pre-closing period, except as (w) expressly required or expressly contemplated by the Purchase Agreement, (x) set forth in the BioNTech disclosure letter, (y) required by applicable law or tax law or IFRS, or (z) consented to in advance in writing by CureVac (such consent not to be unreasonably withheld, conditioned, or delayed), the Company will not, and will cause its subsidiaries not to:

(A) amend, adopt any amendment, or otherwise change (whether by merger, consolidation, or otherwise) any of the Company's organizational documents, except for such amendments or changes as would not have or reasonably be expected to have, individually or in the aggregate, a buyer material adverse effect;

(B) declare, set aside, or pay any dividend or other distribution (whether in cash, shares, or property or any combination thereof) in respect of its shares or other equity interests, except for dividends or distributions paid by any of its subsidiaries to the Company or other subsidiaries of the Company;

(C) split, combine, subdivide, exchange, or reclassify the BioNTech shares or the BioNTech ADSs including pursuant to any recapitalization, merger, issuer tender, or exchange offer or other similar transaction, unless the Offer Consideration and any other amounts payable pursuant to the Transactions are equitably adjusted in order to provide the (former) shareholders of CureVac the same economic benefit as contemplated by the Purchase Agreement prior to such event; or

(D) agree, resolve or commit to do any of the foregoing.

3.2.4.3 No Solicitation

CureVac has agreed not to, and has agreed to cause its subsidiaries and its and their respective directors and officers not to, and CureVac has agreed to, and will cause its subsidiaries to, use their reasonable best efforts to cause its and their other respective representatives not to, directly or indirectly, (i) solicit, initiate or knowingly facilitate, induce or knowingly encourage (including by providing information, cooperation or assistance) any inquiries or the making of any proposal or Offer that constitutes or would reasonably be expected to lead to an alternative acquisition proposal, (ii) enter into, continue, or otherwise participate in any discussions or negotiations regarding any alternative acquisition proposal, or (iii) authorize, execute, or enter into any letter of intent, agreement in principle, acquisition agreement, or other similar contract (whether or not binding) with respect to an alternative acquisition proposal.

CureVac has also agreed to, and has also agreed to cause each of its subsidiaries and its and their respective directors and officers to, and will use their reasonable best efforts to cause each of the representatives of CureVac and its subsidiaries to, immediately cease and cause to be terminated any and all existing discussions or negotiations with any person conducted prior to the date of the Purchase Agreement with respect to any alternative acquisition proposal, and has agreed not to modify, amend, or terminate, or waive, release, or assign, any provisions of, any confidentiality or standstill agreement (or any similar agreement) to which CureVac or any of its subsidiaries is a party relating to any such alternative acquisition proposal and has agreed to enforce the provisions of any such agreement.

CureVac, however, will be permitted to release or waive the standstill obligations solely to the extent necessary to permit the party referenced therein to submit an unsolicited *bona fide* written alternative acquisition proposal to the CureVac Boards on a confidential basis conditioned upon such person agreeing that CureVac will not be prohibited from providing any information to BioNTech regarding any such alternative acquisition proposal in accordance with the terms of the Purchase Agreement.

CureVac has also agreed to promptly request each person that has prior to the date of the Purchase Agreement executed a confidentiality agreement in connection with its consideration of any alternative acquisition proposal to, in accordance with the terms of such agreement, return or destroy all confidential information furnished prior to the execution of the Purchase Agreement to or for the benefit of such person by or on behalf of CureVac or any of its subsidiaries. CureVac has further agreed that it will promptly inform its representatives of the foregoing obligations.

If CureVac receives an unsolicited, *bona fide* written alternative acquisition proposal prior to the Expiration Time, CureVac may then take the following actions upon giving notice to BioNTech (but only if (i) the CureVac Boards determine in good faith, after consultation with its outside legal counsel, that the failure to do so would be inconsistent with its fiduciary duties under the laws of the Netherlands and (ii) (a) the CureVac Boards determine in good faith, after consultation with its outside legal counsel and financial advisor, that such alternative acquisition proposal constitutes or would reasonably be expected to lead to a superior proposal and (b) the submission of such alternative acquisition proposal did not result from or arise in connection with a breach of the non-solicitation covenants undertaken by CureVac, as described in this section):

(i) furnish non-public information with respect to CureVac and its subsidiaries to the person or group making such alternative acquisition proposal (and its representatives), provided that, (A) prior to furnishing any such non-public information, it receives from such person or group an executed confidentiality agreement containing terms at least as restrictive to the person or group in the aggregate as the terms contained in the respective confidentiality agreements (as defined in the Purchase Agreement) are to the Company, and which may not contain any exclusivity provision or other term that would restrict, in any manner, CureVac's ability to consummate the Transactions or to comply with its disclosure obligations to the Company pursuant to the Purchase Agreement, and (B) prior to or contemporaneously with furnishing any such non-public information to such person or group (or its representatives), it furnishes such non-public information to the Company to the extent the Company has not previously been provided with such information; and

(ii) engage in discussions or negotiations with such person or group with respect to such alternative acquisition proposal.

CureVac is required to notify the Company as promptly as practicable (and in any event within 24 hours) after receipt of any alternative acquisition proposal or any request for non-public information or any inquiry that would reasonably be expected to lead to any alternative acquisition proposal, and to provide the Company with written notice of the material terms and conditions of such alternative acquisition proposal, request, or inquiry, and the identity of the person or group making any such alternative acquisition proposal, request, or inquiry. Commencing upon the provision of any notice referred to above and continuing until such alternative acquisition proposal, request, or inquiry is withdrawn, (i) CureVac (or its outside legal counsel) will keep the Company (or its outside legal counsel) informed on a reasonably current basis regarding the status and material terms (including any changes thereto) of discussions and negotiations relating to any such alternative acquisition proposal, request, or inquiry (and within 24 hours after any changes to the material terms thereof) and (ii) CureVac will, as promptly as practicable (and in any event within 24 hours following the receipt or delivery thereof), provide the Company (or its outside legal counsel) with copies of all written materials, proposals, or proposed transaction agreements (including all schedules and exhibits thereto) relating to any such alternative acquisition proposal (which may be redacted to the extent necessary to avoid disclosure of confidential information regarding the business or operations of the person making such alternative acquisition proposal, so long as such redaction does not extend to the identity of such person or any material terms or conditions of such alternative acquisition proposal).

For the purposes of the Purchase Agreement, an alternative acquisition proposal means any inquiry, proposal, indication of interest, or Offer from any person or group of persons (or the shareholders of any person) relating to, or that would reasonably be expected to lead to, any of the following transactions:

(i) a transaction or series of transactions pursuant to which any third party acquires or would acquire, directly or indirectly, beneficial ownership (as defined in Rule 13d-3 under the Exchange Act) of more than 20% of the outstanding CureVac Shares or other equity securities of CureVac (or options, rights or warrants to purchase, or securities convertible into or exchangeable for, such securities) representing more than 20% of the voting power of CureVac, including pursuant to a stock purchase, merger, consolidation, tender offer, share exchange, or other transaction involving CureVac or any of its subsidiaries;

(ii) any transaction or series of transactions pursuant to which any third party acquires or would acquire, directly or indirectly, control of assets (including for this purpose the outstanding equity securities of the CureVac subsidiaries and any entity surviving any merger or combination including any of them) of CureVac or its subsidiaries representing more than 20% of the revenues, net income or assets (in each case, on a consolidated basis) of CureVac and its subsidiaries, taken as a whole; or

(iii) any disposition of assets representing more than 20% of the revenues, net income, or assets (in each case, on a consolidated basis) of CureVac and its subsidiaries, taken as a whole.

For the purposes of the Purchase Agreement, a superior proposal means a *bona fide* unsolicited written alternative acquisition proposal that is binding (subject only to the valid termination of the Purchase Agreement) and that did not result from a breach of the non-solicitation covenants undertaken by CureVac (as described above) and that the CureVac Boards have determined in good faith (after consultation with outside legal counsel and financial advisors), taking into account all legal, financial, regulatory, financing, certainty, timing, and other relevant aspects of the proposal and the person making the proposal (and taking into account any amendment or modification to the Purchase Agreement proposed by the Company): (i) is on balance more favorable to CureVac and the sustainable success of its business, taking into account the interests of its shareholders, employees, and other stakeholders, than the Transactions, and (ii) is reasonably likely to be consummated. For purposes of the definition of superior proposal, each reference in the definition of alternative acquisition proposal to 20% is deemed to be a reference to 50%.

3.2.4.4 Adverse Recommendation Change

The Company and CureVac have agreed that, subject to certain exceptions, the CureVac Boards and committees will not: (i) withhold, qualify, or amend, in a manner adverse to the Company, CureVac's recommendation in favor of the Purchase Agreement, the acceptance of the Offer and the other Transactions, which we refer to as the CureVac Boards' recommendation, or publicly propose to do the same, or fail to make or include the CureVac Boards' recommendation in the applicable CureVac disclosure documents, or to make any public statement inconsistent with that recommendation; (ii) recommend, adopt, or approve any alternative acquisition proposal or publicly propose to do the same; (iii) make any kind of public statement in relation to an alternative acquisition proposal other than a recommendation against it; (iv) fail to publicly recommend against any such alternative acquisition proposal or reaffirm CureVac's recommendation within 10 business days after any such alternative proposal is made public or after the Company's reasonable, written request to do so (or, under certain circumstances, earlier); or (v) publicly propose to do any of the above; any of the foregoing being referred to as an adverse recommendation change.

The Company and CureVac have also agreed that the CureVac Boards and committees will not approve or recommend or allow CureVac or any of its affiliates to execute or enter into any memorandum of understanding, merger agreement, acquisition agreement, or other similar contract (i) relating to any alternative acquisition proposal or Offer that would reasonably be expected to lead to an alternative acquisition proposal or (ii) requiring it to abandon, terminate, or fail to consummate the Transactions, nor will it publicly propose to do the same, which we refer to as an alternative acquisition agreement.

The Company and CureVac have further agreed that the CureVac Boards may, solely in response to receiving a superior proposal after the date of the Purchase Agreement, make an adverse recommendation change and validly terminate the Purchase Agreement to enter into an agreement in respect to the superior proposal, only if the following conditions are met:

(i) CureVac has not breached any of its non-solicitation obligations and covenants described in section "*3.2.4.3 No Solicitation*" or any of its obligations and covenants described in this section;

(ii) CureVac has (a) provided the Company four business days' prior written notice, which will state (x) that CureVac has received a superior proposal, (y) the material terms, consideration, and identity of

the offering party along with the most current version of the alternative acquisition agreement and any ancillary documents relating to the superior proposal (with any amendment to the financial or material terms of the superior proposal requiring new notice and new three business days period), and (z) that CureVac's Boards have determined to make an adverse recommendation change and/or terminate the Purchase Agreement and have consulted with outside advisors and determined that failure to make an adverse recommendation change and/or terminate the Purchase Agreement would be inconsistent with fiduciary duties of the members of CureVac Boards under the laws of the Netherlands; and (b) prior to making an adverse recommendation change or terminating the Purchase Agreement, to the extent requested in writing by BioNTech, CureVac will engage in good faith negotiations with the Company during the applicable three or four business day period (as applicable) to amend the Purchase Agreement such that the alternative acquisition agreement ceases to be a superior proposal; and

(iii) no earlier than the end of the three or four business day period (as applicable), CureVac's Boards have determined in good faith, after consultation with its outside legal counsel and financial advisor, and after taking into account the revised terms proposed by the Company, that the superior proposal continues to be a superior proposal, and the failure to make an adverse recommendation change and/or terminate the Purchase Agreement would continue to be inconsistent with fiduciary duties of the members of CureVac Boards under the laws of the Netherlands.

Additionally, the Company and CureVac have agreed that the CureVac Boards may, upon the occurrence of an event or change in circumstances arising after the date of the Purchase Agreement and prior to the Expiration Time that was not known to, or reasonably foreseeable by, CureVac's Boards as of the date of the Purchase Agreement, and that has not arisen as a result of any actions taken by CureVac in breach of the Purchase Agreement, which causes the CureVac Boards to determine in good faith (after consultation with its outside legal counsel and financial advisor) that the failure to make an adverse recommendation change would be inconsistent with fiduciary duties of the members of CureVac Boards under the laws of the Netherlands (subject to certain exceptions, including the receipt, existence or terms of an alternative acquisition proposal or any matter relating thereto or consequence thereof, any change in the market price or trading volume of the CureVac Shares or the BioNTech ADSs, or any ongoing litigation between the Company and CureVac, among others), which we refer to as an intervening event, at any time prior to the Expiration Time, make an adverse recommendation change, or authorize or propose publicly to do the same, only if the following conditions are met:

(i) CureVac has (a) provided four business days' prior written notice, which will provide (y) reasonably detailed information describing the intervening event and the rationale for the adverse recommendation change and (z) the CureVac Boards' determination to make an adverse recommendation change, and, after consultation with its outside legal counsel and financial advisors, failure to make an adverse recommendation change would be inconsistent with fiduciary duties of the members of CureVac Boards under the laws of the Netherlands and (b) prior to making such an adverse recommendation change, to the extent requested in writing by the Company, engaged in good faith negotiations with BioNTech during the applicable four business day period to amend the Purchase Agreement in response to the intervening event in such a manner that the failure of the CureVac Boards to effect an adverse recommendation change in response to the intervening event would no longer be inconsistent with fiduciary duties of the members of the CureVac Boards under the Laws of the Netherlands; and

(ii) no earlier than the end of the applicable four business day period, the CureVac Boards have determined in good faith (after consultation with its outside legal counsel and financial advisors) in light of the intervening event and after taking into account any revised terms proposed by the Company, the failure to make an adverse recommendation change would continue to be inconsistent with fiduciary duties of the members of CureVac Boards under the laws of the Netherlands (with any material change to the circumstances causing the intervening event requiring new notice to BioNTech and a new three business day period).

The Purchase Agreement provides that nothing contained therein will prohibit CureVac or the CureVac Boards from (A) taking and disclosing to CureVac's shareholders a position contemplated by Rule 14d-9 and Rule 14e-2(a) promulgated under the Exchange Act (or any similar communication to shareholders in connection with the making or amendment of a tender offer or exchange offer) or (B) making any disclosure to the CureVac Shareholders that is required by applicable law or if the CureVac Boards determine in good faith (after consultation with outside legal counsel) that the failure to make such disclosure would reasonably be expected to be inconsistent with their duties under applicable law; provided that any disclosures with respect to any of the foregoing will be considered an adverse recommendation change unless the CureVac Boards expressly publicly reaffirm CureVac's recommendation of approval and adoption of the matters at the EGM.

3.2.4.5 Schedule TO; Form F-4

No later than the date on which the Company commences the Offer, the Company will (i) file with the SEC a Tender Offer Statement on Schedule TO with respect to the Offer, which will contain or incorporate by reference an exchange offer and a related letter of transmittal and other appropriate ancillary offer documents required to be included therein (such Schedule TO and the documents included therein, together with any amendments or supplements thereto and including exhibits thereto, we refer to as the offer documents) and (ii) cause the offer documents to be disseminated to holders of CureVac Shares to the extent required by applicable US federal securities laws and any other applicable law. No later than 10 business days following the date of the Purchase Agreement, the Company will file with the SEC a registration statement on Form F-4 to register under the Securities Act the Offer and sale of BioNTech ADSs pursuant to the Offer. The Company agreed to use its reasonable best efforts to: (a) have the Form F-4 declared effective under the Securities Act as promptly as practicable after such filing; (b) ensure that the Form F-4 complies in all material respects with the applicable provisions of the Exchange Act or Securities Act, and (c) keep the Form F-4 effective for so long as necessary to complete the issuance of BioNTech ADSs.

3.2.4.6 Access to Information

During the pre-closing period, subject to the confidentiality agreements, CureVac will, and will cause each of its subsidiaries to, and CureVac and its subsidiaries will cause its and their respective representatives to, (i) afford the Company and its representatives reasonable access on reasonable advance notice and in a manner not unreasonably disruptive to the operations of the business of CureVac and its subsidiaries, during normal business hours, to the officers, CureVac senior employees, representatives, auditors, properties, assets, offices, and other facilities and the books and records of CureVac and its subsidiaries, and (ii) promptly furnish or cause to be furnished to the Company and its representatives copies (including in electronic form) of books, records and other financial, tax, operating and other data and information (including the work papers of CureVac's or its subsidiaries' independent accountants upon receipt of any required consents from such accountants and subject to the execution of customary access letters) as the Company or its representatives may reasonably request in writing. However, the foregoing access will not permit the Company and its representatives to conduct any invasive environmental testing or sampling at any of the properties, offices, and other facilities of CureVac and its subsidiaries.

Notwithstanding the foregoing, CureVac and its subsidiaries will not be obligated to disclose any information if (i) providing such access or disclosing such information would cause significant competitive harm to CureVac or its subsidiaries, or would reasonably be expected to cause a strategic disadvantage to CureVac or its subsidiaries in ongoing legal proceedings between, among others, the Company or any of its affiliates, on the one hand, and CureVac or any of its affiliates, on the other hand, if the transactions are not consummated, provided that CureVac will use its reasonable best efforts to develop an alternative to providing such information so as to address such matters that is reasonably acceptable to the Company and CureVac, (ii) providing such access or disclosing such information would violate any applicable law (including antitrust and privacy laws) or binding agreement entered into prior to the date of the Purchase Agreement, or (iii) in the reasonable judgement of CureVac (following consultation with its outside legal counsel) that would result in the loss of attorney-client privilege with respect to such information or would constitute a waiver of any other privilege or trade secret protection held by the CureVac or any of its subsidiaries; provided that CureVac will use its reasonable best efforts (a) to allow for such access or disclosure in a manner that does not result in a loss of attorney-client privilege or waiver of any other privilege or trade secret protection or violation of any such applicable law or binding agreement or (b) to develop an alternative to providing such information so as to address such matters that is reasonably acceptable to the Company and CureVac. CureVac will advise the Company in such circumstances that it is unable to comply with the Company's reasonable requests for information pursuant to the immediately preceding sentence, and CureVac will reasonably describe the reasons why such information is being withheld. CureVac will be entitled to have representatives present at all times during any inspection by BioNTech or its representatives, and no notice, access, review, or investigation or information provided, made available or delivered to the Company or its representatives pursuant to the foregoing provisions or otherwise will affect any representations or warranties of CureVac or conditions or rights of the Company contained in the Purchase Agreement.

The Company and CureVac have agreed that all information and materials provided pursuant to the Purchase Agreement will be subject to the provisions of the confidentiality agreements, which will be deemed terminated as of the closing of the Offer.

3.2.4.7 Notice of Certain Events

Each party will give prompt notice to the other party of (i) any material written notice or other material communication received by it from any governmental authority during the pre-closing period in connection with the Purchase Agreement and the Transactions, (ii) any written notice or other communication received by it from any third party during the pre-closing period alleging any material breach of, or material default under, any material contract, or (iii) any written notice or other communication received by it from any third party during the pre-closing period alleging that the consent of such third party is or may be required in connection with the Purchase Agreement and the Transactions.

Each party will give prompt notice to the other party of (i) any action commenced or, to such party's knowledge, threatened, against it or any of its affiliates, that purports to prevent, impede, or delay the consummation of the Offer, the legal downstream merger, the post-downstream merger share sale, the cancellation or any of the other Transactions or that makes allegations that, if true, would reasonably be expected to have, individually or in the aggregate, a company material adverse effect or buyer material adverse effect, as the case may be, and (ii) (a) in the case of CureVac, the knowledge of CureVac of any breach of or inaccuracy in its representations or warranties set forth in the Purchase Agreement or failure to perform its covenants or agreements set forth in the Purchase Agreement to the extent such inaccuracy, breach, or failure to perform would reasonably be expected to give rise to, individually or in the aggregate, the failure of certain Offer conditions or (b) in the case of the Company, the knowledge of the Company of any breach of, or inaccuracy in, the representations or warranties of the Company set forth in the Purchase Agreement or failure to perform the covenants or agreements of the Company set forth in the Purchase Agreement to the extent such inaccuracy, breach, or failure to perform would reasonably be expected to, individually or in the aggregate, prevent or materially delay or materially impair the ability of the Company to perform its obligations under the Purchase Agreement or to consummate the Transactions.

The delivery of any notice described above will not cure any breach of any representation, warranty, obligation, covenant or agreement contained in the Purchase Agreement or otherwise limit or affect any remedies available in the Purchase Agreement to the party receiving such notice.

3.2.4.8 Regulatory Approvals

During the pre-closing period, CureVac and the Company have agreed to use their reasonable best efforts to consummate the Transactions, including to (i) promptly satisfy certain Offer conditions set forth in the Purchase Agreement, and (ii) avoid entry of, or effect the dissolution of any legal orders, that would have the effect of preventing or materially delaying the consummation of the Transactions. These efforts include, but are not limited to, (a) filing a Notification and Report form pursuant to the HSR Act within 20 business days of the date of the Purchase Agreement, and (b) responding as promptly as practicable to any inquiries or requests received from the United States Federal Trade Commission, the United States Department of Justice, or any other governmental authority in connection with antitrust or related matters. The Company also agrees to make all required filings with respect to other necessary antitrust approvals and other required regulatory approvals as promptly as practicable.

CureVac and the Company's outside counsel will consult and cooperate with one another and consider in good faith the views of one another in connection with any proceedings relating to antitrust laws, and each parties' outside counsel will provide to the other, in advance, any material written analyses, presentations, memoranda, briefs and proposals made or submitted to any governmental authority in connection such proceedings. Either party may limit the disclosure of commercially sensitive portions of such materials to the outside legal counsel and consultants of the other party.

The Company will consult and cooperate with CureVac, and consider in good faith the views of CureVac, in connection with, and will provide to CureVac in advance, any material written analyses, presentations, memoranda and briefs related to the Transactions, made or submitted to any governmental authority in connection with proceedings relating to any antitrust law and any other required regulatory approvals; provided that each party may limit disclosure of commercially sensitive portions of such materials. CureVac will not make any submissions related to the Transactions to any governmental authority in relation to any antitrust law and other required regulatory approvals without the prior approval of the Company, such approval not to be unreasonably withheld, delayed or conditioned; provided that no prior approval is required for the submission of the Notification and Report form pursuant to the HSR Act or any submission related to the transactions reasonably required to comply with CureVac's statutory obligations.

CureVac and the Company will give each other prompt notice of any pending or threatened request, inquiry, or other action brought by a governmental authority, or brought by a third party to a governmental authority, in each case with respect to the Transactions under any antitrust laws, which we refer to as an antitrust investigation. To the extent permitted by applicable law and other applicable limitations (including the preservation of attorney-client privilege), each party will use its reasonable best efforts to (i) keep the other informed of the status of any antitrust investigation, (ii) promptly notify each other's outside counsel of any material communications received from any governmental authority in connection with any antitrust investigation, and (iii) give each other's outside counsel reasonable advance notice of all material meetings and teleconferences with any such governmental authority. CureVac and the Company will consult with each other in advance and cooperate with the other party's outside counsel and consider in good faith each other's views in connection with any such antitrust investigation, including by providing the other party reasonable opportunity to comment on any material analysis, memorandum, or other presentation made or submitted to any such governmental authority.

CureVac will promptly furnish to the Company all information required or requested to be included in any application or filing or submission made in connection with applicable antitrust laws or for any other required regulatory approvals. CureVac will have the right to review and, to the extent reasonably practicable, to be consulted in good faith on any material information relating to it or its affiliates that might appear in any such applications or filings, and its comments will be considered by BioNTech in good faith. In the case of information (i) which is commercially sensitive or (ii) the provision of which would infringe antitrust laws, disclosure of such information may be limited to the other party's outside legal counsel, and such counsel will not disclose such information to the other party.

Each of the Company and CureVac further agrees to cooperate with the other and use its reasonable best efforts in order to resolve any investigation or other inquiry concerning the Transactions initiated by the United States Federal Trade Commission, the Antitrust Division of the United States Department of Justice or any governmental authority. Each of the Company and CureVac's outside counsel will promptly notify the other's outside counsel of any material written notice or other communication received by such party from any governmental authority in connection with the Transactions and, to the extent reasonably practicable, and allowed by the government authority, all material discussions, telephone calls and meetings with a governmental authority regarding the Transactions will include the representatives of CureVac and the Company.

The Company will not be required to, and "reasonable best efforts" will in no event require, or be construed to require, the Company or any of its affiliates (as defined in the Purchase Agreement) to (i) initiate, litigate, challenge, defend or otherwise participate or take any action with respect to any action, inquiry, or investigation by, against or involving any third party or governmental authority with respect to the Transactions, (ii) enter into, offer, or agree to, any commitment, settlement, undertaking, consent decree, stipulation, or agreement with any governmental authority in connection with the Transactions, (iii) otherwise take any other steps or actions to defend against, vacate, modify, or suspend any injunction, order, judgment, ruling, decree, or decision of any governmental authority, (iv) agree, propose, negotiate, offer, sell, divest, lease, license, transfer, dispose of, or otherwise encumber or hold separate (including by establishing a trust, licensing any intellectual property rights (whether pursuant to an exclusive or nonexclusive license or otherwise)), or take any other action (including by providing its consent to permit CureVac or any of its subsidiaries to take any of the foregoing actions), or otherwise offer or agree to do any of the foregoing, with respect to any of the businesses, assets or properties of the Company, CureVac or any of their respective affiliates or subsidiaries, (v) terminate any existing relationships or contractual rights or obligations, (vi) take any action, or commit to take any action, or to accept any restriction, commitment, or condition, involving the Company, CureVac, or any of their respective affiliates or subsidiaries, or (vii) otherwise offer to take or offer to commit to take any action

that would limit the Company's or any of its affiliates' freedom of action with respect to, or ability to retain, operate, or otherwise exercise full rights of ownership with respect to, businesses, assets or properties of the Company, CureVac, or any of their respective affiliates or subsidiaries (or equity interests held by the Company or any of its affiliates in entities with businesses, assets or properties).

The Company will have principal right and responsibility for determining the timing and sequence of seeking the required authorizations, consents, expirations, or terminations of any waiting periods, orders, and approvals under applicable antitrust laws and other laws and from any governmental authorities and strategy with respect to obtaining any such authorizations, consents, orders, expiration or termination of a waiting period and approvals. CureVac will, and will cause its subsidiaries to, take such actions as reasonably requested by BioNTech in connection with obtaining any such authorizations, consents, expirations, or terminations of any waiting periods, orders and approvals.

The Company and CureVac agree to refrain from, and to cause each of their respective affiliates to refrain from, acquiring or agreeing to acquire any assets or businesses that would reasonably be expected to (i) prevent, materially impede, or materially delay receipt of any authorizations, consents, orders, or approvals of governmental authorities, or (ii) prevent, materially delay, or impede the closing of the Offer, or (iii) cause any governmental authority to object to such transactions.

3.2.4.9 Public Announcements

CureVac and the Company have agreed, subject to certain exceptions, that they will receive consent (which consent is not to be unreasonably withheld, conditioned, or delayed) from each other before issuing, and provide each other with opportunity to review and comment upon, any press release, public announcement, public statement, or other public disclosure with respect to the Purchase Agreement or the Transactions (subject to certain exceptions, including as required by applicable law).

3.2.4.10 Director and Officer Liability

From closing of the Offer until six years after the completion of the Transactions, the Company will cause CureVac and its subsidiaries to indemnify and hold harmless, and provide advances to, the present and former directors and officers of CureVac or its subsidiaries, which we refer to as "indemnified persons", in respect of acts or omissions occurring at or prior to the completion of the Transactions pursuant to, in accordance with the terms of and to the fullest extent provided for in CureVac's organizational documents, as they are in force on the date of the Purchase Agreement and any relevant indemnification agreements and as permitted by applicable law. From closing of the Offer until six years after the completion of the Transactions, the Company will cause CureVac and its subsidiaries to honor and fulfill the obligations of CureVac and its subsidiaries under any and all indemnification agreements in effect as of the date of the Purchase Agreement between CureVac or any of its subsidiaries and any indemnified person as listed in the CureVac disclosure letter.

In addition, from the closing of the Offer until six years after the completion of the Transactions, the Company will cause CureVac and its subsidiaries to cause CureVac's articles of association and rules and regulations (or other similar organizational documents) of CureVac and its subsidiaries to contain provisions with respect to the indemnification of all indemnified persons that are no less advantageous in the aggregate to the intended beneficiaries than the corresponding provisions contained in CureVac's and its subsidiaries' organizational documents in effect on the date of the Purchase Agreement. To the maximum extent permitted by applicable law, such indemnification will be mandatory rather than permissive.

In addition, the Company will obtain, or cause to be obtained, as of the closing of the Offer, a "tail" insurance policy with a claims period of six years after the completion of the Transactions with respect to directors' and officers' liability insurance covering each person currently covered by CureVac's directors' and officers' liability insurance policy for acts or omissions occurring at or prior to the completion of the Transactions on terms that are no less favorable than those of such policy of CureVac in effect on the date of the Purchase Agreement, which insurance will be in effect and prepaid for such period, subject to a premium cap.

3.2.4.11 Anti-Takeover Measures

CureVac has agreed that CureVac and the CureVac Boards will take all actions within their power and authority necessary so that no anti-takeover measures are or become applicable to the Transactions. If any anti-takeover measure becomes applicable to any of the Transactions, CureVac and the CureVac Boards will grant such approvals and take such actions within their power and authority as are necessary, so that any such Transactions may be consummated as promptly as practicable on the terms contemplated by the Purchase Agreement, and otherwise act within their power and authority to eliminate such anti-takeover measures in respect of such Transactions.

3.2.4.12 Employee Matters

For a one-year period beginning on the date of the closing of the Offer, each individual who is an employee of CureVac or its subsidiaries immediately prior to the closing of the Offer and who remains employed by CureVac or any of its affiliates (including, following the closing of the Offer, the Company or any of its subsidiaries) as of immediately following the closing of the Offer, each of which we refer to as a continuing employee, will receive from the Company (or its applicable affiliate) (i) at least the same base salary and the same target annual bonus opportunity that was provided to such continuing employee immediately prior to the closing of the Offer; and (ii) employee benefits (excluding severance, equity, or equity-based incentive awards, change in control benefits, retiree medical benefits, and defined benefit retirement benefits) that are substantially similar in the aggregate to the employee benefits provided to continuing employees immediately prior to the closing of the Offer.

The Company will, and will cause each of its controlled affiliates to, use commercially reasonable efforts to (i) waive all limitations as to any pre-existing condition or waiting periods in its applicable welfare plans with respect to participation and coverage requirements applicable to each continuing employee under any welfare plans that such continuing employee may be eligible to participate in after the closing of the Offer, and (ii) credit each continuing employee for any copayments, deductibles, offsets, or similar payments made under a CureVac plan during the plan year that includes the closing of the Offer for purposes of satisfying any applicable copayment, deductible, offset, or similar requirements under the comparable plans of the Company or any of its controlled affiliates. As of the closing of the Offer, the Company will, or will cause any of its controlled affiliates to, credit to continuing employees the amount of vacation time that such employees had accrued under any applicable CureVac plan as of the closing, in each case, insofar as not prohibited by applicable law. In addition, as of the closing of the Offer, the Company will, and will cause its controlled affiliates to, give continuing employees full credit for purposes of eligibility, vesting, and determination of level of vacation benefits under any employee benefit and compensation plans, or arrangements (excluding for any purpose benefits under defined benefit plans, retiree medical plans, or frozen or grandfathered benefit plans) maintained by the Company or its controlled affiliates that such continuing employees may be eligible to participate in after the closing of the Offer for such continuing employees' service with CureVac or any of its subsidiaries to the same extent that such service was credited for purposes of any comparable CureVac plan immediately prior to the closing of the Offer, except, in each case, to the extent such treatment would result in duplicative benefits.

Unless otherwise requested in writing by the Company no later than three days prior to the closing of the Offer, the CureVac Boards or board of directors of the applicable subsidiary (or the appropriate committee thereof) will take actions necessary to terminate any CureVac plan intended to include a United States Internal Revenue Code section 401(k) arrangement, such termination to be effective as of the day immediately prior to the closing of the Offer and contingent upon the closing of the Offer. CureVac will provide the Company, prior to the closing of the Offer, with evidence that such plan has been terminated (the form and substance of which will be subject to reasonable review and comment by the Company). In the event of such a termination, the Company will establish or designate a 401(k) retirement plan maintained by the Company or an affiliate to accept the rollover of participant accounts distributed from the 401(k) plan maintained by CureVac (including promissory notes evidencing employee loans, if any).

From and after the closing of the Offer, the Company will cause CureVac and its subsidiaries to honor the terms of all collective bargaining agreements to which CureVac or its subsidiaries are bound. In addition, the terms of employment of all continuing employees represented by a labor union, works council, or other labor organization in connection with their employment or any other continuing employees employed in any jurisdiction where it is not permitted to differentiate between union and non-union employees in terms of compensation and/or benefits will be governed by any such obligations, rather than the terms of the Purchase Agreement.

3.2.4.13 Other Covenants and Agreements

The Purchase Agreement contains certain other covenants and agreements, including, among other things, covenants and agreements related to the following:

Compensation Arrangements. Prior to the closing of the Offer, CureVac (acting through the CureVac Boards and the compensation committee of the CureVac supervisory board) will take all steps that may be required, necessary, or advisable to cause (a) each employment compensation arrangement (as defined in the Purchase Agreement) that has been or, after the date of the Purchase Agreement will be entered into by CureVac or any of its subsidiaries with any current or former CureVac service provider, (b) the treatment of the company equity awards, in accordance with the terms set forth in the Purchase Agreement, and (c) the applicable terms set forth in sections "*3.2.4.10 Director and Officer Liability*" and "*3.2.4.12 Employee Matters*" to be approved as an "employment compensation, severance or other employee benefit arrangement" within the meaning of Rule 14d-10(d)(2) promulgated under the Exchange Act and to satisfy the requirements of the non-exclusive safe harbor set forth in Rule 14d-10(d) promulgated under the Exchange Act.

Delisting. CureVac has agreed that, prior to the Acceptance Time, CureVac will cooperate with the Company and use reasonable best efforts to take, or cause to be taken, all actions, and do or cause to be done all things, reasonably necessary, proper, or advisable on its part under applicable laws and rules and policies of Nasdaq to cause the delisting of CureVac and the CureVac Shares from Nasdaq as promptly as practicable after the Offer closing and the deregistration of the CureVac Shares under the Exchange Act as promptly as practicable after such delisting.

Tax Matters. The Company has agreed not to make (and to cause each of its affiliates not to make) any election under Section 338 of the United States Internal Revenue Code of 1986, as amended, which we refer to as the "Code", or any similar provision of any U.S. state or local or foreign law with respect to CureVac or any of its subsidiaries.

Except pursuant to the New Topco U.S. tax election (as defined in the Purchase Agreement), BioNTech will not make any entity classification election pursuant to section 301.7701-3 of the U.S. treasury regulations, which we refer to as the "Treasury Regulations", with respect to the Company or any of its subsidiaries, which election would be effective on or prior to the cancellation effective time.

The Company will not take any action, or knowingly fail to take any action, where such action or failure to act would reasonably be expected to prevent the Offer, taken together with the legal downstream merger, the post-downstream merger share sale, the cancellation and the New Topco U.S. tax election, from qualifying as one or more "reorganizations" within the meaning of Section 368(a) of the Code and the Treasury Regulations.

During the one-year period beginning on the date of the cancellation effective time, the Company will not transfer any of the assets of CureVac and, after the New Topco U.S. tax election pursuant to conditions set forth above under section "*3.2.2 The Post-Offer Reorganization*", New Topco to any entity that is treated as a corporation for U.S. federal income tax purposes of which the Company directly owns, or is considered to directly own, through New Topco, for U.S. federal income tax purposes, at least 80 percent of the total combined voting power of all classes of stock entitled to vote and at least 80 percent of each class of other stock.

Litigation. CureVac and the Company have agreed that CureVac will control any action brought against CureVac or any of its subsidiaries or their directors or officers relating in any way to the Purchase Agreement or the Transactions, which together we refer to as Transaction litigation; provided that CureVac will give the Company the right to (i) review and comment in advance on all filings or responses to be made by CureVac in connection with any transaction litigation (and any amendments thereto) and CureVac will consider in good faith any comments proposed by the Company, (ii) participate in (at BioNTech's expense), but not control, the defense of such Transaction litigation, (iii) consult on any settlement with respect to such Transaction litigation, and (iv) participate in any negotiations or mediation with respect to such Transaction litigation, and no settlement will be agreed to without the Company's prior written consent in the Company's sole discretion. CureVac will promptly notify

BioNTech of any Transaction litigation brought, or, to the knowledge of CureVac, threatened in writing, against CureVac, members of the CureVac Boards, or any subsidiary of CureVac and will keep the Company apprised of proposed strategy and other significant decisions with respect to the Transaction litigation (to the extent that the attorney-client privilege between CureVac and its counsel is not undermined or otherwise adversely affected).

With respect to pending litigation among the Company and CureVac (and other third parties, as the case may be), the Company and CureVac have agreed to explore amicable solutions and to implement them, on a case-by-case basis, if and when mutually agreed. To enable such exploration, the Company and CureVac and their respective affiliates will take steps to suspend and preserve all on-going proceedings, and not institute new proceedings, at least until the earlier of (i) the closing of the Offer, (ii) the termination of the Purchase Agreement in accordance with its terms, (iii) the Company no longer performing its obligations under the Purchase Agreement, the satisfaction of which are required for the closing of the Offer in accordance with the Purchase Agreement, and (iv) the outside date, including obtaining relevant consents from or consulting with third parties, as applicable.

Business Continuity. After the closing of the Offer, the Company and CureVac will use reasonable efforts to safeguard that (i) CureVac S.E. continues its biopharmaceutical research and development business, and (ii) CureVac Manufacturing GmbH continues its manufacturing business, in each case with respect to qualitative characteristics such as services or products offered, customer and supplier base, markets served and qualification of their employees.

Tax Free Reorganization Matters. The Company and CureVac intend that, for U.S. federal income tax purposes, the Offer, taken together with the legal downstream merger, the post-downstream merger share sale, the cancellation and the New Topco U.S. tax election, will qualify as one or more "reorganizations" within the meaning of Section 368(a) of the Code and the Treasury Regulations to which one or both the Company and CureVac are to be parties under Section 368(b) of the Code and the Treasury Regulations and the Purchase Agreement is intended to be, and is adopted as, a plan of reorganization for purposes of Sections 354, 361 and the 368 of the Code and within the meaning of Treasury Regulations Section 1.368-2(g). None of BioNTech or CureVac knows of any fact or circumstance (without conducting independent inquiry or diligence of the other relevant party), or has taken or will take any action, if such fact, circumstance or action would be reasonably expected to cause the Offer, taken together with the legal downstream merger, the post-downstream merger share sale, the cancellation and the New Topco U.S. tax election, to fail to qualify as one or more "reorganizations" within the meaning of Section 368(a) of the Code and the Treasury Regulations. The Offer, taken together with the legal downstream merger, the post-downstream merger share sale, the cancellation and the New Topco U.S. tax election will be reported by the parties for all tax purposes in accordance with the foregoing, unless otherwise required by a governmental authority as a result of a "determination" within the meaning of Section 1313(a) of the Code.

In connection with the filing of the Offer documents (including any amendment or supplement thereto), each of the Company and CureVac will reasonably cooperate with each other in order to obtain a written tax opinion from one or both of each of its outside counsel or other nationally recognized tax counsel reasonably acceptable to the Company or CureVac, solely to the extent one or both of such tax opinions is required by the SEC. Each tax opinion required by the SEC will conclude, on the basis of customary representations, assumptions and undertakings set forth or referred to in such tax opinion and in the related tax representation letters, the Offer, taken together with the legal downstream merger, the post-downstream merger share sale, the cancellation and the New Topco U.S. tax election will qualify as one or more "reorganizations" within the meaning of Section 368(a) of the Code and the Treasury Regulations thereunder.

3.2.5 Conditions to Closing of the Offer

Notwithstanding any other provision of the Purchase Agreement or the Offer and in addition to the Company's right and obligation to extend, terminate, amend, or modify the Offer pursuant to the provisions of the Purchase Agreement and subject to any applicable rules and regulations of the SEC, the Company will not be required to, or, in the case of the condition set forth in item (x) below, may not be permitted to, accept for exchange or exchange any CureVac Share validly tendered and not properly withdrawn pursuant to the Offer unless, as of the scheduled Expiration Time, the following conditions are satisfied, as set forth in the Purchase Agreement:

(i) a number of CureVac Shares having been validly tendered and not properly withdrawn, that, together with the CureVac Shares then owned by the Company or its affiliates, would be sufficient to meet the Minimum Condition; provided that if all other Offer conditions have been satisfied and the Company has previously extended the Offer on four or more occasions of 10 business days each, the Company may, in its sole discretion, reduce the Minimum Condition to 75% of CureVac's issued and outstanding capital;

(ii) certain necessary antitrust approvals will have been received, or be deemed to have been received due to the expiry or termination of their relevant waiting periods or applicable statutory deadlines (and any extension thereof) or through any other informal comfort letter that is satisfactory to the Company, and be in full force and effect;

(iii) absence of any applicable law or order of a governmental authority prohibiting, rendering illegal or enjoining the consummation of the Offer or the other Transactions, including the post-offer reorganization, the legal downstream merger, the post-downstream merger share sale, and the cancellation;

(iv) the truth and correctness in all respects at and as of the date of the Purchase Agreement and at and as of the Expiration Time with the same effect as though made at and as of the Expiration Time of representations and warranties of CureVac regarding the nonexistence of a company material adverse effect since December 31, 2024;

(v) the truth and correctness in all respects (except for de minimis inaccuracies) at and as of the date of the Purchase Agreement and at and as of the Expiration Time with the same effect as though made at and as of the Expiration Time (except to the extent expressly made at and as of an earlier date, in which case at and as of such earlier date) of representations and warranties of CureVac regarding its authorized and issued and outstanding share counts, capitalization, and subsidiaries (including their capitalization);

(vi) the truth and correctness in all material respects at and as of the date of the Purchase Agreement and at and as of the Expiration Time with the same effect as though made at and as of the Expiration Time (except to the extent expressly made at and as of an earlier date, in which case at and as of such earlier date) of representations and warranties of CureVac regarding its corporate existence and powers and authorizations to carry on its business, enter into the Purchase Agreement and consummate the transactions, material contracts, and the fees of its financial advisor;

(vii) the truth and correctness (disregarding all materiality qualifications and limitations) at and as of the date of the Purchase Agreement and at and as of the Expiration Time with the same effect as though made at and as of the Expiration Time (except to the extent expressly made at and as of an earlier date, in which case at and as of such earlier date) of all other representations and warranties of CureVac not specified in the foregoing items (iv) through (vi), except where the failure to be true and correct would not have or reasonably be expected to have, individually or in the aggregate, a company material adverse effect;

(viii) CureVac will have performed or complied with, in all material respects, each of the obligations, agreements and covenants required to be performed by, or complied with by, it under the Purchase Agreement at or prior to the Expiration Time;

(ix) since the date of the Purchase Agreement, there will not have occurred any company material adverse effect (as defined and described in section "*3.2.3.1 Representations and Warranties of CureVac*") that is continuing (excluding for this purpose any company material adverse effects that prevent or materially impair the ability of CureVac to consummate the Transactions);

(x) since the date of the Purchase Agreement, there will not have occurred any buyer material adverse effect (as defined and described in section "*3.2.3.2 Representations and Warranties of BioNTech*") that is continuing (excluding for this purpose any buyer material adverse effects that prevent or materially impair the ability of the Company to consummate the Transactions);

(xi) adoption of resolutions at the EGM approving the required resolutions;

(xii) delivery by CureVac to the Company of a certificate signed by an executive officer of CureVac, dated as of the Expiration Time, certifying as to the satisfaction of the conditions specified in the foregoing items (iv) through (ix);

(xiii) there may be no stop order suspending the effectiveness of the registration statement filed with the SEC on Form F-4;

(xiv) certain required regulatory approvals will have been obtained, or be deemed to have been obtained by applicable law, as a result of the lapse, expiration, or termination of waiting periods, or the applicable governmental authority for such approvals having declined jurisdiction or granted a derogation; and

(xv) no termination of the Purchase Agreement in accordance with the terms of the Purchase Agreement shall have occurred.

Except for the condition set forth in item (x) above, which is for the sole benefit of CureVac and may only be waived by CureVac in writing, the foregoing conditions are for the sole benefit of the Company and may be asserted by the Company regardless of the circumstances giving rise to any such conditions and, other than the Minimum Condition, may be waived, subject to applicable law, by the Company in whole or in part at any time and from time to time in its sole discretion, in each case, subject to the terms of the Purchase Agreement.

3.2.6 Termination of the Purchase Agreement

3.2.6.1 Termination

The Purchase Agreement may be terminated and the Transactions may be abandoned at any time prior to the Acceptance Time:

(i) by mutual written consent of the Company and CureVac;

(ii) by either the Company and CureVac, if:

a. the Acceptance Time has not occurred on or before the outside date, which we refer to as an "**outside date termination**", provided that the outside date termination will not be available to any party that is in breach of its covenants or agreements under the Purchase Agreement where such breach proximately caused the failure of the Acceptance Time to occur by the outside date;

b. if the offer condition relating to there not being a law or order issued by a governmental authority prohibiting the consummation of the Offer is not satisfied, and the applicable law or order has become final, permanent, and non-appealable, which we refer to as a "**restraints termination**", provided that the party seeking to exercise the restraints termination must have complied in all material respects with its obligations described under "*3.2.4.8 Regulatory Approvals*" above;

c. the Offer has expired without all of the conditions to the Offer having been satisfied, which we refer to as a "**condition failure termination**", provided that the condition failure termination will not be available to any party to the Purchase Agreement whose breach of any provision of the Purchase Agreement proximately caused the Offer to expire without all of the conditions to the Offer having been satisfied, and will not be available to the Company if the Company has not extended the Offer in circumstances where BioNTech is required to extend the Offer under the Purchase Agreement; or

(iii) by the Company:

a. if CureVac breaches any of its representation or warranties or fails to perform any of its covenants or agreements set forth in the Purchase Agreement, which breach or failure would result in any of the conditions to the Offer not being satisfied and such breach or failure cannot be or has not been cured by CureVac by the earlier of (x) the second business day prior to the outside date or (y) 30 days after receipt by CureVac of written notice of such breach or failure, which we refer to as a CureVac breach termination, provided that a CureVac breach termination will not be available if BioNTech is then in material breach of its representations or warranties or then materially failing to perform its covenants, obligations or agreements under the Purchase Agreement;

b. following an adverse recommendation change, which we refer to as an "**adverse recommendation change termination**";

c. if the subsequent EGM has been held and been concluded and the governance resolutions have not been adopted, or the post-offer reorganization resolutions have not been adopted, which we refer to as an "**EGM termination**"; or

d. following a willful breach of any of CureVac's obligations as set forth above under section "*3.2.4.3 No Solicitation*" in any material respect, which we refer to as a "**solicitation breach termination**"; or

(iv) by CureVac:

a. if (w) CureVac has received a superior proposal, (x) the CureVac Boards approve, and CureVac concurrently with or immediately following the termination of the Purchase Agreement, enters into, a definitive agreement with respect to such superior proposal, (y) prior to or concurrently with such termination, CureVac pays to BioNTech the company termination compensation (as defined in the Purchase Agreement), and (z) CureVac has not breached in any material respect any of its obligations restricting solicitation under the Purchase Agreement, which we refer to as a "**superior proposal termination**";

b. if BioNTech breaches any of its representations or warranties or fails to perform any covenant or agreement set forth in the Purchase Agreement, which breach or failure would result in any of the conditions to the Offer not being satisfied and such breach or failure cannot be or has not been cured by the earlier of the second business day prior to the outside date or 30 days after receipt by the Company of written notice of such breach or failure, which we refer to as a "**BioNTech breach termination**", provided that a BioNTech breach termination will not be available if CureVac is then in material breach of its representations or warranties or then materially failing to perform its covenants, obligations, or agreements contained in the Purchase Agreement;

c. if (x) the Acceptance Time has occurred and (y) the first capital increase (as defined in the Purchase Agreement) has not become effective within ninety calendar days after the Acceptance Time; or

d. if (v) the Acceptance Time has occurred, (w) the Company has failed to exchange the first company shares (as defined in the Purchase Agreement) within ten business days following the effectiveness of the first capital increase, (x) the first capital increase has become effective, (y) CureVac delivers written notice to the Company demanding that the Company after the occurrence of the events described in clauses (v), (w) and (x) make (or cause to be made) such exchange, and (z) BioNTech fails to make (or cause to be made) such exchange within three business days of receiving such notice.

3.2.6.2 Termination Payments

CureVac and the Company will each pay all of its own fees, costs, and expenses incurred in connection with the Transactions (whether or not they are consummated). In addition, CureVac has agreed to pay BioNTech an amount equal to $43,750,000 (without interest and less any applicable withholding taxes), which we refer to as the "**company termination compensation**", if:

(i) CureVac terminates the Purchase Agreement pursuant to a superior proposal termination;

(ii) the Company terminates the Purchase Agreement pursuant to an adverse recommendation change termination or a solicitation breach termination; or

(iii) (x) an alternative acquisition proposal has been publicly made or otherwise become generally known to the public prior to the Acceptance Time, (y) the Purchase Agreement is terminated (a) by the Company or CureVac pursuant to an outside date termination (subject to certain exceptions), (b) by CureVac or the Company pursuant to a condition failure termination and the Minimum Condition has not been satisfied as of the Expiration Time (provided that the antitrust clearance condition and the restraints condition have been satisfied as of such date), or (c) by the Company pursuant to a CureVac breach termination or an EGM termination and (z) within twelve months of such termination, CureVac enters into a definitive agreement with any third party to consummate, or consummates, any transaction referenced in the definition of alternative acquisition proposal (provided that any references in such definition to 20% will be deemed to be references to 50%) whether or not such third party is the same party whose alternative acquisition proposal has been publicly made or otherwise become generally known.

The Company has agreed to pay CureVac an amount equal to $62,500,000, which we refer to as the "**purchaser termination compensation**", if:

- the Company or CureVac terminates the Purchase Agreement pursuant to an outside date termination, but only if the conditions to the Offer that are still unsatisfied at the time of such termination are either the antitrust clearance condition or the restraints condition (but only if the legal restraint put in place by any governmental authority of competent jurisdiction is based on antitrust law to prevent the Offer, the legal downstream merger, the post-downstream merger share sale, the cancellation or the other Transactions, or to impose a condition or require a remedy pursuant to any antitrust law that the Company is not required by the Purchase Agreement to accept or agree to);
- the Company or CureVac terminates the Purchase Agreement pursuant to a restraints termination (but only if the legal restraint put in place by any governmental authority of competent jurisdiction is based on antitrust law to prevent the Offer, the legal downstream merger, the post-downstream merger share sale, the cancellation or the other Transactions, or to impose a condition or require a remedy pursuant to any antitrust law that the Company is not required by the Purchase Agreement to accept or agree to); or
- the Company or CureVac terminates the Purchase Agreement pursuant to a condition failure termination, but only if the conditions to the Offer that are still unsatisfied at the time of such termination are any of the antitrust clearance condition or the restraints condition (but only if the legal restraint put in place by any governmental authority of competent jurisdiction is based on antitrust law to prevent the Offer, the legal downstream merger, the post-downstream merger share sale, the cancellation or the other Transactions, or to impose a condition or require a remedy pursuant to any antitrust law that the Company is not required by the Purchase Agreement to accept or agree to).

The Company is not obligated to pay the purchaser termination compensation if CureVac's breach of its representations, covenants, or agreements under the Purchase Agreement proximately caused a legal restraint on the satisfaction of the Offer, or if the Company was, at the time of CureVac's termination, entitled to terminate pursuant to a CureVac breach termination.

The parties to the Purchase Agreement have agreed that the purchaser termination compensation and company termination compensation will, as applicable and except for claims for the willful breach of the Purchase Agreement or fraud, be the sole and exclusive remedy of each party and its respective affiliates, on one hand, against the other party and its former, current, or future shareholders, directors, officers, affiliates, agents or other representatives, on the other hand, for any loss suffered as a result of any breach of any representation, warranty, covenant, or agreement in the Purchase Agreement or the Transactions. Each party will compensate the other for all expenses incurred in connection with enforcing the terms of the Purchase Agreement with respect to payment of either the purchaser termination compensation or the company termination compensation. Upon payment of either such amount, the paying party (and its former, current, or future shareholders, directors, officers, affiliates, agents, or other representative) will cease to have any liability under the Purchase Agreement, except with respect to fraud or willful breach.

3.2.6.3 Effect of Termination

If the Purchase Agreement is validly terminated in accordance with its terms, notice of such termination will be given to the non-terminating party, the Purchase Agreement will become void and of no effect, with no liability remaining on the part of any party to the Purchase Agreement (or any director, officer, employee, shareholder, representative, agent, or advisor of such party). In no event will any such termination relieve any party to the Purchase Agreement from its obligations under the confidentiality agreements and under the Purchase Agreement (i) restricting public disclosure of the Transactions, (ii) with respect to the payment of any expenses and each of the purchaser termination compensation and company termination compensation under the Purchase Agreement, and (iii) certain other provisions regarding termination and other miscellaneous provisions. In no event will either party to the Purchase Agreement be relieved of any liability for damages resulting from such party's fraud or willful breach of the Purchase Agreement prior to its termination.

3.2.7 Miscellaneous Provisions

3.2.7.1 Specific Performance

The parties to the Purchase Agreement have agreed that irreparable damage would occur if any provision of the Purchase Agreement were not performed in accordance with the Purchase Agreement and that the parties to the Purchase Agreement will be entitled to seek injunctive relief to prevent breaches of the Purchase Agreement or to enforce specifically the performance of the terms and provisions of the Purchase Agreement, in addition to any other remedy to which they are entitled at law or in equity.

3.2.7.2 Amendment; Waiver

Except as otherwise expressly provided for in the offer conditions, the Purchase Agreement may only be amended or supplemented at any time by additional written agreements signed by, or on behalf of, the parties to the Purchase Agreement.

Additionally, no provision of the Purchase Agreement may be waived or extended except by a written instrument signed by the party against whom the waiver or extension is to be effective. No failure or delay on the part of any party in the exercise of any right under the Purchase Agreement will impair such right or be construed to be a waiver of, or acquiescence in, any breach of any representation, warranty or agreement in the Purchase Agreement, nor will any single or partial exercise of any such right preclude any other or further exercise thereof or of any other right.

3.2.7.3 Governing Law

The Purchase Agreement will be governed by and construed in accordance with Delaware law, except that any matters concerning or implicating the fiduciary duties of the members of the CureVac Boards will be governed by and construed in accordance with the applicable fiduciary duty laws of the Netherlands.

3.2.7.4 Dispute Resolution

Any dispute, controversy, or claim arising out of or relating to the Purchase Agreement (and any subsequent amendments thereof), or the breach, termination, or validity thereof, or the transactions, each a dispute, will be resolved in accordance with this section.

Consent to Jurisdiction. For purposes of resolving any dispute, the Company and CureVac each (i) irrevocably and unconditionally submit to the personal jurisdiction of the Court of Chancery of the State of Delaware (or, only if such court declines to accept jurisdiction over a particular matter, then in the United States District Court for the District of Delaware, or if jurisdiction is not then available in the United States District Court for the District of Delaware (but only in such event), then in any Delaware state court sitting in New Castle County), which we refer to as the chosen court, (ii) will not attempt to deny or defeat such personal jurisdiction by motion or other request for leave from any such chosen court, (iii) waives any claim of improper venue or any claim that the chosen court is an inconvenient forum, and (iv) agrees that, subject to section (b) below, it will not bring any action relating to a dispute in any court other than the chosen court. Each of the Company and CureVac irrevocably and unconditionally waives, and agrees not to assert, by way of motion or as a defense, counterclaim or otherwise, in any action or proceeding arising out of or relating to the Purchase Agreement or the Transactions: (a) any claim that the Company or CureVac is not personally subject to the jurisdiction of the chosen courts as described in the Purchase Agreement for any reason; (b) that it or its property is exempt or immune from jurisdiction of any such chosen court or from any legal process commenced in such courts (whether through service of process, attachment prior to judgment, attachment in aid of execution of judgment, execution of judgment, or otherwise); and (c) that (x) the action in any such court is brought in an inconvenient forum, (y) the venue of such action is improper, or (z) the Purchase Agreement, or the subject matter thereof, may not be enforced in or by such chosen court.

Arbitration. In the event that a chosen court of first instance declines jurisdiction over an action brought in accordance with this section, the associated dispute will be resolved by final and binding arbitration administered by the International Chamber of Commerce, which we refer to as ICC, in accordance with its rules of arbitration in effect at the time, which we refer to as rules of arbitration, except as modified in the Purchase Agreement.

Waiver of jury trial. The Company and CureVac have acknowledged and agree that any controversy that may arise under the Purchase Agreement is likely to involve complicated and difficult issues and, therefore, the Company and CureVac each have irrevocably and unconditionally waived any right it may have to a trial by jury in respect of any action (whether based on contract, tort or otherwise) directly or indirectly arising out of or relating to the Purchase Agreement, the other documents and agreements delivered in connection therewith or the Transactions or the actions of the Company and CureVac in the negotiation, administration, performance and enforcement thereof.

3.3 The Tender and Support Agreements

This section of this Prospectus summarizes the material provisions of the tender and support agreements, a form of which is included in section "*22 Form Of Tender and Support Agreement*". Shareholders of CureVac are not a third-party beneficiary of the tender and support agreements and therefore may not directly enforce any of their terms and conditions.

dievini, KfW, Glaxo Group Limited and all members of the CureVac Boards which hold approximately 57% of CureVac Shares in the aggregate (based on the number of CureVac Shares held as stated in the respective tender and support agreement and 225,181,647 total CureVac Shares), have entered into tender and support agreements pursuant to which they have agreed, among other things, to (i) accept the Offer in respect of CureVac Shares held by them, (ii) vote in favor of all resolutions proposed by CureVac at the EGM (and any subsequent EGM) and against certain proposals incompatible with the Transactions, subject to the conditions and in accordance with the terms set forth therein.

The following table provides an overview of the persons having entered into tender and support agreements, the number of CureVac Shares held as of the date of the respective tender and support agreement and the percentage of the total amount of Offer ADS:

Person or Entity	Number of CureVac Shares held as of the date of the tender and support agreement	Percentage of the total Offer ADS offered
KfW,		
Palmengartenstraße 5-9, 60325 Frankfurt am Main, Germany	29,871,441	13.3%
dievini:		
dievini Hopp BioTech holding GmbH & Co. KG, business address Johann-Jakob-Astor-Str. 57, 69190 Walldorf, Germany	70,181,760	31.2%
DH-LT-Investments GmbH, business address Opelstraße 28, 68789 St. Leon-Rot, Germany	8,753,595	3.9%
Zweite DH Verwaltungs GmbH, business address Opelstraße 28, 68789 St. Leon-Rot, Germany	3,404,672	1.5%
DH-Assets GmbH & Co. KG, business address Opelstraße 28, 68789 St. Leon-Rot, Germany	33,517	0.01%
Glaxo Group Limited,		
Gsk Medicines Research Centre, Gunnels Wood Road, Stevenage, United Kingdom, SG1 2NY	16,591,937	7.4%
Members of the CureVac Boards:		
Debra Barker, business address c/o CureVac N.V., Friedrich-Miescher-Straße 1572076 Tuebingen, Germany	22,686	0.01%
Craig Tooman, business address c/o CureVac N.V., Friedrich-Miescher-Straße 1572076 Tuebingen, Germany	27,793	0.01%
Birgit Hofmann, business address c/o CureVac N.V., Friedrich-Miescher-Straße 1572076 Tuebingen, Germany	—	—
Axel Malkomes, business address c/o CureVac N.V., Friedrich-Miescher-Straße 1572076 Tuebingen, Germany	1,805	0.00%
Alexander Zehnder, business address c/o CureVac N.V., Friedrich-Miescher-Straße 1572076 Tuebingen, Germany	79,346	0.04%
Myriam Mendila, business address c/o CureVac N.V., Friedrich-Miescher-Straße 1572076 Tuebingen, Germany	21,766	0.01%
Thaminda Ramanayake, business address c/o CureVac N.V., Friedrich-Miescher-Straße 1572076 Tuebingen, Germany	6,401	0.00%

Person or Entity	Number of CureVac Shares held as of the date of the tender and support agreement	Percentage of the total Offer ADS offered
Michael Brosnan, business address c/o CureVac N.V., Friedrich-Miescher-Straße 1572076 Tuebingen, Germany	19,749	0.01%
Mathias Peter Hothum, business address c/o CureVac N.V., Friedrich-Miescher-Straße 1572076 Tuebingen, Germany	124,811	0.06%
Malte Bertram Greune, business address c/o CureVac N.V., Friedrich-Miescher-Straße 1572076 Tuebingen, Germany	33,549	0.01%
Klaus Schollmeier, business address c/o CureVac N.V., Friedrich-Miescher-Straße 1572076 Tuebingen, Germany	17,597	0.01%
Jean Stéphenne, business address c/o CureVac N.V., Friedrich-Miescher-Straße 1572076 Tuebingen, Germany	40,495	0.02%

Each tender and support agreement entered into with a member of the CureVac Boards is dated June 12, 2025.

dievini's tender and support agreement entered into on June 12, 2025 (the "**dievini TSA**") provides that for two successive 90-day periods beginning on, and including, the date of the closing of the Offer, dievini will not transfer an amount of BioNTech equity securities (including BioNTech ADSs) in excess of 25% of those it receives in connection with the Transactions during either period, subject to certain permitted transfers. After the expiration of both periods, the BioNTech ADSs dievini receives in the Transactions will be freely tradeable. The Company has agreed in the dievini TSA that dievini may terminate such agreement in the event that a modification to the Purchase Agreement is effected without dievini's consent and is materially adverse to dievini relative to other shareholders of CureVac, or if the Company is in violation of the obligation described in the next sentence. Additionally, the Company agreed in the dievini TSA that it will not, without dievini's prior written consent, (i) impose any additional offer condition other than those set forth in the Purchase Agreement, (ii) amend, modify, or supplement such offer conditions or terms of the Offer in a manner adverse to dievini, or (iii) make any modification or amendment that decreases the Offer Consideration or changes the form of consideration payable to dievini pursuant to the terms of the Purchase Agreement. Additionally, the dievini TSA includes a most favored nation provision with respect to tender and support and similar agreements entered into with other shareholders of CureVac, subject to certain exclusions and limitations.

Although dievini has waived its rights to bring or participate in claims against BioNTech, CureVac, or any of their respective affiliates or successors, or their respective boards of directors (or similar governing bodies), relating to the negotiation, execution, or delivery of the dievini TSA or the consummation of the Transactions or the transactions contemplated by the dievini TSA, such waiver by dievini excludes its right to commence claims or other actions under applicable law with respect to disclosure violations in connection with the dievini TSA, the Offer, or the post-offer reorganization to the same extent as other shareholders of CureVac.

KfW's tender and support agreement entered into on July 31, 2025 (the "**KfW TSA**"), provides that KfW may terminate such agreement in the event that a modification to the Purchase Agreement is effected without KfW's consent and is materially adverse to KfW relative to other shareholders of CureVac, or if BioNTech is in violation of the obligations described in the next sentence. Additionally, the Company agreed in the KfW TSA that it will not, without KfW's prior written consent, (i) impose any additional offer condition other than those set forth in the Purchase Agreement, (ii) amend, modify, or supplement such offer conditions or terms of the Offer in a manner adverse to KfW, or (iii) make any modification or amendment that decreases the Offer Consideration or changes the form of consideration payable to KfW pursuant to the terms of the Purchase Agreement. Additionally, the KfW TSA includes a most favored nation provision with respect to tender and support and similar agreements entered into with other shareholders of CureVac, subject to certain exclusions and limitations.

Although KfW has waived its rights to bring or participate in claims against the Company, CureVac, or any of their respective affiliates or successors, or their respective boards of directors (or similar governing bodies), relating to the negotiation, execution, or delivery of the KfW TSA or the

consummation of the Transactions or the transactions contemplated by the KfW TSA, such waiver by KfW excludes its right to commence claims or other actions under applicable law with respect to disclosure violations in connection with the KfW TSA, the Offer, or the post-offer reorganization to the same extent as other shareholders of CureVac.

Glaxo Group Limited's tender and support agreement entered into on August 7, 2025 (the "**GSK TSA**") provides that Glaxo Group Limited may terminate such agreement in the event that a modification to the Purchase Agreement is effected without Glaxo Group Limited's consent and is materially adverse to Glaxo Group Limited relative to other shareholders of CureVac, or if the Company is in violation of the obligation described in the next sentence. Additionally, the Company agreed in the GSK TSA that it will not, without Glaxo Group Limited's prior written consent, (i) impose any additional offer condition other than those set forth in the Purchase Agreement, (ii) amend, modify, or supplement such offer conditions or terms of the Offer in a manner adverse to Glaxo Group Limited, or (iii) make any modification or amendment that decreases the Offer Consideration or changes the form of consideration payable to Glaxo Group Limited pursuant to the terms of the Purchase Agreement. Additionally, the GSK TSA includes a most favored nation provision with respect to tender and support and similar agreements entered into with other shareholders of CureVac, subject to certain exclusions and limitations.

Although Glaxo Group Limited has waived its rights to bring claims against the Company, CureVac, or any of their respective affiliates or successors, or their respective boards of directors (or similar governing bodies), relating to the negotiation, execution, or delivery of the GSK TSA or the consummation of the transactions or the transactions contemplated by the GSK TSA, such waiver by Glaxo Group Limited excludes its right to commence claims or other actions under applicable law with respect to disclosure violations in connection with the GSK TSA, the Offer, or the post-offer reorganization to the same extent as other shareholders of CureVac.

3.4 Material Interests of Persons Participating in the Offer

The Company has an interest in the Offer because it believes that the acquisition of CureVac will provide multiple benefits for the BioNTech Group. In this respect, the Company has an interest in the successful completion of the Offer.

None of the Company's supervisory board or management board members are party to an arrangement with BioNTech, or participates in any BioNTech plan, program or arrangement, that provides such member with financial incentives that are contingent upon the consummation of the Transactions contemplated by the Purchase Agreement.

Certain members of the CureVac Boards own CureVac Shares, or are affiliated with a shareholder owning CureVac Shares, that will be tendered in the Offer. dievini and KfW have also undertaken to accept the Offer, see section "*3.3 The Tender and Support Agreements*". Accordingly, these persons have an interest in the successful completion of the Offer. In addition, to the extent that shareholders of BioNTech are also CureVac Shareholders and have tendered their CureVac Shares in the Offer, they have an interest in the successful completion of the Offer.

In considering the recommendations of the CureVac boards to tender CureVac Shares in the Offer, CureVac Shareholders should be aware that members of the CureVac Boards have interests in the Transactions, including financial interests, that may be different from, or in addition to, the interests of other CureVac Shareholders generally.

The Company and CureVac have agreed that CureVac is permitted to enter into transaction bonus agreements with up to 14 identified individuals, providing for an aggregate amount not to exceed $13.8 million, with up to $8,914,700 of that payable to members of CureVac's management board. With respect to such amount payable to CureVac's management board, $5,094,700 will be payable following the closing of the Offer and $3,820,000 will be subject to adjustments depending on the realization of certain contingent liabilities of CureVac. The transaction bonuses will be settled in restricted stock units of the Company.

Certain members of the CureVac Boards hold CureVac PSUs, CureVac RSUs, or CureVac options. The outstanding CureVac PSUs, CureVac RSUs, and CureVac options will be treated as described in section "*3.1.2.6 Treatment of CureVac Equity Awards*".

The following table sets forth the number of CureVac Shares held by each member of the CureVac boards that are outstanding as of October 17, 2025, and not subject to any vesting restrictions. As of October 17, 2025, the last practicable date prior to the date of the Prospectus, the members of the CureVac Boards beneficially owned, in the aggregate, 395,998 CureVac Shares, excluding CureVac Shares subject to any vesting restrictions. The table also sets forth the implied value of these CureVac Shares, assuming the BioNTech ADS VWAP falls within the collar such that $5.4641 in BioNTech ADSs is delivered per CureVac Share. The amounts set forth in the table below do not take into account any accelerated vesting of equity awards (which are described above). No additional CureVac Shares were granted to any member of the CureVac boards in contemplation of the Transactions.

Person or Entity	Number of CureVac Shares	Implied Value ($)
Management Board Members		
Alexander Zehnder	79,346	434,046.25
Axel Sven Malkomes	1,805	9,862.70
Myriam Mendila	21,766	118,931.60
Malte Greune	33,549	183,315.09
Thaminda Ramanayake	6,401	34,975.70
Supervisory Board Members		
Baron Jean Stéphenne	40,495	221,268.73
Mathias Hothum	124,811	681,979.79
Craig A. Tooman	27,793	151,863.73
Debra Barker	22,686	123,958.57
Klaus Schollmeier	17,597	96,151.77
Michael Brosnan	19,749	107,910.51
Total	**395,998**	**2,163,772.67**

Pursuant to the Purchase Agreement, CureVac will agree with each member of the CureVac management board resigning in connection with the Transactions that such members will retain their right to receive, at the closing of the Offer, payment by CureVac of severance and post-contractual non-compete compensation in accordance with the terms of the service agreements entered into between CureVac and such individuals as if such service agreement had been terminated by CureVac with effect from the closing of the Offer other than for urgent cause, as set out in such service agreement. The Company or its subsidiaries intend to enter into service agreements with the resigning members of the CureVac management board in connection with the closing of the Offer.

Pursuant to the terms of the Purchase Agreement, the Company has agreed to certain matters relating to the treatment of individuals who are employed by CureVac or any of its subsidiaries immediately prior to the closing of the Offer and who remain employed by BioNTech or an affiliate as of immediately following the closing of the Offer, including with respect to compensation, bonus, and benefits. For a more detailed description of the provisions of the Purchase Agreement relating to such matters, see section *"3.2.4.12 Employee Matters*".

Pursuant to the terms of the Purchase Agreement, members of CureVac's management board and supervisory board will be entitled to certain on-going indemnification and coverage under directors' and officers' liability insurance policies following the closing of the Offer. For a more detailed description of the provisions of the Purchase Agreement relating to such indemnification, see section "*3.2.4.10 Director and Officer Liability*".

The Schedule 14D-9 to be filed by CureVac is expected to include more detail on the foregoing and additional discussion of the interests of CureVac's supervisory and management directors in the Offer; see section "*2.7 Documents Available for Inspection*".

The Company has mandated the Exchange Agent and the Subscription Agent for the technical execution of the Offer, which is why the Exchange Agent and the Subscription Agent have an interest in the Offer.

There are no material interests, in particular no material conflicts of interest, with respect to the Offer.

4 INFORMATION ON THE OFFERED AMERICAN DEPOSITARY SHARES

4.1 Information on the Offered American Depositary Shares

4.1.1 Form and Certification of the ADSs; Governing Law

The Offer ADSs are of the same class of American Depositary Shares of the Company outstanding as of the date of this Prospectus.

The Bank of New York Mellon, as depositary, will register and deliver any American Depositary Shares, including the Offer ADSs. Each ADS represents, and each Offer ADS will represent, one ordinary registered share (or a right to receive one ordinary registered share) in the Company deposited with The Bank of New York Mellon SA/NV as custodian for the depositary in Germany. Each ADS will also represent any other securities, cash or other property which may be held by the depositary. The deposited ordinary shares together with any other securities, cash or other property held by the depositary are referred to as the "**deposited securities**". Information on the underlying ordinary registered shares in the Company is set forth in section "*4.2 Information on the Underlying Ordinary Registered Shares*".

The Bank of New York Mellon is a banking corporation organized pursuant to the laws of the State of New York, whose registered office is at 240 Greenwich St, NY, NY 10286, United States, and was incorporated in its current form on February 9, 2007. The Bank of New York Mellon's LEI is WFLLPEPC7FZXENRZV188. The depositary's office at which the Offer ADSs will be administered and its principal executive office are located at 240 Greenwich Street, New York, New York 10286.

The Bank of New York Mellon SA/NV is a Belgian limited liability company, registered in the RPM Brussels with company number 0806.743.159, whose registered office is at Boulevard Anspachlaan 1, B-1000 Brussels. The Bank of New York Mellon SA/NV operates in Germany through its Frankfurt branch "The Bank of New York Mellon SA/NV, Asset Servicing, Niederlassung Frankfurt am Main", is registered with the commercial register (*Handelsregister*) of the local court (*Amtsgericht*) of Frankfurt am Main under HRB 87912, and has its registered office at MesseTurm, Friedrich-Ebert-Anlage 49, 60327 Frankfurt am Main, Germany. The Bank of New York Mellon SA/NV, Asset Servicing, Niederlassung Frankfurt am Main's LEI is 213800YAFR3TXTCJHM14.

ADSs may be held either (i) directly (a) by having a American depositary receipt, also referred to as an "**American Depositary Receipt**" or an "**ADR**", which is a certificate evidencing a specific number of ADSs registered in the name of a holder, or (b) by having uncertificated ADSs registered in a holder's name, or (ii) indirectly by holding a security entitlement in ADSs through a broker or other financial institution that is a direct or indirect participant in the DTC. If ADSs are held directly, the holder is a registered ADS holder, or an ADS holder. The following description applies to ADS holders. If ADS are held indirectly, the holder must rely on the procedures of its broker or other financial institution to assert the rights of ADS holders described in section "*4.1 Information on the Offered American Depositary Shares*". Indirect holders should consult with their broker or financial institution to find out what those procedures are. ADS may also be held through DTC's DRS system, as set forth in section "*4.1.17 Direct Registration System*".

Registered holders of uncertificated ADSs will receive statements from the depositary confirming their holdings.

An ADS holder will not be treated as a shareholder of the Company and will not have shareholder rights. European and German law governs shareholder rights. The depositary will be the holder of the ordinary shares underlying the ADSs. A registered holder of ADSs will have ADS holder rights. A deposit agreement among the Company, The Bank of New York Mellon as depositary, ADS holders and all other persons indirectly or beneficially holding ADSs sets out ADS holder rights as well as the rights and obligations of the depositary. New York law governs the deposit agreement and the ADSs.

The following is a summary of the material provisions of the deposit agreement governing the ADSs and their relationship with the ordinary shares in the Company which they represent. For more complete information, investors are advised to read the entire deposit agreement and the form of ADR. The

deposit agreement is included in this Prospectus in section "*23 Form of Deposit Agreement*" and can be obtained from the website of the Company as set out in section "*2.7 Documents Available for Inspection*". Information contained on this website is not incorporated by reference in the Prospectus and does not form part of the Prospectus.

4.1.2 Dividends and Other Distributions

The depositary has agreed to pay or distribute to ADS holders the cash dividends or other distributions it or the custodian receives on shares or other deposited securities, upon payment or deduction of its fees and expenses. ADS holders will receive these distributions in proportion to the number of shares their ADSs represent.

Cash. The depositary will convert any cash dividend or other cash distribution the Company pays on its ordinary shares into U.S. dollars, if it can do so on a reasonable basis and can transfer the U.S. dollars to the United States. If that is not possible or if any government approval is needed and cannot be obtained, the deposit agreement allows the depositary to distribute the foreign currency only to those ADS holders to whom it is possible to do so. It will hold the foreign currency it cannot convert for the account of the ADS holders who have not been paid. It will not invest the foreign currency and it will not be liable for any interest. Before making a distribution, any withholding taxes, or other governmental charges that must be paid will be deducted.

The depositary will distribute only whole U.S. dollars and cents and will round fractional cents to the nearest whole cent. If the exchange rates fluctuate during a time when the depositary cannot convert the foreign currency, an ADS holder may lose some of the value of the distribution.

The deposit agreement does not provide for a special procedure for the claiming of cash distributions by shareholders not resident in New York. Payment of cash distributions are paid on a non-cumulative basis.

Shares. The depositary may distribute additional ADSs representing any shares the Company distributes as a dividend or free distribution. The depositary will only distribute whole ADSs. It will sell shares which would require it to deliver a fraction of an ADS (or ADSs representing those shares) and distribute the net proceeds in the same way as it does with cash. If the depositary does not distribute additional ADSs, the outstanding ADSs will also represent the new shares. The depositary may sell a portion of the distributed shares (or ADSs representing those shares) sufficient to pay its fees and expenses in connection with that distribution.

Rights to subscribe for additional shares. If we offer holders of our securities any rights to subscribe for additional shares or any other rights, the depositary may (i) exercise those rights on behalf of ADS holders, (ii) distribute those rights to ADS holders or (iii) sell those rights and distribute the net proceeds to ADS holders, in each case after deduction or upon payment of its fees and expenses. To the extent the depositary does not do any of those things, it will allow the rights to lapse. **In that case, an ADS holder will receive no value for them.** The depositary will exercise or distribute rights only if the Company asks it to and provides satisfactory assurances to the depositary that it is legal to do so. If the depositary will exercise rights, it will purchase the securities to which the rights relate and distribute those securities or, in the case of shares, new ADSs representing the new shares, to subscribing ADS holders, but only if ADS holders have paid the exercise price to the depositary. U.S. securities laws may restrict the ability of the depositary to distribute rights or ADSs or other securities issued on exercise of rights to all or certain ADS holders, and the securities distributed may be subject to restrictions on transfer.

Other Distributions. The depositary will send to ADS holders anything else the Company distributes on deposited securities by any means it thinks is legal, fair and practical. If it cannot make the distribution in that way, the depositary has a choice. It may decide to sell what the Company distributed and distribute the net proceeds, in the same way as it does with cash. Or it may decide to hold what the Company distributed, in which case ADSs will also represent the newly distributed property. However, the depositary is not required to distribute any securities (other than ADSs) to ADS holders unless it receives satisfactory evidence from the Company that it is legal to make that distribution. The depositary may sell a portion of the distributed securities or property sufficient to pay its fees and expenses in connection with that distribution. U.S. securities laws may restrict the ability of the depositary to distribute securities to all or certain ADS holders, and the securities distributed may be subject to restrictions on transfer.

The depositary is not responsible if it decides that it is unlawful or impractical to make a distribution available to any ADS holders. The Company has no obligation to register ADSs, shares, rights or other securities under the Securities Act. It also has no obligation to take any other action to permit the distribution of ADSs, shares, rights or anything else to ADS holders. **This means that an ADS holder may not receive the distributions the Company makes on its ordinary shares or any value for them if it is illegal or impractical for the Company to make them available to ADS holders.**

4.1.3 Fixing of Record Dates

Whenever a cash dividend, cash distribution or any other distribution is made on the ordinary registered shares, rights to purchase ordinary shares or other securities are issued with respect to the ordinary shares or the depositary receives notice that a distribution or issuance of that kind will be made, or whenever the depositary receives notice that a meeting of holders of ordinary shares will be held in respect of which the Company has requested the depositary to send a notice under the terms of the deposit agreement, or whenever the depositary will assess a fee or charge against the ADS holders, or whenever the depositary causes a change in the number of ordinary shares that are represented by each American Depositary Share, or whenever the depositary otherwise finds it necessary or convenient, the depositary shall fix a record date, which shall be the same as, or as near as practicable to, any corresponding record date set by the Company with respect to ordinary shares, (a) for the determination of the ADS holders (i) who shall be entitled to receive the benefit of that dividend or other distribution or those rights, (ii) who shall be entitled to give instructions for the exercise of voting rights at that meeting, (iii) who shall be responsible for that fee or charge or (iv) for any other purpose for which the record date was set, or (b) on or after which each American Depositary Share will represent the changed number of ordinary shares. Subject to the provisions of the deposit agreement, the ADS holders on a record date fixed by the depositary shall be entitled to receive the amount distributable by the Depositary with respect to that dividend or other distribution or those rights or the net proceeds of sale thereof in proportion to the number of American Depositary Shares held by them respectively, to give voting instructions or to act in respect of the other matter for which that record date was fixed, or be responsible for that fee or charge, as the case may be.

4.1.4 Deposit, Withdrawal and Cancellation

The depositary will deliver ADSs if the ADS holder or its broker deposits shares or evidence of rights to receive shares with the custodian. Upon payment of its fees and expenses and of any taxes or charges, such as stamp taxes or stock transfer taxes or fees, the depositary will register the appropriate number of ADSs in the names the holder requests and will deliver the ADSs to or upon the order of the person or persons that made the deposit.

An ADS holder may surrender its ADSs to the depositary for the purpose of withdrawal. Upon payment of its fees and expenses and of any taxes or charges, such as stamp taxes or stock transfer taxes or fees, the depositary will deliver the underlying ordinary shares and any other deposited securities underlying the ADSs to the ADS holder or a person the ADS holder designates at the office of the custodian. Or, at the ADS holder’s request, risk and expense, the depositary will deliver the deposited securities at its office, if feasible. However, the depositary is not required to accept surrender of ADSs to the extent it would require delivery of a fraction of a deposited share or other security. The depositary may charge the ADS holder a fee and its expenses for instructing the custodian regarding delivery of deposited securities.

A holder may surrender ADR to the depositary for the purpose of exchanging ADR for uncertificated ADSs. The depositary will cancel that ADR and will send to the ADS holder a statement confirming that the ADS holder is the registered holder of uncertificated ADSs. Upon receipt by the depositary of a proper instruction from a registered holder of uncertificated ADSs requesting the exchange of uncertificated ADSs for certificated ADSs, the depositary will execute and deliver to the ADS holder an ADR evidencing those ADSs.

4.1.5 Voting Rights

ADS holders may instruct the depositary how to vote the number of deposited shares their ADSs represent. If the Company requests the depositary to solicit a holder’s voting instructions (and the

Company is not required to do so), the depositary will notify the holder of a shareholders' meeting and send or make voting materials available to it. Those materials will describe the matters to be voted on and explain how ADS holders may instruct the depositary how to vote. For instructions to be valid, they must reach the depositary by a date set by the depositary. The depositary will try, as far as practical, subject to the laws of the State of New York and the provisions of the Company's Articles of Association or similar documents, to vote or to have its agents vote the shares or other deposited securities as instructed by ADS holders. If the Company does not request the depositary to solicit a holder's voting instructions, a holder can still send voting instructions, and, in that case, the depositary may try to vote as instructed, but it is not required to do so.

Except by instructing the depositary as described above, an ADS holder will not be able to exercise voting rights unless it surrenders its ADSs and withdraws the underlying ordinary shares. However, an ADS holder may not know about the meeting enough in advance to withdraw the underlying ordinary shares.

In any event, the depositary will not exercise any discretion in voting deposited securities and it will only vote or attempt to vote as instructed or as described in the following sentence. If (i) the Company asks the depositary to solicit an ADS holder's instructions at least 30 days before the meeting date, (ii) the depositary does not receive voting instructions from the ADS holder by the specified date and (iii) the Company confirms to the depositary that

- it wishes the depositary to vote uninstructed shares;
- it reasonably does not know of any substantial shareholder opposition to a particular question; and
- the particular question is not materially adverse to the interests of shareholders,

the depositary will consider an ADS holder to have authorized and directed it to vote the number of deposited securities represented by the ADSs in favor of any resolution that the Company proposed in the invitation to the shareholders' meeting.

The Company cannot assure an ADS holder that they will receive the voting materials in time to ensure that they can instruct the depositary to vote their shares. In addition, the depositary and its agents are not responsible for failing to carry out voting instructions or for the manner of carrying out voting instructions.

This means that an ADS holder may not be able to exercise voting rights and there may be nothing an ADS holder can do if the underlying ordinary shares are not voted as requested.

In order to give ADS holders a reasonable opportunity to instruct the depositary as to the exercise of voting rights relating to deposited securities, if the Company requests the depositary to act, the Company agrees to give the depositary notice of any such meeting and details concerning the matters to be voted upon at least 30 days in advance of the meeting date.

4.1.6 Transferability

The BioNTech ADSs evidenced by an ADR, when the ADR is properly endorsed or accompanied by proper instruments of transfer, are transferable as certificated registered securities under the laws of the State of New York. American Depositary Shares not evidenced by receipts are transferable as uncertificated registered securities under the laws of the State of New York.

All of the American Depositary Shares delivered in this offering will be freely tradable, except that any American Depositary Shares held by the Company's affiliates (as that term is defined in Rule 144 under the Securities Act), may only be sold in compliance with the limitations with certain volume and manner of sale restrictions set out in Rule 144 under the Securities Act.

There are no other legal restrictions on the transferability of the shares except as described above and under section "*3.1.3 Lock-up Undertakings*".

4.1.7 Currency of the ADSs

The BioNTech ADSs are denominated in U.S. dollars.

4.1.8 ISIN / WKN / Common Code / Trading Symbol

The BioNTech ADSs have been assigned the following securities identification numbers:

International Securities Identification Number (ISIN)	US09075V1026
German Securities Identification Number (Wertpapierkennnummer, WKN)	A2PSR2
Nasdaq Trading Symbol	BNTX

4.1.9 Existing Quotation

The BioNTech ADSs are listed as a class on the Nasdaq Global Select Market of Nasdaq under the symbol “BNTX”.

4.1.10 Fees and Expenses

The following table sets forth fees BioNTech ADS holders may be required to pay:

Persons depositing or withdrawing shares or ADS holders must pay:	**For:**
$5.00 (or less) per 100 ADSs (or portion of 100 ADSs)	• Issuance of ADSs, including issuances resulting from a distribution of shares or rights or other property • Cancellation of ADSs for the purpose of withdrawal, including if the deposit agreement terminates
$0.05 (or less) per ADS	• Any cash distribution to ADS holders
A fee equivalent to the fee that would be payable if securities distributed to the ADS holder had been shares and the shares had been deposited for issuance of ADSs	• Distribution of securities distributed to holders of deposited securities (including rights) that are distributed by the depositary to ADS holders
$0.05 (or less) per ADS per calendar year	• Depositary services
Registration or transfer fees	• Transfer and registration of shares on our share register to or from the name of the depositary or its agent when an ADS holder deposits or withdraws shares
Expenses of the depositary	• Cable and facsimile transmissions (when expressly provided in the deposit agreement) • Converting foreign currency to U.S. dollars
Taxes and other governmental charges the depositary or the custodian has to pay on any ADSs or shares underlying ADSs, such as stock transfer taxes, stamp duty or withholding taxes	• As necessary
Any charges incurred by the depositary or its agents for servicing the deposited securities	• As necessary

The depositary collects its fees for delivery and surrender of ADSs directly from investors depositing shares or surrendering ADSs for the purpose of withdrawal or from intermediaries acting for them. The

depositary collects fees for making distributions to investors by deducting those fees from the amounts distributed or by selling a portion of distributable property to pay the fees. The depositary may collect its annual fee for depositary services by deduction from cash distributions or by directly billing investors or by charging the book-entry system accounts of participants acting for them. The depositary may collect any of its fees by deduction from any cash distribution payable (or by selling a portion of securities or other property distributable) to ADS holders that are obligated to pay those fees. The depositary may generally refuse to provide fee-attracting services until its fees for those services are paid.

From time to time, the depositary may make payments to the Company to reimburse the Company for costs and expenses generally arising out of establishment and maintenance of the ADS program, waive fees and expenses for services provided to the Company by the depositary or share revenues from the fees collected from ADS holders. In performing its duties under the deposit agreement, the depositary may use brokers, dealers, foreign currency dealers or other service providers that are owned by, or affiliated with, the depositary and that may earn or share fees, spreads or commissions.

The depositary may convert currency itself or through any of its affiliates and, in those cases, acts as principal for its own account and not as agent, advisor, broker or fiduciary on behalf of any other person and earns revenue, including, without limitation, transaction spreads, that it will retain for its own account. The revenues are based on, among other things, the difference between the exchange rate assigned to the currency conversion made under the deposit agreement and the rate that the depositary or its affiliate receives when buying or selling foreign currency for its own account. The depositary makes no representation that the exchange rate used or obtained in any currency conversion under the deposit agreement will be the most favorable rate that could be obtained at the time or that the method by which that rate will be determined will be the most favorable to ADS holders, subject to the depositary's obligations under the deposit agreement. The methodology used to determine exchange rates used in currency conversions is available upon request.

4.1.11 Payment of Taxes

ADS holders will be responsible for any taxes or other governmental charges payable on their ADSs or on the deposited securities represented by any of their ADSs. The depositary may refuse to register any transfer of ADS holders ADSs or allow them to withdraw the deposited securities represented by their ADSs until those taxes or other charges are paid. It may apply payments owed to ADS holders or sell deposited securities represented by their ADSs to pay any taxes owed and ADS holders will remain liable for any deficiency. If the depositary sells deposited securities, if appropriate, it will reduce the number of ADSs to reflect the sale and pay to ADS holders any proceeds, or send to ADS holders any property remaining after it has paid the taxes.

4.1.12 Tender and Exchange Offers; Redemption, Replacement or Cancellation of Deposited Securities

The depositary will not tender deposited securities in any voluntary tender or exchange offer unless instructed to do by an ADS holder surrendering ADSs and subject to any conditions or procedures the depositary may establish.

If deposited securities are redeemed for cash in a transaction that is mandatory for the depositary as a holder of deposited securities, the depositary will call for surrender of a corresponding number of ADSs and distribute the net redemption money to the holders of called ADSs upon surrender of those ADSs.

If there is any change in the deposited securities such as a sub-division, combination or other reclassification, or any merger, consolidation, recapitalization or reorganization affecting the issuer of deposited securities in which the depositary receives new securities in exchange for or in lieu of the old deposited securities, the depositary will hold those replacement securities as deposited securities under the deposit agreement. However, if the depositary decides it would not be lawful and practical to hold the replacement securities because those securities could not be distributed to ADS holders or for any other reason, the depositary may instead sell the replacement securities and distribute the net proceeds upon surrender of the ADSs.

If there is a replacement of the deposited securities and the depositary will continue to hold the replacement securities, the depositary may distribute new ADSs representing the new deposited securities or ask ADS holders to surrender their outstanding ADRs in exchange for new ADRs identifying the new deposited securities.

If there are no deposited securities underlying ADSs, including if the deposited securities are cancelled, or if the deposited securities underlying ADSs have become apparently worthless, the depositary may call for surrender or of those ADSs or cancel those ADSs upon notice to the ADS holders.

4.1.13 Amendment and Termination of the Deposit Agreement

The Company may agree with the depositary to amend the deposit agreement and the ADRs without the ADR holders' consent for any reason. If an amendment adds or increases fees or charges, except for taxes and other governmental charges or expenses of the depositary for registration fees, facsimile costs, delivery charges or similar items, or prejudices a substantial right of ADS holders, it will not become effective for outstanding ADSs until 30 days after the depositary notifies ADS holders of the amendment. **At the time an amendment becomes effective, ADS holders are considered, by continuing to hold ADSs, to agree to the amendment and to be bound by the ADRs and the deposit agreement as amended.**

The depositary will initiate termination of the deposit agreement if the Company instructs it to do so. The depositary may initiate termination of the deposit agreement if:

- 60 days have passed since the depositary told the Company it wants to resign but a successor depositary has not been appointed and accepted its appointment;
- the Company delists the ADSs from an exchange in the United States on which they were listed and does not list the ADSs on another exchange in the United States or make arrangements for trading of ADSs on the U.S. over-the-counter market;
- the Company delists its ordinary shares from an exchange outside the United States on which they were listed and does not list the shares on another exchange outside the United States;
- the depositary has reason to believe the ADSs have become, or will become, ineligible for registration on Form F-6 under the Securities Act;
- the Company appears to be insolvent or enter insolvency proceedings;
- all or substantially all the value of the deposited securities has been distributed either in cash or in the form of securities;
- there are no deposited securities underlying the ADSs or the underlying deposited securities have become apparently worthless; or
- there has been a replacement of deposited securities.

If the deposit agreement terminates, the depositary will notify ADS holders at least 90 days before the termination date. At any time after the termination date, the depositary may sell the deposited securities. After that, the depositary will hold the money it received on the sale, as well as any other cash it is holding under the deposit agreement, unsegregated and without liability for interest, for the pro rata benefit of the ADS holders that have not surrendered their ADSs. Normally, the depositary will sell as soon as practicable after the termination date.

After the termination date and before the depositary sells, ADS holders can still surrender their ADSs and receive delivery of deposited securities, except that the depositary may refuse to accept a surrender for the purpose of withdrawing deposited securities or reverse previously accepted surrenders of that kind that have not settled if it would interfere with the selling process. The depositary may refuse to accept a surrender for the purpose of withdrawing sale proceeds until all the deposited securities have been sold. The depositary will continue to collect distributions on deposited securities, but, after the termination date, the depositary is not required to register any transfer of ADSs or distribute any dividends or other distributions on deposited securities to the ADSs holder (until they surrender their ADSs) or give any notices or perform any other duties under the deposit agreement except as described in this paragraph.

4.1.14 Limitations on Obligations and Liability

The deposit agreement expressly limits the Company's obligations and the obligations of the depositary. It also limits the Company's liability and the liability of the depositary. The Company and the depositary:

- are only obligated to take the actions specifically set forth in the deposit agreement without negligence or bad faith, and the depositary will not be a fiduciary or have any fiduciary duty to holders of ADSs;
- are not liable if the Company or it is prevented or delayed by law or by events or circumstances beyond the Company's or its ability to prevent or counteract with reasonable care or effort from performing the Company's or its obligations under the deposit agreement;
- are not liable if the Company or it exercises discretion permitted under the deposit agreement;
- are not liable for the inability of any holder of ADSs to benefit from any distribution on deposited securities that is not made available to holders of ADSs under the terms of the deposit agreement, or for any special, consequential or punitive damages for any breach of the terms of the deposit agreement;
- have no obligation to become involved in a lawsuit or other proceeding related to the ADSs or the deposit agreement on the Company's behalf or on behalf of any other person;
- may rely upon any documents the Company or it believes in good faith to be genuine and to have been signed or presented by the proper person;
- are not liable for the acts or omissions of any securities depository, clearing agency or settlement system; and
- the depositary has no duty to make any determination or provide any information as to the Company's tax status, or any liability for any tax consequences that may be incurred by ADS holders as a result of owning or holding ADSs or be liable for the inability or failure of an ADS holder to obtain the benefit of a foreign tax credit, reduced rate of withholding or refund of amounts withheld in respect of tax or any other tax benefit.

In the deposit agreement, the Company and the depositary agree to indemnify each other under certain circumstances.

4.1.15 Requirements for Depositary Actions

Before the depositary will deliver or register a transfer of ADSs, make a distribution on ADSs, or permit withdrawal of shares, the depositary may require:

- payment of stock transfer or other taxes or other governmental charges and transfer or registration fees charged by third parties for the transfer of any shares or other deposited securities;
- satisfactory proof of the identity and genuineness of any signature or other information it deems necessary; and
- compliance with regulations it may establish, from time to time, consistent with the deposit agreement, including presentation of transfer documents.

The depositary may refuse to deliver ADSs or register transfers of ADSs when the transfer books of the depositary or the Company's transfer books are closed or at any time if the depositary or the Company think it advisable to do so.

4.1.16 Right to Receive the Shares Underlying an ADS Holder's ADSs

ADS holders have the right to cancel their ADSs and withdraw the underlying shares at any time except:

- when temporary delays arise because (i) the depositary has closed its transfer books or the Company has closed its transfer books, (ii) the transfer of shares is blocked to permit voting at a shareholders' meeting or (iii) the Company is paying a dividend on its ordinary shares;
- when the ADS holder owes money to pay fees, taxes and similar charges; or

- when it is necessary to prohibit withdrawals in order to comply with any laws or governmental regulations that apply to ADSs or to the withdrawal of shares or other deposited securities.

This right of withdrawal may not be limited by any other provision of the deposit agreement.

4.1.17 Direct Registration System

In the deposit agreement, all parties to the deposit agreement acknowledge that the Direct Registration System, or "**DRS**", and Profile Modification System, or "**Profile**", will apply to the ADSs. DRS is a system administered by DTC that facilitates interchange between registered holding of uncertificated ADSs and holding of security entitlements in ADSs through DTC and a DTC participant. Profile is a feature of DRS that allows a DTC participant, claiming to act on behalf of a registered holder of uncertificated ADSs, to direct the depositary to register a transfer of those ADSs to DTC or its nominee and to deliver those ADSs to the DTC account of that DTC participant without receipt by the depositary of prior authorization from the ADS holder to register that transfer.

In connection with and in accordance with the arrangements and procedures relating to DRS/Profile, the parties to the deposit agreement understand that the depositary will not determine whether the DTC participant that is claiming to be acting on behalf of an ADS holder in requesting registration of transfer and delivery as described in the paragraph above has the actual authority to act on behalf of the ADS holder (notwithstanding any requirements under the Uniform Commercial Code). In the deposit agreement, the parties agree that the depositary's reliance on and compliance with instructions received by the depositary through the DRS/Profile system and in accordance with the deposit agreement will not constitute negligence or bad faith on the part of the depositary.

4.1.18 Shareholder Communications; Inspection of Register of Holders of ADSs

The depositary will make available for ADS holders' inspection at its office all communications that it receives from the Company as a holder of deposited securities that the Company makes generally available to holders of deposited securities. The depositary will send ADS holders copies of those communications or otherwise make those communications available to ADS holders if the Company asks it to. ADS holders have a right to inspect the register of holders of ADSs, but not for the purpose of contacting those holders about a matter unrelated to the Company's business or the ADSs.

4.1.19 Jury Trial Waiver

The deposit agreement provides that, to the extent permitted by law, ADS holders waive the right to a jury trial of any claim they may have against the Company or the depositary arising out of or relating to the Company's shares, the ADSs or the deposit agreement, including any claim under the U.S. federal securities laws. If the Company or the depositary opposed a jury trial demand based on the waiver, the court would determine whether the waiver was enforceable in the facts and circumstances of that case in accordance with applicable case law.

An ADS holder will not, by agreeing to the terms of the deposit agreement, be deemed to have waived the Company's or the depositary's compliance with U.S. federal securities laws and the rules and regulations promulgated thereunder.

4.2 Information on the Underlying Ordinary Registered Shares

The following section provides information on the shares underlying the American Depositary Shares, including the Offer ADSs.

4.2.1 Current and Future Share Capital of the Company and Governing Law

As of the date of the Prospectus, the Company's share capital registered in the commercial register (*Handelsregister*) amounts to €248,552,200 and is divided into 248,552,200 ordinary registered shares (*Namensaktien*). All shares are shares with no par value (*Stückaktien ohne Nennbetrag*) with a notional amount attributable to each ordinary share of €1.00. Each issued ordinary registered share is fully paid. The Company's shares were created pursuant to the laws of Germany.

For the Capital Increases and the Shares Issuances relating to the creation of the new ordinary shares that will underly the Offer Consideration, see sections "*3.1.2.9 Acceptance for Exchange of CureVac Shares; Delivery of BioNTech ADSs; Capital Increases*".

All ordinary shares in the Company provide holders thereof with the same rights and no ordinary shares provide any additional rights or advantages.

4.2.2 Form and Certification of the Shares

The Company's existing ordinary shares are represented by a global share certificate which is deposited with Clearstream Europe AG, Mergenthalerallee 61, 65760 Eschborn, Germany, or "**Clearstream**". The global share certificate representing the ordinary shares from each Share Capital Increase is expected to be deposited with Clearstream as soon as possible after the registration of the respective Share Capital Increase. The right of the shareholders to receive individual certificates representing their ordinary shares is excluded by the Company's Articles of Association unless certification is required under applicable stock exchange rules where the shares or rights or certificates representing them are admitted for trading.

The Company's share register is kept by Computershare Deutschland GmbH & Co. KG, Elsenheimerstr. 61, 80687 München.

4.2.3 Voting Rights

Each ordinary share in the Company confers one vote at the Company's shareholders' meeting. The voting rights are not restricted. Major shareholders do not have different voting rights.

4.2.4 Transferability

The Company's shares are freely transferable in accordance with the legal requirements for ordinary registered shares. There are no legal restrictions on the transferability of the shares.

4.2.5 Dividend Rights, Participation in Liquidation Proceeds

Each of the Company's existing ordinary shares carries, and each of the shares from each Share Capital Increase will carry, full dividend rights as from January 1, 2025, and the new ordinary shares that shall underly the BioNTech ADSs to be delivered under the Offer or the post-offer reorganization shall have the same dividend entitlement, provided that if such new ordinary shares are issued after the Company's shareholders' meeting has resolved on the distribution of accumulated profit for the financial year ended December 31, 2025, the relevant shares shall carry full dividend rights as from January 1, 2026.

In the event of the Company's liquidation, any proceeds will be distributed to the holders of the Company's shares in proportion to their interest in the Company's share capital.

Generally, withholding tax (*Kapitalertragsteuer*) is withheld from dividends paid. Any dividends not claimed within three years become time-barred. Once the statute of limitations applies, the right to receive the relevant dividend payments passes to the Company.

Neither German law nor the Company's Articles of Association provide for a special procedure for the exercise of dividend rights by shareholders not resident in Germany. Dividends are paid on a non-cumulative basis.

4.2.6 Currency of the Underlying Shares

The Company's ordinary shares are denominated in euros.

4.2.7 ISIN and WKN

The ordinary shares of the Company have been assigned the following securities identification numbers:

International Securities Identification Number (ISIN)	DE000A0V9BC4
German Securities Identification Number *(Wertpapierkennnummer, WKN)*	A0V9BC

Ordinary shares of the Company are not admitted to, or included in, trading on any regulated market or other stock exchange.

4.3 Comparison of Rights of BioNTech ADS Holders and CureVac Shareholders

The rights of CureVac shareholders are governed by Dutch law and the articles of association of CureVac, which we refer to as the CureVac articles. The rights of BioNTech shareholders are governed by European and German law, including, but not limited to, the SE Regulation, the German Act on the Implementation of the SE Regulation, or the "**SEAG**", the German Stock Corporation Act (*Aktiengesetz*) (each as amended from time to time) and by the provisions of the BioNTech articles of association (*Satzung*), which we refer to as the BioNTech articles (each as amended from time to time). The following is a summary of material differences between the rights of CureVac Shareholders and BioNTech shareholders. These differences arise from differences between Dutch law and the CureVac articles on the one hand, and European and German law and the Company's articles on the other hand. This summary does not include a complete description of all differences between the rights of CureVac Shareholders and BioNTech shareholders, nor does it include a complete description of the specific rights of these respective holders. Furthermore, the identification of some of the differences in the rights of these holders as material is not intended to indicate that other differences do not exist.

Upon completion of the transactions, CureVac Shareholders will become holders of ADSs, each of which will represent one ordinary share of the Company. Investors should refer to the description of the ADSs in section "*4.1 Information on the Offered American Depositary Shares*" for a description of the ADSs and the deposit agreement and a discussion of the ways in which the rights of holders of ADSs may differ from those of holders of the Company's ordinary shares.

CureVac	***BioNTech***
Management Board/ Supervisory Board/ Shareholders' Meeting	
CureVac has a two-tier governance system with a separate management board and supervisory board.	The Company has a two-tier governance system with a separate management board and supervisory board.
Authorized Capital/Outstanding Stock	
The CureVac articles provide for an authorized share capital of €92,700,000, divided into (i) 386,250,000 ordinary shares with a nominal value of €0.12 each, and (ii) 386,250,000 preferred shares with a nominal value of €0.12 each. Based on the information in the Dutch trade register (*handelregister*), the issued share capital of CureVac is €27,021,797.64, divided into 225,181,647 ordinary shares with a nominal value of €0.12 each, all of which are fully paid-up.	The Company has share capital registered in the commercial register (*Handelsregister*) in the amount of €248,552,200, which is divided into 248,552,200 registered shares (*Namensaktien*). All shares are shares with no par value (*Stückaktien ohne Nennbetrag*) with a notional amount attributable to each ordinary share of €1.00. Each issued ordinary share is fully paid. Under § 4(5) of the Company's articles of association (*Satzung*), the management board is authorized, with the approval of the supervisory board, to increase the Company's share capital, on one or more occasions, in the period up to

CureVac	*BioNTech*
At the proposal of the management board of CureVac, approved by the supervisory board of CureVac, the general meeting of CureVac may designate another corporate body such as the CureVac management board as the competent body to issue shares in the capital of CureVac (or grant rights to subscribe for such shares), to limit or exclude pre-emption rights with regard to such issue or grant, and to determine the issue price and other conditions of the issue for a specified period not exceeding five years. Preferred shares cannot be issued or granted and shall not be part of CureVac's issued share capital until the expiration of the later of (i) the Initial Period or (ii) the Initial Approval Period (both as defined in the CureVac articles). The CureVac management board has been authorized for a period of five years until August 14, 2025, to issue ordinary shares or grant rights to subscribe for ordinary shares up to CureVac's authorized share capital from time to time. CureVac was granted renewal of this authorization at its 2025 annual general meeting that was held on June 24, 2025. Resolutions of the CureVac supervisory board to approve a resolution of the CureVac management board to exclude or limit pre-emption rights (except in connection with the ordinary operation of CureVac's equity incentive plans), or to issue shares against non-cash contribution, require approval by a Special Committee of the CureVac supervisory board. The CureVac shares are listed on Nasdaq.	May 15, 2030, by a total of up to €124,276,100 by issuing up to 124,276,100 new no-par value registered shares in return for cash and/or non-cash contributions (authorized capital 2025). The ADSs are listed on Nasdaq.
Board Committees	
The supervisory board has established the following standing committees: an Audit Committee, a Compensation Committee, a Nomination and Corporate Governance Committee, a Special Committee, and an Independent Committee. The supervisory board has drawn up (and/or included in the supervisory board rules) rules concerning the organization, decision-making, and other internal matters of these committees.	The supervisory board may form committees and may refer items for resolution to these committees within the scope of what is permitted by law. The Company's supervisory board has established an Audit Committee, a Compensation, Nominating, Governance Committee, a Capital Markets Committee and a Product Committee by resolution.

Voting

Each person with a meeting right under Dutch law (generally being a shareholder, a usufructuary, or pledgee with voting or meeting rights or a holder of depository receipts for shares issued with CureVac's cooperation) has the right to attend, address and, if applicable, vote at CureVac's general meetings, whether in person or represented by the holder of a written proxy (also by electronic means of communication, if so decided by the CureVac management board). Each share, irrespective of which class it concerns, shall give the right to cast one vote at the CureVac general meeting.

Unless a greater majority is required by law or by the CureVac articles, all resolutions of the CureVac general meeting shall be passed by a simple majority of the votes cast. Under applicable Dutch law, a number of resolutions must be passed by a majority of at least two thirds of the votes cast if less than half of the issued share capital is represented at a CureVac general meeting.

The holders of the Company's ordinary shares may exercise their voting rights only in the shareholders' meeting. One vote is afforded to each ordinary share.

Resolutions are, in accordance with the Company's articles, generally taken by simple majority of the votes cast. However, under applicable German and European law, a number of resolutions must be passed by either a three-quarter majority of the votes cast or a three-quarter majority of the share capital represented at the meeting. In addition, unless a larger majority is required by law, resolutions to amend the articles (*Satzung*) require a majority of at least two-thirds of the votes cast and of the share capital represented, if at least half of the share capital is not represented. The fact that in these cases the quorum is determined in relation to the share capital or shares present (as opposed to, for example, all shares eligible to vote) means that holders of a minority of the Company's ordinary shares could potentially control the outcome of resolutions.

Distributions / Dividends

A distribution can only be made to the extent that CureVac's equity exceeds the amount of the paid up and called up part of its capital plus the reserves which must be maintained by law. This rule applies to both dividend distributions (out of profit) and distributions out of freely distributable reserves (such as share premium). A distribution of profits may be made only after the adoption of the annual accounts that show that such distribution is allowed.

In addition, the management board of CureVac, with the approval of the CureVac supervisory board, may resolve to make interim distributions, provided that it appears from interim accounts to be prepared in accordance with Dutch law that CureVac's equity exceeds the amount of the paid up and called up part of its capital plus the reserves which must be maintained by Dutch law and, if applicable, the order of priority, as laid down in Article 37.1 paragraph a. through d. of the CureVac articles, is taken into account.

Taking into account the order of priority, as laid down in Article 37.1 paragraph a. through d. of the CureVac articles, more specifically in relation to the preferred shares, the Preferred Distribution (as defined in the CureVac articles) and the authorization of CureVac's management board to reserve the profits, the remaining profits shall be at the disposal of CureVac's general meeting for distribution on the ordinary shares.

The shareholders' meeting decides on the use of the accumulated retained earnings for each financial year according to the Company's annual financial statements as approved by the supervisory board. In particular, the shareholders' meeting may resolve to distribute a dividend per no-par value share out of the accumulated retained earnings. The shareholders' meeting may resolve to make distributions in kind, in lieu of or in addition to cash distributions.

Shareholders generally participate in profit distributions in proportion to the number of shares they hold. Dividends on shares resolved by the shareholders' meeting are paid annually, shortly after the shareholders' meeting, in compliance with the rules of the respective clearing system. Dividend payment claims are subject to a three-year statute of limitation in the company's favor.

The CureVac general meeting may resolve, that all or part of a distribution, instead of being made in cash, shall be made in the form of shares in CureVac's capital or in the form of CureVac's assets. This resolution can only be passed at the proposal of CureVac's management board, which shall require the approval of the supervisory board of CureVac.

Furthermore, in case of remaining profits, the management board of CureVac shall determine which part thereof shall be added to CureVac's reserves. In case some of the distributions described in Article 37.1 paragraphs a. through c. (or any part thereof) of CureVac articles cannot be paid out of the profits shown in the annual accounts, any such deficit shall in principle be distributed from CureVac's reserves. See section "*Reserves*" below.

A claim for payment of a distribution shall lapse after five years have expired after the distribution became payable.

For the purpose of calculating the amount or allocation of any distribution, shares held by CureVac in its own capital shall not be taken into account. No distribution shall be made to CureVac in respect of shares held by it in its own capital.

Purchase of Shares

The acquisition by CureVac of shares (including depository receipts for shares) in its own capital which have not been fully paid up shall be null and void. CureVac may only acquire fully paid up shares in its own capital either (i) for no consideration or (ii) for consideration (in cash consideration satisfied in the form of assets) if and to the extent that CureVac's general meeting has authorized CureVac's management board for this purpose and all other relevant statutory requirements under Dutch law are observed.

CureVac's management board currently has no such authorization.

The abovementioned does not apply to shares acquired by CureVac under universal title of succession.

The Company may not purchase its own shares unless authorized by the shareholders' meeting or in other very limited circumstances as set out in the German Stock Corporation Act (*Aktiengesetz*). The Company's shareholders' meeting held on May 17, 2024 authorized the management board until May 16, 2029, provided it complies with the legal requirement of equal treatment, to acquire treasury shares up to a total of 10% of BioNTech's share capital at the time of the relevant resolution or at the time the authorization is exercised. These shares held by the Company (including shares attributable to it pursuant to the German Stock Corporation Act (*Aktiengesetz*)) must never exceed 10% of the share capital. The shares may be purchased (i) through the stock exchange, (ii) by means of a public offer directed to all shareholders of the Company, (iii) by means of a public invitation to the shareholders to make a sales offer or (iv) from the Bill & Melinda Gates Foundation under very limited circumstances as specified in the authorization. Such shares may not be purchased for trading purposes. The management board is authorized to use the shares only as specified in the authorization.

Reserves

Pursuant to Dutch corporate law, a public limited liability company (*naamloze vennootschap*) such as CureVac must maintain certain statutory reserves out of which no distributions can be made.

All reserves maintained by CureVac shall be attached exclusively to the ordinary shares. Distributions from a reserve shall in principle be made exclusively on the ordinary shares.

The management board of CureVac may resolve to charge amounts to be paid up on shares against CureVac's reserves, irrespective of whether those shares are issued to existing shareholders.

According to Section 150 of the German Stock Corporation Act (*Aktiengesetz*), the Company must establish statutory reserves *(gesetzliche Rücklage)* in the amount of 10% of the share capital. Capital reserves *(Kapitalrücklagen)* built up in accordance with the provisions of Section 272 para. 2 no. 1 to 3 HGB count towards this threshold.

The statutory reserves and the abovementioned capital reserves may only be used for restricted purposes as set out in Section 150 of the German Stock Corporation Act (*Aktiengesetz*). Voluntarily built-up capital reserves within the meaning of Section 272 para. 2 no.4 HGB are not subject to such restrictions.

Other revenue reserves *(andere Gewinnrücklagen)* to which such restrictions do not apply can be established as follows:

If the management board approves the annual financial statements, then it may appropriate the annual profit for the year to other revenue reserves in whole or in part. The appropriation of more than half of the annual profit for the year is not admissible, however, if the other revenue reserves exceed half of the share capital or insofar as they would exceed half of the share capital following such appropriation. Those amounts which have to be appropriated to the statutory reserve and any accumulated deficit brought forward from the prior year have to be deducted from the annual profit for the year in advance. Additionally, the shareholders' meeting may resolve to allocate amounts out of the accumulated retained earnings to other revenue reserves when deciding on the use of the accumulated retained earnings.

Appraisal/Dissenters' Rights

Subject to certain exceptions, Dutch law does not recognize the concept of appraisal or dissenters' rights. However, Dutch law does provide for squeeze-out procedures. Also, Dutch law provides for cash exit rights in certain situations for dissenting shareholders of a company organized under Dutch law entering into certain types of mergers or cross-border conversion or demergers. In those situations, a dissenting shareholder may file a claim with the Dutch company for compensation and/or challenge a proposed cash compensation or exchange ratio by requesting a review thereof by independent experts, subject to certain exceptions.

In case of certain structural measures involving the Company (in particular, but not limited to, certain cases of a merger or spin-off involving the Company as transferring entity under the German Transformation Act *(UmwG),* the conclusion of a domination and/or profit and loss transfer agreement with the Company as dependent entity or the relocation of the Company's registered seat to another member state of the European Union), shareholders may be entitled to receive an adequate compensation in cash or in shares of another entity. The adequacy of the compensation may be reviewed by court upon motion of one or more shareholders in a special appraisal proceeding; the court may also determine a higher compensation.

Apart from that, each shareholder of the Company may challenge the validity of any shareholders' meeting's resolution provided that such resolution violates statutory provisions or the provisions of the Company's articles in a relevant manner.

Preemptive Rights

Based on Dutch law and the CureVac articles, each holder of ordinary shares shall have a pre-emptive right in proportion to the aggregate nominal value of his ordinary shares upon an issue of shares. No pre-emptive rights are attached to preferred shares.

However, holders of ordinary shares do not have pre-emptive rights in respect of:

i. preferred shares;

ii. shares issued against non-cash contribution; or

iii. shares issued to employees of CureVac or of a group company of CureVac.

CureVac shall announce an issue with pre-emptive rights and the period during which those rights can be exercised in the Dutch State Gazette and in a nationally distributed newspaper. The pre-emptive rights can be exercised for a period of at least two weeks after the date of announcement in the Dutch State Gazette.

Pre-emption rights may be limited or excluded by a resolution of CureVac's general meeting or of the body authorized to issue shares, if that body was authorized by CureVac's general meeting for this purpose for a specified period not exceeding five years. The CureVac management board has been authorized for a period of five years until August 14, 2025, to limit or exclude pre-emption

German law generally provides shareholders with preemptive rights when new shares, convertible bonds, bonds with warrants, profit participation rights or participating bonds are issued.

Under the Company's articles, the management board may, however, with the consent of the supervisory board, exclude such preemptive rights in a capital increase from the authorized capital 2025 in the following circumstances:

- to exclude fractional amounts from the subscription right;
- in the event of a capital increase against cash contributions, if the issue price of the new shares is not significantly lower than the market price; the market price is also deemed to be the price of one ADS of the Company listed on the Nasdaq stock exchange, multiplied by the number of ADSs representing one share. The total number of shares issued in exercise of this authorization to exclude subscription rights may not exceed 10% of the share capital, neither at the time this authorization becomes effective nor – if this value is lower – at the time this authorization is exercised. Shares or ADSs issued or sold during the term of this authorization in direct or analogous application of Section 186 para. 3 sentence 4 German Stock Corporation Act (*Aktiengesetz*) with the

rights in respect of an issue of shares or a grant of rights to subscribe for shares under the authorization of the management board described above under "*Authorized Capital/Outstanding Stock*". CureVac was granted renewal of this authorization at its 2025 annual general meeting that was held on June 24, 2025.

exclusion of subscription rights are to be counted towards this limit of 10% of the share capital. Furthermore, shares or BioNTech ADSs issued or to be issued to service bonds with option and/or conversion rights or option and/or conversion obligations shall be counted towards this limit of 10% of the share capital, provided that the bonds are issued during the term of this authorization in corresponding application of section 186 para. 3 sentence 4 German Stock Corporation Act (*Aktiengesetz*) with the exclusion of subscription rights. The above issue limitation applies to ADSs, provided that the number of ADSs is to be divided by the number of ADSs representing one share;

- in the event of a capital increase against contributions in kind, in particular for the issuance of shares as part of business combinations and the acquisition of companies, parts of companies and interests in companies or other assets or claims to the acquisition of assets including receivables from the Company and its group companies as well as license or industrial property rights; to service option or conversion rights or obligations arising from bonds issued or to be issued by the Company and/or companies in which the Company directly or indirectly holds a majority interest; to the extent necessary to grant holders or creditors of bonds with option or conversion rights or obligations issued or to be issued by the Company and/or companies in which the Company holds a direct or indirect majority interest a subscription right to new shares to the extent to which they would be entitled after exercising the option or conversion rights or after fulfilling the option or conversion obligations; to implement a scrip dividend, whereby shareholders are offered the option of contributing their dividend entitlement (in whole or in part) to the Company as a contribution in kind in return for the issuance of new shares; and
- if the new shares are issued as part of an incentive program and/or as share-based compensation to members of the Company's management board, members of the management of companies affiliated with the Company within the meaning of Sections 15 et seq. German Stock Corporation Act

	(*Aktiengesetz*) or employees of the Company or of companies affiliated with the Company within the meaning of Sections 15 et seq. German Stock Corporation Act (*Aktiengesetz*); restrictions relating to the shares issued may be agreed. If shares are to be issued to members of the management board, the supervisory board of the Company decides on the allocation in accordance with the allocation of responsibilities under stock corporation law.
Amendments to CureVac Articles, BioNTech Articles and BioNTech Rules of Procedure	
Based on the CureVac articles, the resolution to amend the CureVac articles can only be passed by the CureVac general meeting at the proposal of CureVac's management board, subject to the approval of the supervisory board of CureVac. In respect of certain provisions in the CureVac articles, dealing with a situation where no dievini Nominee or no KfW Nominee (in each case as defined in the CureVac articles) is in office during the relevant Initial Nomination Period (as defined in the CureVac articles), an amendment to such provision will require the affirmative vote of dievini or KfW, as applicable. In case of a reduction of CureVac's issued share capital by reducing the nominal value of shares by virtue of an amendment to the CureVac articles, the resolution shall require a majority of at least two thirds of the votes cast if less than half of the issued share capital is represented at the CureVac general meeting (and a simple majority of votes cast in other cases). In case such resolution relates to preferred shares, such resolution shall always require the prior or simultaneous approval	As a rule, the Company's articles may only be amended by resolution of the shareholders' meeting. Pursuant to the Company's articles, the resolutions require a majority of at least two-thirds of the votes cast and of the share capital represented, if at least half of the share capital is not represented. The supervisory board may amend the Company's articles provided that such amendment affects the wording only but not the sense or meaning thereof. The supervisory board may issue Rules of Procedure for itself within the framework of the statutory provisions and the provisions of the Company's articles
Number of Directors	
CureVac's management board must consist of one or more managing directors, provided that, during the Initial Period (as defined in the CureVac articles), the management board shall consist of up to seven managing directors. The management board shall be composed of individuals. The supervisory board shall determine the number of managing directors. CureVac's supervisory board must consist of three or more supervisory directors provided that, during either Initial Nomination Period (as defined in the CureVac articles), the supervisory board shall consist of up to eight supervisory directors. The supervisory board shall be composed of individuals. The supervisory board shall determine the number of supervisory	The supervisory board shall comprise of six members. The management board shall consist of at least two persons. The number of members of the management board is otherwise determined by the supervisory board.

directors, which shall be no less than the number of supervisory directors as are necessary in order to allow dievini and KfW, to exercise their respective nomination rights under the CureVac articles during their respective Initial Nomination Period (as defined in the CureVac articles).

Election of Directors

All members of the management board and the supervisory board of CureVac shall be appointed by CureVac's general meeting.

Managing directors can only be appointed by the general meeting upon a nomination by the supervisory board of CureVac. CureVac's general meeting can at any time resolve to render such nomination to be non-binding in accordance with the CureVac articles.

Furthermore, supervisory directors can only be appointed upon a nomination by:

- the supervisory board;
- CureVac's shareholder dievini in accordance with Article 22.3 paragraph a. of the CureVac articles, during the Initial Nomination Period (as defined in the CureVac articles) for dievini;
- CureVac's shareholder KfW in accordance with Article 22.3 paragraph b. of the CureVac articles during the Initial Nomination Period (as defined in the CureVac articles) for KfW; or
- any Nomination Concert (as defined in the CureVac articles) in accordance with Article 22.4 of the CureVac articles.

CureVac's general meeting can at any time resolve to render such nomination to be non-binding by a simple majority of votes cast representing at least one-third of CureVac's issued share capital in accordance with the CureVac articles.

During the respective Initial Nomination Periods for dievini (as regards paragraph a. below) or KfW (as regards paragraph b. below):

a) dievini may nominate the following number of supervisory directors:

- if dievini and its Affiliates and Ultimate Beneficiaries (as defined in CureVac articles) (individually or collectively) hold shares representing at least 70% of CureVac's issued share capital: four supervisory directors;
- if dievini and its Affiliates and Ultimate Beneficiaries (as defined in the CureVac articles) (individually or collectively) hold shares representing at least 50%, but less than 70%, of CureVac's issued share capital: three supervisory directors;

All members of the supervisory board are elected by the shareholders' meeting. Unless the shareholders' meeting determines a shorter term, the members of the supervisory board are elected for a term ending with the close of the shareholders' meeting which resolves on the formal approval of their acts for the fourth fiscal year following the commencement of their term, not counting the year in which their term of office commences; provided that a term shall not be more than six years. Reappointments are permissible. The Company's management board are appointed by resolution of the supervisory board.

- if dievini and its Affiliates and Ultimate Beneficiaries (as defined in CureVac's articles) (individually or collectively) hold shares representing at least 30%, but less than 50%, of CureVac's issued share capital: two supervisory directors;
- if dievini and its Affiliates and Ultimate Beneficiaries (as defined in CureVac's articles) (individually or collectively) hold shares representing at least 10%, but less than 30%), of CureVac's issued share capital: one supervisory director; and

b) KfW may nominate one supervisory director.

Any Nomination Concert (as defined in the CureVac articles) may nominate one supervisory director for each 20% of the issued share capital represented by that respective Nomination Concert. Such nominee must be independent from the Nomination Concert (as defined in the CureVac articles) and CureVac under the standards applicable to CureVac under the DCGC and United States securities laws and stock exchange rules.

Other than as set out above, members of the CureVac supervisory board can only be appointed by the general meeting upon a nomination by the supervisory board of CureVac.

The CureVac general meeting can at any time resolve to render any of the above-mentioned nominations to be non-binding by a simple majority of votes cast representing at least one-third of CureVac's issued share capital in accordance with the CureVac articles.

Removal of Board Members

CureVac's general meeting may at any time suspend or dismiss any managing director or supervisory director. In addition, the supervisory board may at any time suspend a managing director. A suspension by the supervisory board can at any time be lifted by CureVac's general meeting.

A resolution of the CureVac general meeting to suspend or dismiss a managing director or supervisory director shall require a majority of at least two thirds of the votes cast representing more than half of the issued share capital, unless the resolution is passed at the proposal of the supervisory board.

The supervisory board may remove a member of the management board prior to the expiration of his or her term only for cause, such as gross breach of duties (*grobe Pflichtverletzung*), the inability to manage the business properly (*Unfähigkeit zur ordnungsgemäßen Pflichtausübung*) or a vote of no-confidence during the shareholders' meeting (*Vertrauensentzug*). The shareholders themselves are not entitled to appoint or dismiss the members of the management board.

Members of the supervisory board may be removed with or without cause by way of a shareholders' meeting resolution.

The CureVac general meeting may at any time suspend or dismiss any supervisory director. A resolution of the CureVac general meeting to suspend or dismiss a supervisory director shall require a majority of at least two thirds of the votes cast representing more than half of the issued share capital, unless the resolution is passed (i) at the proposal of the supervisory board, (ii) during the Initial Nomination Period (as defined in the CureVac articles) for dievini, at the proposal of dievini (in respect of a dievini Nominee (as defined in the CureVac articles) or (iii) during the Initial Nomination Period (as defined in the CureVac articles) for KfW, at the proposal of KfW (in respect of the KfW Nominee (as defined in the CureVac articles).

If a managing director or supervisory director is suspended and the CureVac general meeting does not dismiss him or her within three months from the date of such suspension, the suspension shall lapse.

Inability of Board Members and Vacancies on the Board

Based on the CureVac articles, if a managing director is absent or incapacitated, he or she may be replaced temporarily by a person whom the management board has designated for that purpose and, until then, the other managing director(s) shall be charged with the management of CureVac. If all managing directors are absent or incapacitated, the management of CureVac shall be attributed to the supervisory board. The person(s) charged with the management of CureVac in this manner, may designate one or more persons to be charged with the management of CureVac instead of, or together with, such person(s).

Where a supervisory director is no longer in office or is unable to act, he or she may be replaced temporarily by a person whom the supervisory board has designated for that purpose and, until then, the other supervisory directors(s) shall be charged with the supervision of CureVac. Where a supervisory director who has been appointed upon a nomination by dievini or KfW (as defined in the CureVac articles) in accordance with the CureVac articles is no longer in office or is unable to act, he or she may only be temporarily replaced by a person designated for such purposes by dievini or KfW, as applicable. The replacement becomes effective and the supervisory director so designated shall immediately have all rights, responsibilities, tasks and duties of a supervisory director (including any voting rights and specific rights awarded to the supervisory director he is replacing at the supervisory board) and (in

Under the law, vacant positions on the management board are filled by the supervisory board in accordance with the general rules of appointment, which provide that vacancies are filled by the simple majority of votes of supervisory board members present or represented by proxy at the vote (with, under certain circumstances, the chairman having a casting vote), unless otherwise provided by the company's articles of association. In case of emergencies, a vacant position on the management board may be filled by an individual appointed by the court. Vacant positions on the supervisory board are filled in accordance with the general rules of appointment.

relation to dievini to the fullest extent permitted by applicable law and at all times subject to KfW's right to designate a supervisory director in accordance with the CureVac articles) shall become a full member of the supervisory board with the rights of a KfW Nominee (as defined in the CureVac articles) or dievini Nominee (as defined in the CureVac articles), as the case may be, as soon as a written designation to that effect has been received by the chairman or vice-chairman of the CureVac supervisory board.

In case all supervisory directors are no longer in office or are unable to act, the supervision of CureVac shall be attributed to:

- the former supervisory director who most recently ceased to hold office as the chairman of the CureVac supervisory board, provided that he or she is willing and able to accept that position;
- during the Initial Nomination Period (as defined in the CureVac articles) for dievini, a person designated for such purpose by dievini, unless the former supervisory director referred to under i. above was appointed upon a nomination by dievini pursuant to the CureVac articles and he or she is willing and able to accept the position; and
- during the Initial Nomination Period (as defined in the CureVac articles) for KfW, a person designated for such purpose by KfW, unless the former supervisory director referred to under i. above was appointed upon a nomination by KfW pursuant to the CureVac articles and he or she is willing and able to accept the position,

which persons jointly may designate one or more other persons to be charged with the supervision of CureVac (instead of, or together with, such persons). The persons charged with the supervision of CureVac pursuant to the previous sentence shall cease to hold that position when the CureVac general meeting has appointed one or more persons as supervisory director(s) with due observance of the CureVac articles.

Furthermore, if for whatever reason, there is no dievini Nominee or no KfW Nominee (both as defined in the CureVac articles) in office during the Initial Nomination Period (as defined in the CureVac articles) for dievini or KfW, as relevant, and a decision needs to be taken with respect to any matter referred to in the applicable supervisory board rules, then the supervisory board shall not take any such decision until the

replacement supervisory director of dievini or KfW, respectively, has validly become a full member of the supervisory board following his designation, unless dievini or KfW, as the case may be, has failed to notify the designation to the chairman of the CureVac supervisory board within four weeks after such chairman has notified dievini or KfW, as the case may be, in writing of the absence of the nominee. Dievini or KfW, as the case may be, shall notify the designation of the replacement supervisory director of dievini or KfW, respectively, to the chairman of the CureVac supervisory board as soon as reasonably and practicably possible, but in any event within the four-week period as referred to in the previous sentence.

Action by Written Consent

Under Dutch law, resolutions of CureVac's general meeting may be adopted in writing without holding a meeting of shareholders, provided that (i) the articles of association allow such action by written consent, (ii) CureVac has not issued bearer shares or, with its cooperation, depository receipts for shares in its capital, and (iii) the resolution is adopted unanimously by all shareholders that are entitled to vote. Although the CureVac articles allow for resolutions of the general meeting to be adopted in writing, the requirement of unanimity renders the adoption of shareholder resolutions without holding a meeting not feasible for CureVac as a publicly traded company.

The Company's shareholders may not act by written consent apart from the possibility of postal voting in the context of shareholders' meetings (for details, please see below).

Annual Shareholders' Meetings

Based on Dutch law and the CureVac articles, at least one general meeting shall be held annually. This annual general meeting shall be held within six months after the end of CureVac's financial year. General meetings must be held in the place CureVac has its corporate seat, being Amsterdam, the Netherlands, or in Arnhem, Assen, The Hague, Haarlem, 's-Hertogenbosch, Groningen, Leeuwarden, Lelystad, Maastricht, Middelburg, Rotterdam, Schiphol (Haarlemmermeer), Utrecht or Zwolle, each also in the Netherlands.	As a European stock corporation governed by German law, the Company must hold an annual shareholders' meeting within six months of the end of its fiscal year. The annual shareholders' meeting shall be held at the Company's seat or, if applicable, at the venue (in Germany) where its shares are listed. Under the Company's articles, the management board is authorized to provide for the Annual shareholders' meeting to be held without the physical presence of the shareholders or their proxies at the location of the annual shareholders' meeting (virtual annual shareholders' meeting).

Advance Notice Requirements for Stockholder Nominations and Other Proposals

A general meeting must be convened with due observance of the relevant statutory minimum convening period. All persons with meeting rights (generally being shareholders, usufructuaries or pledgees with voting or meeting rights or holders of depository receipts for shares issued with CureVac's cooperation) must be convened for the CureVac general meeting in accordance with Dutch law. The shareholders may be convened for the CureVac general meeting by means of convening letters sent to the addresses of those shareholders. This does not prejudice the possibility of sending a convening notice by electronic means in accordance with Dutch law. The convocation notice of the general meeting of shareholders of CureVac shall state the items to be discussed and voted on (including for the annual CureVac general meeting, among other matters, the discussion and adoption of the annual accounts, the appropriation of profits, and proposals relating to the CureVac management board and supervisory board), the place and time of the meeting and the procedure for participating at the meeting whether or not by written proxy-holder. The notice of the meeting shall also state the record date and the manner in which the persons entitled to attend or vote at a meeting may procure their registration and exercise their rights (including by electronic means of communication, if applicable).	Shareholders representing in the aggregate at least 5% of the Company's ordinary shares or owning shares with an aggregate nominal amount of at least EUR 500,000 may request the addition of one or several items to the agenda of any shareholders' meeting. Such requests must be submitted to the management board in writing, stating the reasons or a draft resolution, and must be received by the Company at least 30 days before the meeting.

Extraordinary Meeting of Shareholders

Pursuant to Dutch law, one or more shareholders and/or persons with meeting rights, who solely or jointly represent at least 10% of the issued and outstanding share capital, may request the CureVac management board in	Extraordinary shareholders' meetings of the Company may be convened if the interests of the Company so require. Such meetings are generally called by the management board or the supervisory board. In addition, shareholders

writing to convene a CureVac general meeting. If the CureVac management board has not taken the steps necessary to ensure that such meeting can be held within 6 weeks after the request, the requesting shareholder(s) and or other persons with meeting rights may at their request be authorized by the competent Dutch court in preliminary relief proceedings to convene a CureVac general meeting. The court shall refuse the application if it does not appear that the applicant(s) has/have previously requested the CureVac management board to convene a CureVac general meeting and the CureVac management board has not taken the necessary steps so that the CureVac general meeting could be held within 6 weeks after the request. Such a request to CureVac's management board is subject to certain additional requirements. Additionally, the applicant must have a reasonable interest in the meeting being held.

One or more shareholders, alone or together, representing at least 3% of the issued and outstanding share capital may also request to include items in the agenda of a CureVac general meeting. Requests must be made in writing and received by the CureVac management board at least 60 days before the day of the meeting. No resolutions shall be adopted on items other than those which have been included in the agenda. In accordance with the DCGC, a shareholder may only request the inclusion of an item on the agenda after consulting the CureVac management board in that respect. If one or more shareholders intend to request that an item be put on the agenda that may result in a change in CureVac's strategy, the CureVac management board must be given the opportunity to invoke a reasonable period to respond to such intention. Such period shall not exceed 180 days (or such other period as may be stipulated for such purpose by Dutch law and/or the DCGC from time to time). If invoked, the CureVac management board must use such response period for further deliberation and constructive consultation, in any event with the shareholders(s) concerned, and must explore the alternatives. At the end of the response time, the CureVac management board must report on this consultation and the exploration of alternatives to the CureVac general meeting. The response period may be invoked only once for any given general meeting and shall not apply: (a) in respect of a matter for which a response period or a cooling-off period (as discussed below) has been previously invoked; or (b) if a shareholder holds at least 75% of CureVac's issued share capital as a consequence of a successful public bid. The response period may also be invoked in response to shareholders or others with meeting rights under Dutch law requesting that a CureVac general meeting be convened, as described above.

whose shares represent at 5% of the share capital may request that a general meeting be convened. If the management board or supervisory does not comply with such a request, the court may order the special meeting to be convened or may authorize the requesting shareholders to convene the meeting themselves.

In addition, a statutory cooling-off period, similar to the aforementioned response time under the DCGC, but with a maximum of 250 days, applies in the Netherlands. According to this statutory rule, the cooling-off period could be invoked by the CureVac management board in the event:

- shareholders, using either their shareholder proposal right or their right to request a CureVac general meeting, propose an agenda item for the CureVac general meeting to dismiss, suspend or appoint a CureVac managing director or supervisory director (or to amend any provision in the CureVac articles dealing with those matters); or
- a public offer for CureVac has been announced or made without agreement having been reached with CureVac on such offer,

provided, in each case, that in the opinion of the CureVac management board, such proposal or offer materially conflicts with the interests of CureVac and its business.

The cooling-off period, if invoked, ends upon the earliest of the following events:

- the expiration of 250 days from:
  - in case of shareholders using their shareholder proposal right, the day after the deadline for making such proposal for the next CureVac general meeting has expired;
  - in case of shareholders using their right to request a CureVac general meeting, the day when they obtain court authorization to do so; or
  - in case of a public offer as described above being made without agreement having been reached with CureVac on such offer, the first following day;
- the day after a public offer without agreement having been reached with CureVac on such offer, having been declared unconditional; or
- CureVac's management board deciding to end the cooling-off period earlier.

In addition, one or more shareholders represent at least 3% of CureVac's issued share capital may request the Enterprise Chamber (*Ondernemingskamer*) of the Amsterdam Court of Appeals (*Gerechtshof Amsterdam*) for early termination of the cooling-off period. The Enterprise Chamber must rule in favor of the request if the shareholders can demonstrate that:

- the CureVac management board, in light of the circumstances at hand when the cooling-off period was invoked, could not reasonably have come to the conclusion that the relevant shareholder proposal or hostile offer constituted a material conflict with the interests of CureVac and its business;
- the CureVac management board cannot reasonably believe that a continuation of the cooling-off period would contribute to careful policy-making;
- other defensive measures, having the same purpose, nature and scope as the cooling-off period, have been activated during the cooling-off period and are not terminated or suspended at the relevant shareholders' written request within a reasonable period following the request (i.e., no 'stacking' of defensive measures).

During the cooling-off period, if invoked, the CureVac management board must gather all relevant information necessary for a careful decision-making process. In this context, the CureVac management board must at least consult with shareholders representing at least 3% of CureVac's issued share capital at the time the cooling-off period was invoked and with the CureVac's works council (if applicable). Formal statements expressed by these stakeholders during such consultations must be published on CureVac's website to the extent these stakeholders have approved that publication. Ultimately one week following the last day of the cooling-off period, CureVac's management board must publish a report in respect of its policy and conduct of affairs during the cooling-off period on the CureVac website. This report must also remain available for inspection by CureVac's shareholders and others with meeting rights under Dutch law at CureVac's office and must be tabled for discussion at the next general meeting.

Quorum for Meetings of Shareholders	
Under the CureVac articles no general quorum requirement applies to the CureVac general meeting. However, certain resolutions can only be adopted by the CureVac general meeting by a(n) (enhanced) majority of the votes, representing a certain part of the issued share capital.	As a rule, resolutions of the shareholders' meeting do not require a quorum to be present at the shareholders' meeting.
Liability of Directors and Officers	
Under Dutch law, members of the management board and the supervisory board may be held liable for damages in the event of improper or negligent performance of their duties. They may be held jointly and severally liable for damages to CureVac and to third parties for infringement of the articles of association or of certain provisions of the Dutch Civil Code. In certain circumstances, including in the event of bankruptcy of the company, directors may incur additional specific civil and criminal liabilities.	Under German law, any provision, whether contained in the company's articles of association or any contract or otherwise, that purports to exempt a management or supervisory board member from any liability that would otherwise attach to such board member in connection with any negligence, default, breach of duty or breach of trust in relation to the company is void. Under German law, members of both the management board and members of the supervisory board are liable to the company, and in certain cases to third parties or shareholders, for any damage caused to them due to a breach of such member's duty of care. Apart from insolvency or special circumstances, only the company has the right to claim damages from members of either board. The company may waive or settle claims for damages against a negligent management or supervisory board member only after the expiry of three years and only if the company's shareholder meeting approves thereof and no minority holding at least 10% of the capital stock raises an objection. In case a third party raises claims directly against members of the management board or of the supervisory board, such members may claim from the company under additional requirements indemnification regarding liabilities arising out of or in connection with their services to the company.
Indemnification of Directors and Officers	
Under Dutch law, indemnification provisions may be included in a company's articles of association. Pursuant to the CureVac articles, CureVac shall indemnify and hold harmless each of its current and former managing directors and supervisory directors and such other current or former officers or employees of CureVac or its group companies as designated by the management board subject to the approval of the supervisory board (each an "**Indemnified Officer**"), against (i) any financial losses or damages incurred by such Indemnified Officer, and (ii) any expense reasonably paid or incurred by such Indemnified Officer in connection with	The Company may not, as a general matter, indemnify its supervisory board members and management board members to the extent such indemnification is related to a breach of duty of care as a member of the supervisory board or management board, respectively. It may, however, purchase directors' and officers' liability insurance. The insurance may be subject to any mandatory restrictions imposed by German law, including a deductible. However, the Company may indemnify a member of the supervisory board or management board to the extent such indemnification is not related to a breach of the respective duty of care.

any threatened, pending or completed suit, claim, action or legal proceedings of a civil, criminal, administrative or other nature, formal or informal, in which he becomes involved, to the extent this relates to his current or former position with CureVac and/or a CureVac group company and in each case to the extent permitted by applicable law.

No indemnification shall be given to an Indemnified Officer (i) if a competent court or arbitral tribunal has established, without having (or no longer having) the possibility for appeal, that the acts or omissions of such Indemnified Officer that led to the financial losses, damages, expenses, suit, claim, action or legal proceedings are of an unlawful nature (including acts or omissions which are considered to constitute malice, gross negligence, intentional recklessness and/or serious culpability attributable to such Indemnified Officer; (ii) to the extent that his financial losses, damages and expenses are covered under insurance and the relevant insurer has settled, or has provided reimbursement for, these financial losses, damages and expenses (or has irrevocably undertaken to do so); (iii) in relation to proceedings brought by such Indemnified Officer against CureVac, except for proceedings brought to enforce indemnification to which he is entitled pursuant to the CureVac articles, pursuant to an agreement between such Indemnified Officer and CureVac which has been approved by the management board or pursuant to insurance taken out by CureVac for the benefit of such Indemnified Officer; or (iv) for any financial losses, damages or expenses incurred in connection with a settlement of any proceedings effected without CureVac's prior consent.

Conflict of Interest Transactions

According to Dutch law, a managing director or supervisory director shall not take part in the deliberation and decision-making if he or she has a direct or indirect personal interest therein, which is in conflict with the interests of CureVac and its business. In case all managing directors have a conflict of interest, the resolutions will be adopted by the supervisory board. In case all supervisory directors have a conflict of interest, the resolutions may nevertheless be passed by the supervisory board as if none of the Supervisory Directors has a conflict of interest.

If a managing director or supervisory director does not comply with the provisions on conflicts of interest, the resolution concerned is subject to nullification by the competent Dutch court and

Members of the management board and the supervisory board are required to act in the best interests of the Company and to avoid conflicts of interest. In the event of a potential conflict of interest there is an obligation to promptly disclose this conflict to the relevant corporate body. Affected members are typically not permitted to participate in discussion or votes regarding the transaction in question. Breaches of the disclosure and conduct obligations in connection with conflicts of interest may result in claims for damages by the Company against the relevant board member.

the person concerned may be held liable towards CureVac. However, even if such a resolution were nullified, the nullification would not affect any acts performed on CureVac's behalf pursuant to the (invalid) resolution.

Information Rights and Rights of Inspections

Shareholders will be provided, at the CureVac general meeting, with all information that the shareholders require, unless doing so would be contrary to an overriding interest of CureVac. Under the DCGC, CureVac is expected to give reasons to shareholders for electing not to provide such information on the basis of an overriding interest. In principle, individual shareholders have no right to obtain specific information they would like to receive outside a CureVac general meeting.

On application by a shareholder or a pledgee or usufructuary of CureVac Shares, the management board shall furnish an extract from the shareholders' register, free of charge, insofar as it relates to the applicant's right in respect of the relevant share(s).

Under German *law,* a list of participants *(Teilnehmerverzeichnis)* has to be drawn up at any shareholders' meeting including, in particular, the (company) name and place of residence/seat of the shareholders present or represented at the shareholders' meeting and/or of the representatives of shareholders (if any). The list of participants has to be made available in the shareholders' meeting to all participants prior to the first vote. Upon request, each stockholder may inspect such list of participants for a period of two years after the respective shareholders' meeting.

German law does not permit the Company's shareholders to inspect corporate books and records. However, Section 131 of the German Stock Corporation Act (*Aktiengesetz*) provides each shareholder with a right to information at the shareholders' meeting, to the extent that such information is necessary to permit a proper evaluation of the relevant item on the agenda or the respective information has been given to a shareholder prior to the shareholders' meeting in its capacity as shareholder. The right to information is a right only to oral information. Information may be given in writing to shareholders, but under Section 131 of the German Stock Corporation Act (*Aktiengesetz*) they are neither entitled to receive written information nor to inspect documents.

Apart from that, the Company is obliged to publish and make available information and documents as stipulated by European and German law (e.g. the publication of its annual financial statements or in preparation of resolutions of the shareholders' meeting).

The notices of the Company are published in the Federal Gazette *(Bundesanzeiger),* unless specified otherwise by law. Information to shareholders can also be conveyed by electronic means. The shareholders' right pursuant to Sections 125 paragraph 2 and 128 paragraph 1 of the German Stock Corporation Act (*Aktiengesetz*) to receive notifications pursuant to Section 125 paragraph 1 of the German Stock Corporation Act (*Aktiengesetz*) is limited to transmission of the notifications via electronic communication. Irrespective of that, the supervisory board remains entitled, but is not obliged, to use other forms of transmission, if and insofar this does not conflict with any statutory provisions.

Stockholder Suits

In the event a third-party is liable to CureVac, only CureVac itself can bring a civil action against that party. The individual shareholders do not have the right to bring an action on behalf of CureVac. Only in the event that the cause for the liability of a third-party to CureVac also constitutes a tortious act directly against a shareholder does that shareholder have an individual right of action against such third-party in its own name. Dutch law provides for the possibility to initiate such actions collectively, in which a foundation or an association can act as a class representative and has standing to commence proceedings and claim damages if certain criteria are met. The court will first determine if those criteria are met. If so, the case will go forward as a class action on the merits after a period allowing class members to opt out from the case has lapsed. All members of the class who are residents of the Netherlands and who did not opt out will be bound to the outcome of the case. Residents of other countries must actively opt in in order to be able to benefit from the class action. The defendant is not required to file defenses on the merits prior to the merits phase having commenced. It is possible for the parties to reach a settlement during the merits phase. Such a settlement can be approved by the court, which approval will then bind the members of the class, subject to a second opt out. This new regime applies to claims brought after January 1, 2020, and which relate to certain events that occurred prior to that date. For other matters, the old Dutch class actions regime will apply. Under the old regime, no monetary damages can be sought. Also, a judgment rendered under the old regime will not always bind all individual class members. Even though Dutch law does not provide for derivative suits, managing, directors, supervisory directors and officers can still be subject to liability under U.S. securities laws.

Further, corporate disputes in the Netherlands are typically brought before the Dutch Enterprise Chamber of the Amsterdam Court of Appeal, a specialized business court with exclusive jurisdiction over certain statutory proceedings related to corporate disputes. In so-called inquiry proceedings, the Enterprise Chamber may, at the request of one or more parties that have standing to initiate such proceedings, order an inquiry into the policy and course of affairs of a company and provide injunctive relief by ordering a wide range of immediate measures (provided certain admissibility criteria are met).

Under German stock corporation law, any stockholder of a (European) stock corporation may file an action against the corporation challenging the validity of resolutions of the shareholders' meeting of shareholders based on a violation by the respective resolution of statutory law or the articles of association of the corporation. Generally, there is no quorum for such action and the action does not need to be based on a violation of individual rights of the claimant. However, subject to certain exceptions, only shareholders are entitled to such action who were shareholders already at the time of the convocation of the respective shareholders' meeting of shareholders and requested at the meeting that an objection to the respective shareholders' resolution be included in the minutes of the meeting.

Claims of the corporation against the members of its management/supervisory bodies (i.e., supervisory board members and management board members), may generally only be pursued by the corporation itself. The corporation is obliged to pursue such claims upon demand of the shareholders' meeting of shareholders by resolution requiring a simple majority of the votes cast. Upon the motion of shareholders whose aggregate shareholdings amount to at least 10°/ 100 of the share capital or 1 million Euro, a special representative will be appointed by court and authorized to represent the corporation for purposes of the pursuit of such claims. Furthermore, shareholders' derivative suits for such claims may also be filed by shareholders whose aggregate shareholdings amount to at least 1% of the share capital or 100,000 Euro upon authorization by court. However, certain additional requirements for such authorization by a court apply: (i) the shareholders must provide evidence that they acquired the shares before they should have learned from a publication about the alleged breaches of duty or alleged damages, (ii) the shareholders must demonstrate that they requested in vain that the corporation file a law suit within an appropriate period of time, (iii) facts must exist that give reason to suspect that the corporation has suffered a loss as a result of improprieties or gross breaches of statutory provisions or articles of association and (iv) no predominate interest of the corporation exists which would prevent the assertion of the claim for damages.

In addition, general court proceedings existing under Dutch law are available to (minority) shareholders. This includes regular and preliminary relief proceedings, tort claims and requests for a declaration of right. Generally, Dutch law allows claims for both specific performance and damages. Also, court proceedings in other jurisdictions may be available, e.g. claims against a non-Dutch co-shareholder. A shareholder may, for example, challenge a resolution adopted by a corporate body of the company.	
Stockholder Rights Plans	
N/A	N/A

5 PROCEEDS AND COSTS OF THE OFFER; REASONS FOR THE OFFER AND USE OF PROCEEDS

5.1 Proceeds and Costs of the Offer

The Company will receive any validly tendered CureVac Shares of CureVac Shareholders for which it has accepted the offer, but will not receive any proceeds.

The Company estimates that the cost incurred in connection with the Offer will be approximately €17.5 million.

5.2 Reasons for the Offer; Use of Proceeds

The Company intends to acquire all CureVac Shares under the Offer. The Company will not receive any proceeds from the Offer.

For the Company's reasons for the Offer, see section *"3.1.1.5 BioNTech's Reasons for the Offer and the Transactions*".

6 DILUTION

As of June 30, 2025, the net asset value attributable to owners of the parent in the Company's consolidated statement of financial position, corresponding to total equity as presented in the Q2 Unaudited Interim Condensed Consolidated Financial Statements was €18,505.1 million, or €76.96 per outstanding ordinary share, based on 240,455,450 outstanding ordinary shares in the Company (i.e., excluding treasury shares (including ADSs held in treasury) which are accounted for as reductions in net book value).

The following table illustrates the dilutive effects of the Share Capital Increases for the existing shareholders of the Company at Exchange Ratios of 0.06476, 0.05181 and 0.04318 assuming the Offer had taken place on June 30, 2025.

	As of June 30, 2025 (unaudited)		
Net book value prior to the completion of the Offer			
Net asset value attributable to owners of the parent (net book value) (in millions €)	18,505.1	18,505.1	18,505.1
Total number of issued shares	248,552,200	248,552,200	248,552,200
Treasury shares held by the Company (including through ADSs held in treasury)	8,096,750	8,096,750	8,096,750
Total number of outstanding shares (i.e., excluding treasury shares)	240,455,450	240,455,450	240,455,450
Net asset value attributable to owners of the parent (net book value) per outstanding share (in €)	76.96	76.96	76.96
	Exchange Ratio		
	0.06476	0.05181	0.04318
Implied price per Offer ADS (in $)	84.37	105.46	126.55
Net book value after completion of the Offer[1]			
Increase in net asset value attributable to owners of the parent (net book value) (in millions €)	1,066.8	1,066.8	1,066.9
Net asset value attributable to owners of the parent (net book value) (in millions €)	19,571.9	19,571.9	19,572.0
Dilution after completion of the Offer:[1]			
Newly issued shares of the Company	15,061,575	12,049,725	10,042,601
Total number of outstanding shares of the Company (i.e., excluding treasury shares (including through ADSs held in treasury))	255,517,025	252,505,175	250,498,051
(Decrease) / increase in net asset value attributable to owners of the parent (net book value) per outstanding share (in €)	(0.4)	0.6	1.2
(Decrease) / increase in net asset value attributable to owners of the parent (net book value) per outstanding share (accretion / (dilution) to existing shareholders of the Company) (in %)	(0.5%)	0.7%	1.5%
Amount by which the implied price per Offer ADS exceeds the net asset value per share after completion of the Offer (immediate dilution / (accretion) to the new shareholders of the Company per ADS) (in €)	(4.6)	12.5	29.8
Immediate dilution / (accretion) to the new shareholders of the Company per ADS (in %)	(6.0%)	16.1%	38.2%
Shareholdings of CureVac Shareholders in the Company as a result of the Offer (in %)	5.9%	4.8%	4.0%
Decrease of the shareholding of the existing shareholders of the Company (in %)[2]	(5.9)%	(4.8)%	(4.0)%
Shareholding of existing shareholders of the Company as a group following completion of the Offer (in %)	94.1%	95.2%	96.0%

(1) Based on the following assumptions: (i) As of the date of the Prospectus, CureVac has 225,181,647 shares outstanding; (ii) CureVac issues no more than 7,393,645 additional CureVac Shares prior to the completion of the Offer, including under the CureVac VSOP awards, the CureVac PSU, CureVac RSU and the CureVac options, resulting in a total of 232,575,292 CureVac Shares; (iii) all CureVac Shares are held by one shareholder and the Offer will be accepted for 100% of such CureVac Shares; (iv) upon completion of the Offer, 232,575,292 CureVac Shares will be contributed to the Company in kind against the issuance of such number of ordinary shares (underlying the Offer ADSs) resulting from the multiplication of the total number of issued CureVac Shares and the Exchange Ratio set forth above; (v) the Company's acquisition costs amount to the aggregate value of the number of newly issued ordinary shares that will underly the Offer ADSs, each such ordinary share valued at the implied price per Offer ADS at the Exchange Ratios listed in the table above, respectively; (vi) the Company's total transaction cost (legal, banking and other fees and costs) amount to approximately €17.5 million; (vii) there are no tax or interest effects; (viii) the Offer ADSs issued as Offer Consideration will be transferred solely in consideration of the purchase of CureVac Shares; and (ix) no goodwill is created and no purchase price adjustments are made upon completion of the Offer. A EUR/USD exchange rate of 1.172 as of June 30, 2025 has been applied in these calculations.

(2) Based on the shareholding of CureVac Shareholders of 15,061,575, 12,049,725 and 10,042,601 ordinary shares held through Offer ADSs following settlement of the Offer (i.e., assuming no existing shareholder of the Company holds CureVac Shares which are contributed to the Company in connection with the Offer). Calculated based on 240,455,450 ordinary shares outstanding (i.e., excluding ordinary shares held in treasury (including through ADSs held in treasury)).

7 DIVIDEND POLICY

Under German law, we may pay dividends only from the accumulated profit (*Bilanzgewinn*) reflected in our annual financial statements (as opposed to the consolidated financial statements for us and our subsidiaries) prepared in accordance with German generally accepted accounting principles of the German Commercial Code (*Handelsgesetzbuch*) and adopted by the Management Board and the Supervisory Board, or, as the case may be, by our shareholders in a shareholders' meeting. See section "*16.8 Dividend Rights*" which explains in more detail the procedures we must follow and the German law provisions that determine whether we are entitled to declare a dividend.

In the year ended December 31, 2022, the Company paid a special dividend of €2.00 per ordinary share (including shares held in the form of ADS), corresponding to approximately €484.2 million in respect of the year ended December 31, 2021. As of the date of the Prospectus, we have not paid any dividends in the current year ending December 31, 2025 or the years ended December 31, 2024 and December 31, 2023 in respect of the respective prior year(s).

We do not anticipate paying any cash dividends on our ordinary shares in the foreseeable future. We intend to retain all available funds and any future earnings to fund the development and expansion of our business.

8 CAPITALIZATION AND INDEBTEDNESS

The following tables set forth BioNTech Group's capitalization and indebtedness as of July 31, 2025, derived from the Company's accounting records or internal management reporting system and, for the avoidance of doubt, without any adjustments for the Offer and the result of the Share Capital Increase on our capitalization and indebtedness. Investors should read these tables in conjunction with "9 Operating and Financial Review", the Q2 Unaudited Interim Condensed Consolidated Financial Statements and the Audited Consolidated Financial Statements, in each case, including the notes thereto, contained in the Prospectus.

On August 7, 2025, we entered into the GSK/CureVac Settlement Arrangements, under which we agreed, among other things, to pay (or cause to be paid) (i) $370 million (thereof $320 million in cash) to GlaxoSmithKline Biologicals SA within five days after the entry of a litigation dismissal order and (ii) $370 million to the CureVac Group within five days of the earlier to occur of (a) the termination of the Purchase Agreement and (b) the closing of the Offer. Additionally, we will pay a one percent royalty on sales of certain licensed products in the United States and, subject to the closing of the Offer, outside of the United States to each of GlaxoSmithKline Biologicals SA and CureVac beginning with effect as of January 1, 2025. Subject to the closing of the Offer, we must pay $130 million to GlaxoSmithKline Biologicals SA, and Pfizer will reimburse us for $80 million and for half of the aforementioned royalty payments. The resulting payment obligations and additional payment obligations and claims under the GSK/CureVac Settlement Arrangements which are subject to closing of the Offer are not considered in our capitalization table, financial indebtedness table and information on indirect and contingent indebtedness as of July 31, 2025, each as set forth below. Subject to the closing of the Offer (where relevant), the aforementioned material liabilities would have resulted in a corresponding (net) increase of our 'current debt' before payments are made and a reduction of 'other reserves' in our capitalization table set forth below. The payments will affect the position 'cash' in our financial indebtedness table set forth below. For details on the GSK/CureVac Settlement Agreements, see section "11.12.1.4 Settlement Arrangements with GSK and CureVac".

On September 12, 2025, we received an upfront payment of $1.5 billion from BMS under the BMS Agreement (see section "11.6.1 Bristol Myers Squibb"), which as of July 31, 2025 was recorded under trade and other receivables and therefore had not been considered in our financial indebtedness table as of July 31, 2025 below, but would have had a corresponding euro-equivalent effect on the position of 'cash' set forth therein.

8.1 Capitalization

(in millions €)	As of July 31, 2025 (unaudited)
Total current debt (including current portion of non-current debt)[1]	**1,977.7**
Guaranteed	—
Secured[8]	5.1
Unguaranteed/Unsecured	1,972.6
Total non-current debt (excluding current portion of non-current debt)[2]	**1,269.1**
Guaranteed	—
Secured[8]	27.0
Unguaranteed/Unsecured	1,242.1
Shareholders' Equity[3]	**18,531.3**
Share capital[4]	240.4
Legal reserve[5]	1,447.9
Other reserves[6]	16,843.0
Total[7]	**21,778.1**

(1) 'Total current debt' is referred to as 'Total current liabilities' in the Company's consolidated statements of financial position.
(2) 'Total non-current debt' is referred to as 'Total non-current liabilities' in the Company's consolidated statements of financial position.
(3) 'Shareholders' Equity' is calculated as the sum of 'Share capital', 'Legal reserve' and 'Other reserves'.

(4) 'Share capital' is calculated as 'Share capital' less 'Treasury shares' each as presented in the Company's consolidated statements of financial position.
(5) 'Legal reserve' is referred to as 'Capital reserve' in the Company's consolidated statements of financial position.
(6) 'Other reserves' is calculated as 'Other reserves', as presented in the Company's consolidated statements of financial position plus 'Retained earnings' as of June 30, 2025 as shown in the Q2 Unaudited Interim Condensed Consolidated Financial Statements, without considering our net profit / (loss) for the period of July 1 to July 31, 2025.
(7) 'Total' is calculated as the sum of 'Total current debt', 'Total non-current debt' and 'Shareholders' Equity'.
(8) The current and non-current debt is partially secured by collateral over property and buildings.

8.2 Total Financial Indebtedness

(in millions €)	As of July 31, 2025 (unaudited)
A. Cash(1)	405.3
B. Cash equivalents(2)	9,689.9
C. Other current financial assets(3)	3,951.9
D. Liquidity (A + B + C)	**14,047.1**
E. Current financial debt (including debt instruments, but excluding current portion of non-current financial debt)(4)	9.5
F. Current portion of non-current financial debt(5)	46.8
G. Current financial indebtedness (E + F)	**56.3**
H. Net current financial indebtedness (G - D)	**(13,990,8)**
I. Non-current financial debt (excluding current portion and debt instruments)(6)	330,0
J. Debt instruments	—
K. Non-current trade and other payables	—
L. Non-current financial indebtedness (I + J + K)	**330,0**
M. Total financial indebtedness (H + L)	**(13,660.8)**

(1) 'Cash' corresponds to 'Cash at banks and cash on hand' as presented in 'Cash and cash equivalents' in the Company's consolidated statements of financial position and disclosed in Note 8 to the Q2 Unaudited Interim Condensed Consolidated Financial Statements. As of July 31, 2025, a low single digit amount of 'Cash' is subject to restrictions.
(2) 'Cash equivalents' corresponds to 'Cash and cash equivalents' as presented in the Company's consolidated statements of financial position, excluding 'Cash at banks and cash on hand' and disclosed in Note 8 to the Q2 Unaudited Interim Condensed Consolidated Financial Statements. As of July 31, 2025, 'Cash equivalents' is not subject to any restrictions.
(3) 'Other current financial assets' corresponds to current 'Other financial assets' as presented in the Company's consolidated statements of financial position, except for 'Foreign exchange forward contracts' disclosed in Note 8 to the Q2 Unaudited Interim Condensed Consolidated Financial Statements.
(4) 'Current financial debt (including debt instruments but excluding current portion of non-current financial debt)' corresponds to current interest-bearing debt and includes current 'Loans and borrowings' as presented in current 'Lease liabilities, loans and borrowings' in the Company's consolidated statements of financial position and disclosed in Note 8 to the Q2 Unaudited Interim Condensed Consolidated Financial Statements, excluding current portion of non-current 'Loans and borrowings' of €5.1 million.
(5) 'Current portion of non-current financial debt' includes current 'Lease liabilities' as presented in current 'Lease liabilities, loans and borrowings' in the Company's consolidated statements of financial position and current 'Contingent considerations' as presented in current 'Other financial liabilities' in the Company's consolidated statements of financial position and each disclosed in Note 8 to the Q2 Unaudited Interim Condensed Consolidated Financial Statements, including current portion of non-current 'Loans and borrowings' of €5.1 million.
(6) 'Non-current financial debt (excluding current portion and debt instruments)' corresponds to non-current interest-bearing debt and includes non-current 'Lease liabilities, loans and borrowings' in the Company's consolidated statements of financial position as well as non-current 'Contingent considerations' as presented in non-current 'Other financial liabilities' in the Company's consolidated statements of financial position and each disclosed in Note 8 to the Q2 Unaudited Interim Condensed Consolidated Financial Statements.

8.3 Lease Liabilities

As of July 31, 2025, 'Current portion of non-current financial debt' referred to in the table in section "*8.2 Total Financial Indebtedness*" above included current portion of non-current lease liabilities in the amount of €40.7 million and 'Non-current financial debt (excluding current portion and debt instruments)' referred to in the table in section "*8.2 Total Financial Indebtedness*" above included non-current lease liabilities in the amount of €174.1 million.

8.4 Indirect and Contingent Indebtedness

As of July 31, 2025, we had indirect and contingent indebtedness mainly comprising: (i) contingent liabilities regarding, but not limited to, intellectual property disputes and contractual disputes regarding, among other things, the interpretation of each party's obligations or the amounts payable under the respective agreements, product-related disputes and actions by or on behalf of our shareholders; (ii) commitments under purchase agreements for property, plant and equipment of €153.9 million; and (iii) contractual obligation to acquire intangible assets of €895.4 million. Our contingent liabilities listed under (i) are subject to significant uncertainties and, therefore, determining the likelihood of a loss and/or the measurement of any loss can be complex. Consequently, we are unable to estimate the range of reasonably possible loss, as described in sections "*9.8.1 Contingent Liabilities*" and "*11.12 Legal and Administrative Proceedings*". For information on provisions recognized in our consolidated statements of financial position for, among other things, contractual disputes and settlements as well as obligations from onerous CMO contracts, see section "*9.7.2.2 Provisions*".

8.5 Working Capital Statement

In the Company's opinion, the working capital of the BioNTech Group is sufficient to meet the present requirements of the BioNTech Group over a period of at least twelve months from the date of the Prospectus.

8.6 No Significant Change

Other than payment obligations assumed under the GSK/CureVac Settlement Arrangements (see section "*11.12.1.4 Settlement Arrangements with GSK and CureVac*"), there have been no significant changes in the Group's financial position or financial performance between June 30, 2025 and the date of this Prospectus. For information on recent developments and full-year trends, see section "*24 Recent Developments and Outlook*".

9 OPERATING AND FINANCIAL REVIEW

Investors should read the following discussion and analysis of our results of operations, financial position and cash flows in conjunction with sections "1 Risk Factors", "2.5 Forward-Looking Statements", "2.8 Note Regarding the Presentation of Financial Information", "2.10 Non-IFRS Measures/Alternative Performance Measures", "8 Capitalization and Indebtedness" as well as the Audited Consolidated Financial Statements and the Q2 Unaudited Interim Condensed Consolidated Financial Statements, which are included in the Prospectus. The Audited Consolidated Financial Statements have been prepared in accordance with IFRSs and the additional requirements of German commercial law pursuant to Section 315e para. 3 in conjunction with para. 1 HGB. The Q2 Unaudited Interim Condensed Consolidated Financial Statements have been prepared in accordance with IFRS Accounting Standards as issued by the International Accounting Standards Board (IASB) applicable to interim financial reporting (IAS 34).

The Company's Audited Consolidated Financial Statements, the Unaudited Interim Condensed Consolidated Financial Statements and the other historical financial information included in the Prospectus do not necessarily indicate the Company's future results of operations, financial position and cash flows. In addition, the results of operations for interim periods included in the Prospectus are not necessarily indicative of the results to be expected for the full year or any future reporting period.

In this section, where financial information is presented as "audited" in tables, this means that it was taken from the Audited Consolidated Financial Statements. Where financial information is presented in tables as "unaudited", it indicates that the financial information has not been taken from the Audited Consolidated Financial Statements but has been taken either from the Q2 Unaudited Interim Condensed Consolidated Financial Statements or the Company's accounting records, its internal management reporting system or has been calculated based on figures from the above-mentioned sources.

This section refers to certain non-IFRS financial measures or APMs. These non-IFRS financial measures or APMs are not defined in accordance with IFRSs or any other internationally accepted accounting principles. They may not be comparable to other similarly titled financial measures of other companies, have limitations as analytical tools and should not be considered in isolation or as a substitute for analysis of our results of operation, financial position, and cash flows, each as reported under IFRSs (see section "2.10 Non-IFRS Measures/Alternative Performance Measures").

9.1 Overview

We believe we are a global next-generation immunotherapy company aiming to pioneer novel medicines against cancer, infectious diseases and other serious diseases. Since our founding in 2008, we have focused on harnessing the power of the immune system with the goal to address human diseases with unmet medical needs and major global health burdens. Our fully integrated model combines decades of research in immunology with a multi-technology innovation engine, Good Manufacturing Practice, or GMP, manufacturing, translational drug discovery, clinical development, commercial capabilities, computational medicine, data science and artificial intelligence, or "**AI**", and machine learning, or "**ML**", capabilities to discover, develop and commercialize our marketed product and product candidates.

We have built a broad toolkit across multiple technology platforms, including a diverse range of potentially first-in-class therapeutic approaches. This includes investigational messenger ribonucleic acid, or mRNA immunotherapies, protein-based therapeutics (including targeted antibodies such as monoclonal, bispecific and antibody-drug conjugates, or "**ADCs**") and cell therapies.

We believe our multi-technology combination of platforms and product candidates positions us as pioneers in the field of individualized, patient-centric therapeutic approaches in oncology and infectious diseases.

Our primary focus is oncology, where we endeavor to address the full continuum of cancer from early to late disease stages. The root causes of cancer treatment failure are cancer heterogeneity and interindividual variability. Driven by random sequential mutations, every patient's cancer is different and within one patient's tumor, every cell is different. Addressing these two challenges is the core of our strategy. To augment anti-tumor activity and to counteract resistance mechanisms, we seek to combine compounds with non-overlapping, potentially synergistic mechanisms of action.

Our approach has generated a robust product and diversified product candidate pipeline across a range of technologies in oncology and infectious disease, and has led to the approval of our first marketed product, the COVID-19 vaccine *Comirnaty*.

9.2 Selected Factors Affecting our Results of Operations and Financial Position

We believe that the following factors have significantly affected our results of operations, financial position, and cash flows in the periods presented, and we expect that these factors will continue to have a significant influence in the future.

9.2.1 Research and Development Expenses

The nature of our business and primary focus of our activities, including development of our platforms and manufacturing technologies, have generated, and will continue to generate as we execute on our strategy, a significant amount of research and development expenses. We believe our past and anticipated future research and development expenses are an indicator of our future earnings potential, which is dependent on, among other things, the results of preclinical or nonclinical studies and clinical trials for our product candidates as well as the results of research and our other platform activities and the outcome, timing and cost of meeting regulatory requirements established by the FDA, the EMA and other comparable regulatory authorities.

Our key objectives are to develop an innovative immunotherapy pipeline in oncology targeting multiple product approvals in the coming years and to build a sustainable respiratory infectious disease vaccine business based on the BioNTech-Pfizer *Comirnaty* franchise. As of the date of the Prospectus, our pipeline consists of 16 clinical programs in oncology, with more than 20 Phase 2 and Phase 3 clinical trials, and six clinical programs in infectious disease. We aim to advance additional product candidates to late-stage development, and we expect to continue building our pipeline towards our potential first oncology launch in 2026. For information on our R&D pipeline, see section "*11.3.2 Pipeline of Product Candidates*".

Research and development expenses represent costs incurred by us for the following: cost to develop our platforms; discovery efforts leading to product candidates; clinical development expenses for our programs; cost to develop our manufacturing technology and infrastructure; and digital infrastructure costs. These costs comprise the following categories: personnel-related expenses, including salaries, benefits, share-based compensation expense and social security expense; expenses incurred under agreements with third parties, such as consultants, investigative sites, contract research organizations, or CROs, that conduct our preclinical studies and clinical trials, and in-licensing arrangements; costs of acquiring, developing and manufacturing materials for preclinical studies and clinical trials, including both internal manufacturing and third-party contract manufacturing organizations, or CMOs; expenses incurred for the procurement of materials, laboratory supplies and non-capital equipment used in the research and development process; and facilities, depreciation and amortization, and other direct and allocated expenses incurred as a result of research and development activities.

Regarding internal projects, we consider that regulatory approval and other uncertainties inherent in the development of new products preclude the capitalization of internal development expenses as an intangible asset until marketing approval from a regulatory authority is obtained, i.e., the related costs are recognized as research and development expenses. Similar considerations apply to subsequent internal cost relating to intellectual property because the technical feasibility of the internal research and development activity can only be demonstrated by the receipt of marketing approval for a related product from a regulatory authority in a major market.

With respect to in-licensing agreements, if the in-licensing also includes research and development services to be provided by the licensor, the share of consideration attributable to these services is recognized in research and development expenses in line with the performance of the services. Our principal in-licensing and option agreements in place as of the date of the Prospectus include our agreements with Acuitas, Louisiana State University, MRT-CellScript, the NIH, and TRON, and are further described in section "*11.7.3 In-Licensing*".

The following table summarizes our research and development expenses for the periods indicated (break-down as per internal cost allocation logic):

	Six months ended June 30,		Years ended December 31,		
	2025	2024	2024	2023	2022
(in millions €)	(unaudited)		(unaudited, unless otherwise indicated)		
Non-COVID-19 vaccine	984.6	976.5	2,018.2	1,470.1	987.0
COVID-19 vaccine	50.1	115.6	236.0	313.0	550.0
Total research and development expenses	**1,034.7**	**1,092.1**	**2,254.2***	**1,783.1***	**1,537.0***

* Audited

During the periods presented, the growth of our research and development expenses were mainly influenced by advancing our key pipeline candidates, but also by higher personnel expenses resulting from our growing headcount in clinical research & development and in scientific research & development (see section "*17.9.1 Employees*"). The decrease in research and development expenses between the six months ended June 30, 2024 and 2025 was mainly driven by the reprioritization of clinical trials towards focus programs.

9.2.2 Investments into our Research, Development, Manufacturing and Commercialization Capabilities

Our consolidated statements of financial position and cash flows are affected by our investments into measures aimed at expanding our research, development, manufacturing and commercialization capabilities, as further described in "*11.2.2 Strategic Outlook*" and "*11.2.3 Execution in 2024 and 2025 to date*". Recent projects include, but are not limited to the construction of our first large-scale individualized mRNA cancer immunotherapy manufacturing facility in Mainz, Germany, as well as expansion in clinical development and commercial operations capabilities.

We intend to further optimize our manufacturing network by (i) establishing focused centers of excellence for early-stage mRNA manufacturing in Idar-Oberstein, Germany, and cell and gene manufacturing in Gaithersburg, Maryland, United States while (ii) right-sizing our center of excellence for late-stage mRNA manufacturing in Marburg, Germany. We currently expect that this will involve consolidating and adjusting capacities within our manufacturing network, which could lead to a reduction of the workforce in Marburg, Germany. We further intend to consolidate and adjust our capacities across administrative functions and preclinical research in Europe and North America, as further described in "*11.2.2 Strategic Outlook*".

During the periods presented, we have made significant capital expenditures for operating activities expansion and improvement of our research and development as well as manufacturing facilities and IT functions, amounting to €91.2 million during the six months ended June 30, 2025, €307.1 million during the year ended December 31, 2024, €275.5 million during the year ended December 31, 2023 and €363.3 million during the year ended December 31, 2022.

Alongside our investments in our manufacturing network, we have received government grants and similar grants which upon receipt are recognized as other non-financial liabilities, which are mainly related to assets such as buildings and equipment. These government grants and similar grants are recognized in profit or loss within other operating income over the respective useful life of the underlying assets, see Note 2.3.9 to our Audited Consolidated Financial Statements 2024. The grants are related to conditions such as construction milestones.

9.2.3 Collaboration and Licensing Agreements

Our results of operations are affected by our collaborations and licensing agreements and option agreements to obtain licenses with pharmaceutical companies and academic research institutions.

Collaboration and license agreements contain multiple elements, including licenses to use, research, develop, manufacture and commercialize candidates and products, research and development services as well as obligations to develop and manufacture preclinical and clinical material and products. We enter into these collaborations in an effort to advance and accelerate our discovery and development programs in oncology, and to leverage our drug classes into additional disease indications while minimizing our incremental costs.

Our principal collaborations in place as of the date of the Prospectus include collaborations and license agreements with BMS, Autolus, Biotheus (which we acquired in the first quarter of 2025), DualityBio, Fosun Pharma, Genentech, Genmab, InstaDeep (which we acquired in 2023), OncoC4 and Pfizer, and are further described in section "*11.6 Third-Party Collaborations*", including information on upfront and potential milestone payments.

Under these collaborations and licensing agreements, we either wholly own or retain significant rights to all of our clinical stage programs, either in the form of a global share of profit and co-commercialization rights with our collaborators in certain markets or significant royalties and milestones. The revenues we generate from our collaborations and licensing agreements are therefore heavily influenced by the volumes available under the collaboration and the agreed upon purchase quantities. Depending on the contractual arrangements, our revenues include our share of the collaboration partners' gross profit and, hence, are also influenced by the costs incurred, including, for example, inventory write-downs.

The point in time at which we recognize revenues depend on the specific obligations under our collaboration and license agreements. Under the terms of our licensing arrangements, when we provide the licensee with a research and development license, which represents a right to access our intellectual property as it exists throughout the license period (as our intellectual property is still subject to further research), revenues are recognized over time. Revenues based on the collaboration partners' gross profit, which is shared under the respective collaboration agreements, are recognized based on the sales-based or usage-based royalty exemption; i.e., when the underlying sales occur.

Revenues from the sale of pharmaceutical and medical products (e.g., COVID-19 vaccine sales and other sales of peptides and retroviral vectors for clinical supply) are recognized when the product is transferred to the customer. In general, payments from customers are due within 30 days after invoice. For information on revenue recognition and payment terms under to our collaboration with Pfizer, see section "*9.2.4 COVID-19 Revenues and Seasonal Effects*" below.

Our collaboration revenues also consist of milestone payments, upfront licensing payments and reimbursement of development expenses. Certain of these payments are initially recorded on our statement of financial position and are subsequently recognized as revenues in accordance with our accounting policy as described further in Note 2.3.3 to our Audited Consolidated Financial Statements 2024.

We plan to continue to identify potential collaborators who can contribute meaningful resources and insights to our programs and allow us to more rapidly expand our impact to broader patient populations.

9.2.4 COVID-19 Revenues and Seasonal Effects

We have collaborated with Pfizer to jointly develop the COVID-19 vaccine *Comirnaty*. Additional COVID-19 vaccine candidates, as well as various dosing regimens and use in patient populations with certain medical conditions are being tested in clinical trials.

Revenues from the supply and sales of our COVID-19 vaccine worldwide mainly comprise our share of the collaboration partner's gross profit derived from sales in the collaboration partner's territory but also revenues from direct sales, based on the allocation of marketing and distribution rights in the territories defined under our collaborations. Under our collaboration with Pfizer, we are the marketing authorization holder in the United States, the European Union, or EU, the United Kingdom, or the U.K., Canada and other countries. Additionally, we are the holder of emergency use authorizations, or "**EUAs**", or equivalents in the United States (jointly with Pfizer) and other countries for the COVID-19 vaccine program. Pfizer has marketing and distribution rights worldwide apart from Greater China, Germany, and Türkiye. We have the marketing and distribution rights to *Comirnaty* in Germany and Türkiye. Under our collaboration with Fosun Pharma, Fosun Pharma has marketing and distribution rights in Mainland China, Hong Kong Special Administrative Region, or "**SAR**", Macau SAR and Taiwan.

We recognize direct product sales from supplying COVID-19 vaccine in our territories Germany and Türkiye. The share of gross profit that we owe our collaboration partner Pfizer based on such direct sales is recognized as cost of sales.

Based on COVID-19 vaccine sales in the collaboration partners' territories, we are eligible to receive a share of their gross profit, which represents a seasonally affected net figure and is recognized as collaboration revenues during the commercial phase, together with sales milestones. Manufacturing cost variances either reflected as transfer price adjustments as described above or resulting from costs highly probable to be incurred by the partner, were taken into account when determining the gross profit.

Sales to collaboration partners represent sales of products manufactured by us to collaboration partners. Whenever responsibilities in the manufacturing and supply process of the COVID-19 vaccine shift and the COVID-19 vaccine is transferred, the vaccine is sold from one partner to the other. Under the collaboration with Pfizer, from time to time, those sales are significantly influenced by amounts due to write-downs of inventories as well as costs related to production capacities derived from contracts with CMOs that became redundant. Those costs represent accrued manufacturing variances and are charged to our partner once finally materialized. These manufacturing variances are reflected as transfer price adjustments once identified. The regular reassessment of these manufacturing variances may result in adjustments to the respective prior-period revenues.

While we generally recognize COVID-19 revenues when the product is transferred to the customer and generally receive payment within 30 days after the invoice, with respect to our collaboration with Pfizer, however, there is a significant time lag between when revenues are recognized and the payments are received. The contractual settlement of the gross profit share has a temporal offset of more than one calendar quarter. As Pfizer's financial quarter for subsidiaries outside the United States differs from ours, it creates an additional time lag between the recognition of revenues and the payment receipt.

During the past years, our COVID-19 vaccine revenues generally decreased as compared to prior years, in line with a lower COVID-19 vaccine market demand as a result of lower incidence of COVID-19 infections and associated hospitalizations and deaths as COVID-19 transitions from a pandemic to an endemic disease, with variations due to stronger seasons as experienced during the six-months ended June 30, 2025. As a result of reduced demand, write-downs by our collaboration partner Pfizer have also significantly reduced our gross profit share and hence negatively influenced our revenues, for example during the year ended December 31, 2024. However, we expect seasonal COVID-19 vaccination to continue, driven by the continuous evolution of the virus. We aim to maintain COVID-19 vaccine market leadership and expect continued revenues from COVID-19 vaccine sales in the near term.

Our COVID-19 vaccine revenues are subject to seasonal effects in the fall / winter of the northern hemisphere. During the year ended December 31, 2024, for example, most of our COVID-19 vaccine revenues were generated in the last four months of the year, corresponding to market demand.

For risks relating to our COVID-19 vaccine revenues, see section "*1.1 Risks Related to our COVID-19 Vaccine and the Commercialization of our Pipeline*".

9.2.5 Sales, General and Administrative Expenses

Our sales, general and administrative expenses consist primarily of personnel-related costs for general sales efforts, purchased services, travel costs, social security, transport costs and depreciation as well as personnel-related costs (including share-based compensation) for finance, legal, human resources, business development and other administrative and operational functions, professional fees, accounting and legal services, information technology and facility-related costs. General and administrative costs relate to the operation of the business, unrelated to the research and development function or any individual program.

During the periods presented, our sales, general and administrative expenses amounted to €258.0 million during the six months ended June 30, 2025 and grew to €599.0 million during the year ended December 31, 2024 from €557.7 million during the year ended December 31, 2023 and €541.2 million during the year ended December 31, 2022. Adjustments to the figures related to the year ended December 31, 2022 were initially made in our Audited Consolidated Financial Statements 2023 due to change in functional allocation of general and administrative expenses and other operating

expenses, see section "*9.5.1 Consolidated Statements of Profit or Loss*" and Note 7.2 to our Audited Consolidated Financial Statements 2024. The increase in our sales, general and administrative expenses during the periods presented was mainly attributable to increased expenses for IT services as well as to higher personnel expenses resulting from an increase in headcount as we grew our supporting functions (see section "*17.9.1 Employees*").

When we obtain regulatory approval for any of our product candidates and do not enter into any third-party commercialization collaborations, we expect to incur significant expenses related to building a sales and marketing team to support sales, marketing and distribution activities.

9.2.6 Changes in Foreign Currency Exchange Rates

We publish our consolidated financial statements in euro, which is also our functional currency. Revenues and expenses incurred in U.S. dollars will be translated into euro when they are reported in our consolidated financial statements. We are subject to currency risks, as our income and expenditures are denominated in euro and the U.S. dollar. As such, we are exposed to exchange rate fluctuations between these currencies. Cash inflows denominated in U.S. dollar mainly result from generating proceeds under our collaboration agreements. Our revenues are primarily collaboration revenues from earnings based on our partners' gross profit, which is shared under the respective collaboration agreements and represents payments we receive in U.S. dollar. Cash outflows dominated in U.S. dollar mainly result from amounts spent on research and development activities and license obligations as well as expanding our global footprint further.

With the aim of preserving capital, surplus liquidity is mainly invested in domestic currency investments as exchange rate fluctuations can reduce the value of our financial positions. We limit the effects of the identified risks by means of a coordinated and consistently implemented risk strategy. Besides applying natural hedging relationships where possible, foreign exchange forward contracts are concluded, as a matter of principle, as instruments to mitigate foreign currency exchange risk associated with foreign currency-denominated payments.

From period to period, foreign currency translation effects from the translation of operating activities include foreign exchange differences arising on operating items such as trade receivables and trade payables, which are either shown as other operating income or expenses on a net basis, can however have a significant effect on our results of operations. For example, translation effects from valuing our U.S. dollar-denominated trade receivables which were mainly incurred under our COVID-19 collaboration with Pfizer contributed to U.S. dollar-denominated trade payables as well as U.S. dollar-denominated other financial liabilities, which mainly relate to obligations incurred from our license agreements, resulted in foreign exchange differences, net expenses of €54.8 million during the six months ended June 30, 2025, net income of €84.9 million during the year ended December 31, 2024, compared to net expenses of €252.0 million during the year ended December 31, 2023 and net income of €727.4 million during the year ended December 31, 2022.

9.2.7 Litigation and Settlements

We are and may be involved in various legal proceedings, including patent litigation, product liability and other product-related litigation, as well as other legal proceedings that arise from time to time in the ordinary course of business, including, but not limited to, personal injury, consumer, off-label promotion, securities, antitrust, employment law, tax, environmental, and/or other claims or investigations. From time to time, we incur cost for the filing, prosecuting, obtaining, maintaining, protecting, defending and enforcing our patent claims and other intellectual property rights, including actions for patent and other intellectual property infringement, misappropriation and other violations brought by third parties against us regarding our product candidates or actions by us challenging the patent or intellectual property rights of others, as well as in relation to other contractual or other disputes, settlements, and litigation, which from time to time may affect our result of operations and cash flows.

In the periods presented, during the year ended December 31, 2024, we incurred expenses for contractual disputes and settlements of €657.4 million (net of reimbursements to be received during the years ended December 31, 2025 and December 31, 2026; reimbursement payments have begun to be received during the six months ended June 30, 2025) and had significant cash outflows for the related settlement payments in the six months ended June 30, 2025. Furthermore, we had litigation cost of €113.7 million during the year ended December 31, 2024, €29.4 million during the year ended December 31, 2023 and €3.0 million during the year ended December 31, 2022. On August 7, 2025, we entered into the GSK/CureVac Settlement Arrangements. For details on settlements arrangements made in the periods under review until the date of this Prospectus, see section "*9.2.7 Litigation and Settlements*".

9.3 Key Performance Indicators

Decisions with respect to business operations and resource allocations are made by our Management Board, as the chief operating decision maker based on the Group as a whole. Accordingly, we operate and make decisions as a single operating segment, which is also our reporting segment. We use the following financial key performance indicators and non-financial key performance indicators.

9.3.1 Financial Key Performance Indicators

The following financial performance indicators are the focus of managing our operational business development.

	Three months ended June 30,		Six months ended June 30,		Years ended December 31,		
	2025	2024	2025	2024	2024	2023	2022
(in millions €)	(unaudited)		(unaudited)		(audited, unless otherwise indicated)		
Revenues	260.8	128.7	443.6	316.3	2,751.1	3,819.0	17,310.6
Research and development expenses	509.1	584.6	1,034.7	1,092.1	2,254.2	1,783.1	1,537.0
Sales, general and administrative expenses (unaudited)	137.4	183.8	258.0	316.4	599.0	557.7	541.2
Capital expenditures for operating activities (unaudited)	38.3	94.4	91.2	156.9	307.1	275.5	363.3

Revenues – Total revenues mainly comprise commercial revenues, particularly in connection with our COVID-19 business as well as other revenue sources. Revenues are heavily influenced by the volumes available under the collaboration and the agreed upon purchase quantities. Our revenues include our share of the collaboration partners' gross profit and, hence, are also influenced by the incurring expenses. Our revenues serve as a performance indicator of our commercial earnings power.

Research and development expenses – Research and development expenses are an indicator of our future earnings potential, as this is highly dependent on the development of the clinical pipeline and the responsible use of the financial resources generated. This figure mainly includes expenses for the development of our clinical product candidates, early exploratory research and research and development overhead expenses.

Sales, general and administrative expenses – These expenses include sales and marketing expenses as well as general and administrative expenses. We use this measure to manage the expenses associated with the expansion of the sales and marketing organization to ensure the necessary infrastructure and digital capacity for future market-ready products, as well as to manage the internal administrative and coordination functions associated with the expansion of research and development, such as finance, human resources, or business development, with regard to the associated expense development.

Capital expenditures for operating activities – Capital expenditures for operating activities is the sum of additions to acquisition and production costs for property, plant and equipment and additions to acquisition costs for other intangible assets, excluding expenditure for non-operating activities related to business combinations, licensing and collaboration agreements (expenditures for the acquisition of operating property, plant and equipment plus expenditures for the acquisition of operating intangible assets, unless they are made as part of business combinations and licensing and collaboration agreements). These mainly include expenditures for the expansion and improvement of our research and development as well as manufacturing facilities and investments in a state-of-the-art IT infrastructure to support the company in all digitization projects.

For additional information, including the definition, calculation and reconciliation of sales, general and administrative expenses and capital expenditures for operating activities, see section "*2.10 Non-IFRS Measures/Alternative Performance Measures*".

9.3.2 Non-Financial Key Performance Indicators

We use R&D pipeline progress as a key non-financial performance indicator. Progress in research achievements, such as initiating registration-directed studies and advancing towards first BLA submission, is a key performance indicator. We are working to clinically demonstrate the benefit of additional treatment approaches, further develop additional product candidates in the form of pivotal studies, and continuously expand collaborations and manufacturing capabilities to offer innovative treatments to patients around the world. For an overview of our pipeline of product candidates, see section "*11.3.2 Pipeline of Product Candidates*".

9.4 Description of Key Line Items from the Consolidated Statements of Profit or Loss

Revenues and revenue recognition – We generate revenues from collaboration and license agreements, which contain multiple elements, including licenses to use, research, develop, manufacture and commercialize candidates and products, research and development services as well as obligations to develop and manufacture preclinical and clinical material and products. For further information regarding our revenue recognition policy, please refer to Note 2.3.3 to our Audited Consolidated Financial Statements 2024.

Cost of sales – Our cost of sales include royalty expenses, purchased services, personnel-related expenses and laboratory supplies, which are generally expensed in the period in which the associated revenues occurs. Cost of sales comprise expenses from inventory write-offs and also includes amounts paid to collaboration partners for their share of profits earned in collaboration arrangements where we are the principal in the transaction.

Research and development expenses – Research and development expenses mainly includes expenses for the development of our clinical product candidates, early exploratory research and research and development overhead expenses.

Sales and marketing expenses – Our sales and marketing expenses consist of personnel-related expenses, purchased services, travel expenses, social security, transport expenses and depreciation.

General and administrative expenses – General and administrative expenses consist primarily of personnel-related expenses (including share-based compensation) for finance, legal, human resources, business development and other administrative and operational functions, professional fees, accounting and legal services, information technology and facility-related expenses.

9.5 Operating Results

9.5.1 Consolidated Statements of Profit or Loss

The following table shows our consolidated statements of profit or loss for each period presented:

	Three months ended June 30,		Six months ended June 30,		Years ended December 31,		
	2025	2024	2025	2024	2024	2023	2022
(in millions €, unless otherwise indicated)	(unaudited)		(unaudited)		(audited)		
Revenues	260.8	128.7	443.6	316.3	2,751.1	3,819.0	17,310.6
Cost of sales	(76.4)	(59.8)	(160.2)	(118.9)	(541.3)	(599.8)	(2,995.0)
Research and development expenses	(509.1)	(584.6)	(1,034.7)	(1,092.1)	(2,254.2)	(1,783.1)	(1,537.0)
Sales and marketing expenses	(19.7)	(12.9)	(33.4)	(28.5)	(67.9)	(62.7)	(59.5)

(in millions €, unless otherwise indicated)	Three months ended June 30, 2025 (unaudited)	Three months ended June 30, 2024 (unaudited)	Six months ended June 30, 2025 (unaudited)	Six months ended June 30, 2024 (unaudited)	Years ended December 31, 2024 (audited)	Years ended December 31, 2023 (audited)	Years ended December 31, 2022 (audited)
General and administrative expenses[1]	(117.7)	(170.9)	(224.6)	(287.9)	(531.1)	(495.0)	(481.7)
Other operating expenses[1]	(117.2)	(290.8)	(165.7)	(314.7)	(811.5)	(293.0)	(410.0)
Other operating income	78.2	24.1	139.8	52.4	140.6	105.0	815.3
Operating profit / (loss)	**(501.1)**	**(966.2)**	**(1,035.2)**	**(1,473.4)**	**(1,314.3)**	**690.4**	**12,642.7**
Finance income	105.4	167.7	228.0	345.3	664.0	519.6	330.3
Finance expenses	(7.0)	(7.3)	(40.9)	(9.5)	(27.4)	(23.9)	(18.9)
Profit / (Loss) before tax	**(402.7)**	**(805.8)**	**(848.1)**	**(1,137.6)**	**(677.7)**	**1,186.1**	**12,954.1**
Income taxes	16.1	(2.0)	45.7	14.7	12.4	(255.8)	(3,519.7)
Net profit / (loss)	**(386.6)**	**(807.8)**	**(802.4)**	**(1,122.9)**	**(665.3)**	**930.3**	**9,434.4**
Earnings / (Loss) per share							
Basic earnings / (loss) per share	*(1.60)*	*(3.36)*	*(3.33)*	*(4.67)*	*(2.77)*	*3.87*	*38.78*
Diluted earnings / (loss) per share	*(1.60)*	*(3.36)*	*(3.33)*	*(4.67)*	*(2.77)*	*3.83*	*37.77*

(1) Adjustments to the figures related to the year ended December 31, 2022 were initially made in our Audited Consolidated Financial Statements 2023. The adjustments relate to reclassifying legal costs in connection with certain litigation as other operating expenses, rather than general and administrative expenses, to reflect changes in reporting, see Note 7.2 to our Audited Consolidated Financial Statements 2024.

9.5.2 Comparison of the Three and Six Months Ended June 30, 2025 and the Three and Six Months Ended June 30, 2024

9.5.2.1 Revenues

The following is a summary of our revenues recognized for the periods indicated by category:

(in millions €)	Three months ended June 30, 2025 (unaudited)	Three months ended June 30, 2024 (unaudited)	Change € (unaudited)	Change % (unaudited)
COVID-19 vaccine revenues	153.3	71.9	81.4	>100
Other revenues	107.5	56.8	50.7	89
Total revenues	**260.8**	**128.7**	**132.1**	**>100**

(in millions €)	Six months ended June 30, 2025 (unaudited)	Six months ended June 30, 2024 (unaudited)	Change € (unaudited)	Change % (unaudited)
COVID-19 vaccine revenues	286.3	196.1	90.2	46
Other revenues	157.3	120.2	37.1	31
Total revenues	**443.6**	**316.3**	**127.3**	**40**

COVID-19 Vaccine Revenues

During the three and six months ended June 30, 2025 and 2024, COVID-19 vaccine revenues were recognized from the supply and sales of our COVID-19 vaccine worldwide, mainly comprising our share of the collaboration partner's gross profit derived from sales in the collaboration partner's territory. Our COVID-19 vaccine revenues increased by €81.4 million from €71.9 million during the three months ended June 30, 2024, to €153.3 million during the three months ended June 30, 2025 and increased by €90.2 million, or 46%, from €196.1 million during the six months ended June 30, 2024, to €286.3 million during the six months ended June 30, 2025. During the three months ended June 30, 2025, our sales were higher compared to the prior year period, which were largely driven by higher volume of doses sold. Our COVID-19 vaccine revenues are subject to seasonal effects in the fall and winter of the northern hemisphere.

Other Revenues

Our other revenues increased by €50.7 million, or 89%, from €56.8 million during the three months ended June 30, 2024 to €107.5 million during the three months ended June 30, 2025, and increased by €37.1 million, or 31%, from €120.2 million during the six months ended June 30, 2024 to €157.3 million during the six months ended June 30, 2025. Our other revenues were mainly derived from a pandemic preparedness contract with the German government and a one-time effect associated with Pfizer's opt-out from the further development of our shingles program, BNT167 and the associated release of the respective contract liability, during the three and six months ended June 30, 2025 and 2024.

9.5.2.2 Cost of Sales

Our cost of sales increased by €16.6 million, or 28%, from €59.8 million during the three months ended June 30, 2024 to €76.4 million during the three months ended June 30, 2025 and increased by €41.3 million, or 35%, from €118.9 million during the six months ended June 30, 2024 to €160.2 million during the six months ended June 30, 2025. While we recognized multiple positive extraordinary effects, for example derived from inventory valuation effects, in the respective prior year periods, changes in our cost of sales were additionally impacted by expenses arising from inventory write-downs to net realizable value amounting to €26.6 million and €64.3 million during the three and six months ended June 30, 2025, respectively, compared to €27.6 million and €63.6 million during the three and six months ended June 30, 2024, respectively. The inventories valued at net realizable value in our consolidated statement of financial position as of June 30, 2025 reflect contractual compensation payments.

9.5.2.3 Research and Development Expenses

The following table summarizes our research and development expenses for the periods indicated (break-down as per internal cost allocation logic):

	Three months ended June 30,		Change	
(in millions €)	2025	2024	€	%
	(unaudited)		(unaudited)	
Non-COVID-19 vaccine	483.5	525.6	(42.1)	(8)
COVID-19 vaccine	25.6	59.0	(33.4)	(57)
Total research and development expenses	**509.1**	**584.6**	**(75.5)**	**(13)**

	Six months ended June 30,		Change	
(in millions €)	2025	2024	€	%
	(unaudited)		(unaudited)	
Non-COVID-19 vaccine	984.6	976.5	8.1	1
COVID-19 vaccine	50.1	115.6	(65.5)	(57)
Total research and development expenses	**1,034.7**	**1,092.1**	**(57.4)**	**(5)**

Our research and development expenses decreased by €75.5 million, or 13%, from €584.6 million during the three months ended June 30, 2024 to €509.1 million during the three months ended June 30, 2025 and decreased by €57.4 million, or 5%, from €1,092.1 million during the six months ended June 30, 2024 to €1,034.7 million during the six months ended June 30, 2025. The decreases were mainly driven by the reprioritization of clinical trials towards focus programs.

9.5.2.4 Sales and Marketing Expenses

Our sales and marketing expenses increased by €6.8 million, or 53%, from €12.9 million during the three months ended June 30, 2024 to €19.7 million during the three months ended June 30, 2025 and increased by €4.9 million, or 17%, from €28.5 million during the six months ended June 30, 2024 to €33.4 million during the six months ended June 30, 2025. The increases were mainly driven by higher external expenses and personnel expenses.

9.5.2.5 General and Administrative Expenses

Our general and administrative expenses decreased by €53.2 million, or 31%, from €170.9 million during the three months ended June 30, 2024 to €117.7 million during the three months ended June 30, 2025 and decreased by €63.3 million, or 22%, from €287.9 million during the six months ended June 30, 2024 to €224.6 million during the six months ended June 30, 2025. The decrease was primarily driven by a reduction in external services.

9.5.2.6 Other Operating Result

Other operating result comprises other operating expenses and other operating income. Our total other operating result increased by €227.7 million, or 85%, from a negative operating result of €266.7 million during the three months ended June 30, 2024 to a negative operating result of €39.0 million during the three months ended June 30, 2025 and increased by €236.4 million, or 90%, from a negative operating result of €262.3 million during the six months ended June 30, 2024 to a negative operating result of €25.9 million during the six months ended June 30, 2025. These changes are mainly due to effects from contractual disputes in the respective prior year period, which exceeded the impact of pipeline prioritization costs and the net loss from foreign exchange differences and related effects from derivative instruments in the current period. For the three and six months ended June 30, 2025, our pipeline prioritization costs amounted to €43.6 million and mainly related to adjusting capacities in different sites as well as deferred costs in the context of reducing our workforce in certain areas.

9.5.2.7 Operating Profit / (Loss)

Our operating loss decreased by €465.1 million, or 48%, from an operating loss of €966.2 million during the three months ended June 30, 2024 to an operating loss of €501.1 million during the three months ended June 30, 2025 and decreased by €438.2 million, or 30%, from an operating loss of €1,473.4 million during the six months ended June 30, 2024 to an operating loss of €1,035.2 million during the six months ended June 30, 2025, mainly as a result of the foregoing effects.

9.5.2.8 Finance Result

Finance result comprises finance income and finance expenses. Our finance result during the three and six months ended June 30, 2025 and 2024 was mainly derived from returns, such as interests, resulting from our financial investments as well as fair value adjustments of our money market funds. It decreased by €62.0 million, or 39%, from a positive finance result of €160.4 million during the three months ended June 30, 2024 to a positive finance result of €98.4 million during the three months ended June 30, 2025 and decreased by €148.7 million, or 44%, from a positive finance result of €335.8 million during the six months ended June 30, 2024, to a positive finance result of €187.1 million during the six months ended June 30, 2025. These changes are mainly due to lower interest income and a shift from positive to negative foreign exchange differences, primarily derived from our security investments disclosed as cash equivalents and bank cash accounts held in foreign currency.

For more information on our finance result, see Note 4.3 to our Q2 Unaudited Interim Condensed Consolidated Financial Statements.

9.5.2.9 Profit / (Loss) before Tax

Our loss before tax decreased by €403.1 million, or 50%, from a loss before tax of €805.8 million during the three months ended June 30, 2024 to a loss before tax of €402.7 million during the three months ended June 30, 2025 and decreased by €289.5 million, or 25%, from a loss before tax of €1,137.6 million during the six months ended June 30, 2024 to a loss before tax of €848.1 million during the six months ended June 30, 2025, mainly as a result of the foregoing effects.

9.5.2.10 Income Taxes

Our income taxes increased by €18.1 million from an income taxes expense of €2.0 million during the three months ended June 30, 2024, to an income taxes income of €16.1 million during the three months ended June 30, 2025 and increased by €31.0 million from an income taxes income of €14.7 million during the six months ended June 30, 2024, to an income taxes income of €45.7 million during the six months ended June 30, 2025.

During the six months ended June 30, 2025 and 2024, income taxes were calculated based on the best estimate of the weighted average annual income tax rates expected for the full financial years (estimated annual effective income tax rates) on ordinary income before tax adjusted by the tax effect of any discrete items. During the six months ended June 30, 2025, our effective income tax rate was approximately 5.4%. During the six months ended June 30, 2024, our effective income tax rate was approximately 1.3%.

The effective income tax rate was mainly driven by the expected negative result for 2025 and management's assessment of the requirements in IAS 12, including on the character and amounts of taxable future profits, the periods in which those profits are expected to occur, and the availability of tax planning opportunities. Thus, in countries where the requirements of IAS 12 were not fulfilled, no deferred tax asset was recognized.

9.5.2.11 Net Profit / (Loss)

Our net loss decreased by €421.2 million, or 52%, from a net loss of €807.8 million during the three months ended June 30, 2024 to a net loss of €386.6 million during the three months ended June 30, 2025, and decreased by €320.5 million, or 29%, from a net loss of €1,122.9 million during the six months ended June 30, 2024 to a net loss of €802.4 million during the six months ended June 30, 2025, mainly as a result of the foregoing effects.

9.5.3 Comparison of the Year Ended December 31, 2024 and the Year Ended December 31, 2023

9.5.3.1 Revenues

9.5.3.1.1 Revenues by Category

The following is a summary of our revenues recognized for the periods indicated by category:

	Years ended December 31,		Change	
	2024	2023	€	%
(in millions €)	(audited)		(unaudited)	
COVID-19 vaccine revenues	2,432.1	3,776.2	(1,344.1)	(36)
Other revenues[1]	319.0	42.8	276.2	>100
Total revenues	**2,751.1**	**3,819.0**	**(1,067.9)**	**(28)**

(1) Our Audited Consolidated Financial Statements 2023 comprised the line items 'Other sales' and 'Research & development revenues from collaborations' which are disclosed as 'Other revenues' in line with the presentation in our Audited Consolidated Financial Statements 2024. Please refer to Note 6.1 of our Audited Consolidated Financial Statements 2023.

COVID-19 Vaccine Revenues

During the year ended December 31, 2024, our COVID-19 vaccines revenues were recognized from the supply and sales of our COVID-19 vaccine worldwide, mainly comprising our share of the collaboration partner's gross profit derived from sales in the collaboration partner's territory. During the year ended December 31, 2024, our COVID-19 vaccine revenues decreased as compared to the year ended December 31, 2023, in line with a lower COVID-19 vaccine market demand. In addition, write-downs by our collaboration partner Pfizer, significantly reduced our gross profit share and hence negatively influenced our revenues during the year ended December 31, 2024. Our COVID-19 vaccine revenues are subject to seasonal effects in the fall / winter of the northern hemisphere.

Other Revenues

During the year ended December 31, 2024 our other revenues increased mainly as a result of a pandemic preparedness contract with the German government effectively supplemented in the three months ended March 31, 2024.

9.5.3.1.2 Revenues by Countries

The following is a summary of our revenues recognized for the periods indicated by countries in which our customers and collaboration partners are located:

(in millions €)	Years ended December 31, 2024	2023	Change €	%
	(audited)		(unaudited)	
United States	1,847.8	3,010.9	(1,163.1)	(39)
Germany	706.9	482.7	224.2	46
Rest of the World	196.4	325.4	(129.0)	(40)
Total revenues	**2,751.1**	**3,819.0**	**(1,067.9)**	**(28)**

During the year ended December 31, 2024 COVID-19 vaccines revenues decreased in all of our regions, for the reasons set out above. In Germany, the decrease was more than offset by revenues recognized associated with the pandemic preparedness contract with the German government effectively supplemented in the three months ended March 31, 2024.

9.5.3.1.3 Revenues by Customer

The following is a summary of our revenues recognized for the periods indicated by customer:

(in millions €)	Years ended December 31, 2024	2023	Change €	%
	(audited)		(unaudited)	
Pfizer	2,011.7	3,293.0	(1,281.3)	(39)
German Federal Ministry of Health	701.0	473.6	227.4	48
Other customers	38.4	52.4	(14.0)	(27)
Total revenues	**2,751.1**	**3,819.0**	**(1,067.9)**	**(28)**

9.5.3.2 Cost of Sales

From the year ended December 31, 2023 to the year ended December 31, 2024, cost of sales decreased by €58.5 million, or 10%, from €599.8 million to €541.3 million, mainly due to recognizing lower cost of sales from our decreased COVID-19 vaccine sales, which included the share of gross profit that we owe our collaboration partner Pfizer based on our sales. In addition, cost of sales was impacted by expenses arising from inventory write-downs and scrapings in the context of the launch of our variant adapted COVID-19 vaccine in the amount of €125.8 million during the year ended December 31, 2024 (€94.5 million during the year ended December 31, 2023).

9.5.3.3 Research and Development Expenses

The following table summarizes our research and development expenses for the periods indicated (break-down as per internal cost allocation logic):

(in millions €)	Years ended December 31, 2024	2023	Change €	%
	(unaudited, unless otherwise indicated)		(unaudited)	
Non-COVID-19 vaccine	2,018.2	1,470.1	548.1	37
COVID-19 vaccine	236.0	313.0	(77.0)	(25)
Total research and development expenses	**2,254.2***	**1,783.1***	**471.1**	**26**

* Audited

From the year ended December 31, 2023, to the year ended December 31, 2024, our research and development expenses increased by €471.1 million, or 26%, from €1,783.1 million to €2,254.2 million, mainly influenced by advancing key pipeline candidates, such as our ADC antibody and individualized cancer-immunotherapy product candidates. Further contributions to the increase came from higher personnel expenses resulting from an increase in headcount.

9.5.3.4 Sales and Marketing Expenses

From the year ended December 31, 2023, to the year ended December 31, 2024, our sales and marketing expenses increased by €5.2 million, or 8%, from €62.7 million to €67.9 million, mainly due to increased expenses for setup and enhancement of commercial IT platforms and an increase in personnel expenses resulting from an increase in headcount.

9.5.3.5 General and Administrative Expenses

From the year ended December 31, 2023, to the year ended December 31, 2024, our general and administrative expenses increased by €36.1 million, or 7%, from €495.0 million to €531.1 million, mainly influenced by increased expenses for IT services as well as by an increase in personnel expenses resulting from an increase in headcount.

9.5.3.6 Other Operating Result

Other operating result comprises other operating expenses and other operating income. From the year ended December 31, 2023, to the year ended December 31, 2024, our other operating result decreased by €482.9 million from negative €188.0 million to a negative result of €670.9 million. The decreased other operating result was mainly due to the settlement of contractual disputes and related expenses to such disputes and other litigations, mainly relating to the settlements with NIH and UPenn (see further "*11.12.1 Settled Disputes*"). The amounts shown for contractual disputes are net of the related reimbursements to be received.

For more information on our other operating result, see Note 7.2 to our Audited Consolidated Financial Statements 2024.

9.5.3.7 Operating Profit / (Loss)

From the year ended December 31, 2023, to the year ended December 31, 2024, our operating profit / (loss) changed to a loss of €1,314.3 million from a profit of €690.4 million, mainly as a result of the foregoing effects.

9.5.3.8 Finance Result

Finance result comprises finance income and finance expenses. From the year ended December 31, 2023, to the year ended December 31, 2024, our total financial result increased by €140.9 million from a positive financial result of €495.7 million to a positive financial result of €636.6 million, which was driven by interest income earned on security investments as bonds, commercial paper, reverse repos and deposits as well as fair value adjustments in relation to our money market funds.

For more information on our finance result, see Note 7.3 to our Audited Consolidated Financial Statements 2024.

9.5.3.9 Profit / (Loss) before Tax

From the year ended December 31, 2023, to the year ended December 31, 2024, our profit / (loss) before tax changed to a loss of €677.7 million from a profit of €1,186.1 million, mainly as a result of the foregoing effects.

9.5.3.10 Income Taxes

Our income taxes changed by €268.2 million from income taxes expenses of €255.8 million during the year ended December 31, 2023 to an income taxes income of €12.4 million during the year ended December 31, 2024. During the year ended December 31, 2024, income taxes comprise a current income taxes income in the amount of €2.3 million (during the year ended December 31, 2023: current income taxes expenses of €243.1 million) and deferred taxes income of €10.1 million (during the year ended December 31, 2023: deferred taxes expense of €12.7 million).

The amount of deductible temporary differences, unused tax losses, and unused tax credits for which no deferred tax asset is recognized in the consolidated statement of financial position as of December 31, 2024, was €2,028.8 million. Thus, as of December 31, 2024, we have not recognized deferred tax assets for unused tax losses and temporary differences in an amount of €332.4 million (December 31, 2023: €138.0 million) as the criteria of the recognition guidance for IAS 12, which requires that no reliance should be placed on future events that cannot be controlled and are uncertain, are not met.

For more information on our income taxes, see Note 8 to our Audited Consolidated Financial Statements 2024.

9.5.3.11 Net Profit / (Loss)

From the year ended December 31, 2023, to the year ended December 31, 2024, our net profit / (loss) before tax changed to a net loss of €665.3 million from a net profit of €930.3 million, mainly as a result of the foregoing effects.

9.5.4 Comparison of the Year Ended December 31, 2023 and the Year Ended December 31, 2022

9.5.4.1 Revenues

9.5.4.1.1 Revenues by Category

The following is a summary of our revenues recognized for the periods indicated by category:

	Years ended December 31,		Change	
	2023	2022	€	%
(in millions €)	(audited)		(unaudited)	
COVID-19 vaccine revenues	3,776.2	17,145.2	(13,369.0)	(78)
Other revenues[1]	42.8	165.4	(122.6)	(74)
Total revenues	**3,819.0**	**17,310.6**	**(13,491.6)**	**(78)**

(1) Our Audited Consolidated Financial Statements 2023 and 2022 comprised the line items 'Other sales' and 'Research & development revenues from collaborations' which are disclosed as 'Other revenues' in line with the presentation in our Audited Consolidated Financial Statements 2024. Please refer to Note 6.1 of our Audited Consolidated Financial Statements 2023 and 2022.

COVID-19 Vaccine Revenues

During the year ended December 31, 2023, our COVID-19 vaccines revenues were recognized from the supply and sales of our COVID-19 vaccine worldwide, mainly comprising our share of the collaboration partner's gross profit derived from sales in the collaboration partner's territory. During the year ended December 31, 2023, our COVID-19 vaccine revenues decreased as compared to the year ended December 31, 2022, in line with a lower COVID-19 vaccine market demand.

Other Revenues

During the year ended December 31, 2023, our other revenues decreased mainly as one-time effects from our collaborations with Pfizer and Sanofi S.A. entered into in the year 2022 were non-recurring.

9.5.4.1.2 Revenues by Countries

The following is a summary of our revenues recognized for the periods indicated by countries in which our customers and collaboration partners are located:

(in millions €)	Years ended December 31, 2023 (audited)	2022 (audited)	Change € (unaudited)	% (unaudited)
United States	3,010.9	12,709.7	(9,698.8)	(76)
Germany	482.7	3,031.0	(2,548.3)	(84)
Rest of the World	325.4	1,569.9	(1,244.5)	(79)
Total revenues	**3,819.0**	**17,310.6**	**(13,491.6)**	**(78)**

During the year ended December 31, 2023, our COVID-19 vaccines revenues decreased in all of our regions, for the reasons set out above.

9.5.4.1.3 Revenues by Customer

The following is a summary of our revenues recognized for the periods indicated by customer:

(in millions €)	Years ended December 31, 2023 (audited)	2022 (audited)	Change € (unaudited)	% (unaudited)
Pfizer	3,293.0	13,795.8	(10,502.8)	(76)
German Federal Ministry of Health	473.6	3,020.5	(2,546.9)	(84)
Other customers	52.4	494.3	(441.9)	(89)
Total revenues	**3,819.0**	**17,310.6**	**(13,491.6)**	**(78)**

9.5.4.2 Cost of Sales

From the year ended December 31, 2022 to the year ended December 31, 2023, cost of sales decreased by €2,395.2 million, or 80%, from €2,995.0 million to €599.8 million, mainly due to recognizing lower cost of sales from our decreased COVID-19 vaccine sales, which included the share of gross profit that we owe our collaboration partner Pfizer based on our sales. Our cost of sales was impacted by expenses arising from inventory write-offs and expenses for production capacities derived from contracts with CMOs that became redundant. The effects were driven by reducing production capacities as well as further fostering the global production network with our collaboration partners during the year ended December 31, 2023.

Based on the regulatory approval obtained with respect to our Omicron XBB.1.5-adapted monovalent COVID-19 vaccine during the third quarter of 2023, we reversed the initial write-down of pre-launch inventory recorded in research and development expenses to a maximum of the original cost of €46.9 million. Thereof €27.3 million resulted in cost of sales during the year ended December 31, 2023 as the respective inventory has been either sold or written down. The remainder is presented in inventories as of December 31, 2023 and amounted to €19.6 million. With respect to the year ended December 31, 2022 the amount was nil.

9.5.4.3 Research and Development Expenses

The following table summarizes our research and development expenses for the periods indicated (break-down as per internal cost allocation logic):

(in millions €)	Years ended December 31, 2023	2022	Change €	in%
	(unaudited, unless otherwise indicated)		(unaudited)	
Non-COVID-19 vaccine	1,470.1	987.0	483.1	49
COVID-19 vaccine	313.0	550.0	(237.0)	(43)
Total research and development expenses	**1,783.1***	**1,537.0***	**246.1**	**16**

* Audited

From the year ended December 31, 2022 to the year ended December 31, 2023, our research and development expenses increased by €246.1 million, or 16%, from €1,537.0 million to €1,783.1 million, mainly influenced by progressing clinical studies for pipeline candidates as well as by our newly acquired product candidates and the development of variant adapted COVID-19 vaccines. The increase was further driven by an increase in wages, benefits and social security expenses resulting from a significant increase in headcount.

9.5.4.4 Sales and Marketing Expenses

From the year ended December 31, 2022 to the year ended December 31, 2023, our sales and marketing expenses increased by €3.2 million, or 5%, from €59.5 million to €62.7 million, mainly due to increased expenses for setup and enhancement of commercial IT platforms and an increase in wages, benefits and social security expenses resulting from an increase in headcount.

9.5.4.5 General and Administrative Expenses

From the year ended December 31, 2022 to the year ended December 31, 2023, our general and administrative expenses increased by €13.3 million, or 3%, from €481.7 million to €495.0 million, mainly influenced by increased expenses for IT services as well as by wages, benefits and social security expenses resulting from an increase in headcount.

9.5.4.6 Other Operating Result

Other operating result comprises other operating expenses and other operating income. From the year ended December 31, 2022 to the year ended December 31, 2023, our other result decreased by €593.3 million from positive €405.3 million to a negative result of €188.0 million. The other operating result reflected the change in foreign exchange rates and included net negative foreign exchange differences during the year ended December 31, 2023 compared to net positive foreign exchange differences during the year ended December 31, 2022 that related to our U.S. dollar denominated trade receivables which were mainly incurred under our COVID-19 vaccine collaboration with Pfizer, U.S. dollar denominated trade payables as well as U.S. dollar denominated other financial liabilities which mainly relate to obligations incurred from our license agreements. The amounts were offset by recording the change in fair value of foreign exchange forward contracts that were entered to manage some of our transaction exposures but were not designated as hedging instruments under IFRSs.

For more information on our other operating result, see Notes 7.2 and 7.3 to our Audited Consolidated Financial Statements 2023.

9.5.4.7 Operating Profit / (Loss)

From the year ended December 31, 2022 to the year ended December 31, 2023, our operating profit decreased by €11,952.3 million, or 95%, from €12,642.7 million to €690.4 million, mainly as a result of the foregoing effects.

9.5.4.8 Finance Result

Finance result comprises finance income and finance expenses. From the year ended December 31, 2022 to the year ended December 31, 2023, our total finance result increased by €184.3 million from a positive financial result of €311.4 million to a positive finance result of €495.7 million, which was driven by interest income earned on bank deposits and financial securities as well as fair value adjustments in relation to our money market funds. During the year ended December 31, 2022, the fair value adjustments derived from remeasuring the derivative embedded in our convertible note significantly affected our finance result.

For more information on our finance result, see Notes 7.4 and 7.5 to our Audited Consolidated Financial Statements 2023.

9.5.4.9 Profit / (Loss) before Tax

From the year ended December 31, 2022 to the year ended December 31, 2023, our profit before tax decreased by €11,768.0 million, or 91%, from €12,954.1 million to €1,186.1 million, mainly as a result of the foregoing effects.

9.5.4.10 Income Taxes

Our income taxes expenses decreased by €3,263.9 million from €3,519.7 million during the year ended December 31, 2022 to income taxes expenses of €255.8 million during the year ended December 31, 2023. During the year ended December 31, 2023, income taxes comprise current income taxes expenses of €243.1 million (during the year ended December 31, 2022: income taxes expenses of €3,629.6 million) and deferred taxes expenses of €12.7 million (during the year ended December 31, 2022: deferred taxes income of €109.9 million).

The amount of deductible temporary differences, unused tax losses, and unused tax credits for which no deferred tax asset is recognized in the statement of financial position as of December 31, 2023 is €531.5 million. Thus, as of December 31, 2023, we have not recognized deferred tax assets for unused tax losses and temporary differences in an amount of €138.0 million (December 31, 2022: €136.7 million) as the criteria of the recognition guidance for IAS 12, which requires that no reliance should be placed on future events that cannot be controlled and are uncertain, are not met.

For more information on our income taxes, see Note 8 to our Audited Consolidated Financial Statements 2023.

9.5.4.11 Net Profit / (Loss)

From the year ended December 31, 2022 to the year ended December 31, 2023, our net profit decreased by €8,504.1 million, or 90%, from €9,434.4 million to €930.3 million, mainly as a result of the foregoing effects.

9.6 Liquidity and Capital Resources

Given our strong financial, scientific and operational accomplishments, we believe we have the resources to diligently allocate our current capital to drive a multi-platform strategy and deliver a fully integrated global biotechnology company.

As of June 30, 2025, we had cash and cash equivalents of €10,269.5 million, current security investments of €3,363.8 million and non-current security investments of €2,356.0 million, accumulating to €15,989.3 million in cash, cash equivalents and security investments. Our cash and cash equivalents are predominantly held in euro.

Cash and cash equivalents and financial securities are invested in accordance with our asset management and investment policy, primarily with a focus on liquidity and capital preservation, and consist primarily of cash at banks and on hand as well as long- and short-term security investments.

We expect to finance our operations primarily through available cash and operating and investing cash flows and, if required, through external financing.

9.6.1 Consolidated Statements of Cash Flows

The following table presents principal components of our consolidated statements of cash flows for the period indicated:

(in millions €)	Three months ended June 30,		Six months ended June 30,		Years ended December 31,		
	2025	2024	2025	2024	2024	2023	2022
	(unaudited)		(unaudited)		(audited)		
Net cash flows from / (used in) operating activities	**146.5**	**1,627.2**	**(634.2)**	**1,309.9**	**207.7**	**5,371.4**	**13,577.4**
Net cash flows from / (used in) investing activities	**(64.4)**	**(241.4)**	**1,182.4**	**(2,545.8)**	**(2,081.2)**	**(6,954.5)**	**(35.3)**
Net cash flows used in financing activities	**(13.3)**	**(22.9)**	**(27.1)**	**(30.7)**	**(45.9)**	**(778.6)**	**(1,419.3)**
Net increase / (decrease) in cash and cash equivalents	**68.8**	**1,362.9**	**521.1**	**(1,266.6)**	**(1,919.4)**	**(2,361.7)**	**12,122.8**
Change in cash and cash equivalents resulting from exchange rate differences	9.2	(3.3)	(6.9)	3.5	14.8	(14.5)	60.1
Change in cash and cash equivalents resulting from other valuation effects	6.6	40.5	(6.6)	(23.9)	2.8	164.8	(0.5)
Cash and cash equivalents at the beginning of the period	10,184.9	8,976.6	9,761.9	11,663.7	11,663.7	13,875.1	1,692.7
Cash and cash equivalents as of the end of the period	**10,269.5**	**10,376.7**	**10,269.5**	**10,376.7**	**9,761.9**	**11,663.7**	**13,875.1**

9.6.1.1 Net Cash Flows from / (used in) Operating Activities

We derive cash flows from operations primarily from the sale of products and services rendered. Our cash flows from operating activities are significantly influenced by cash we generate from our COVID-19 vaccine collaboration under which we receive a share of our collaboration partner's gross profit as well as our use of cash for operating expenses and working capital to support the business.

Our net cash flows from operating activities during the three months ended June 30, 2025 were €146.5 million. Cash received from our revenue streams exceeded the cash payments for our operating business, resulting in a cash inflow of €94.7 million for three months ended June 30, 2025. We generated positive cash contributions from interest and other payments related to the security investments of €73.1 million and grants of €7.8 million, which were partly offset by tax payments of €14.9 million and by share based payment programs of €11.5 million.

Our net cash flows from operating activities during the three months ended June 30, 2024, were €1,627.2 million. Cash received from our revenue streams exceeded the cash payments for our operating business, resulting in an increase in cash of €1,455.6 million. Additionally, we received positive cash contributions from tax refunds for 2024 from overpayments of €66.4 million, from grants of €32.8 million and from returns such as interests or sales resulting from our financial investments of €80.8 million.

Our net cash flows used in operating activities during the six months ended June 30, 2025, were €634.2 million. Cash payments for our operating activities exceeded our cash received from our revenue streams during the six months ended June 30, 2025, resulting in a cash outflow of €808.9 million. We generated positive cash contributions from interest and other payments related to the security investments of €191.7 million and grants of €31.0 million, which were partly offset by tax payments of €27.1 million and by share based payment programs of €15.1 million.

Our net cash flows from operating activities during the six months ended June 30, 2024, were €1,309.9 million. Cash received from our revenue streams exceeded the cash payments for our operating business, resulting in an increase in cash of €1,194.6 million. Additionally, we received positive cash contribution from grants of €42.0 million and from returns such as interests or sales resulting from our financial investments of €280.2 million. On the other hand, we paid income taxes of €192.4 million.

Cash received from our revenue streams exceeded the cash payments for our operating activities during the year ended December 31, 2024, resulting in a positive cash contribution of €184.0 million. Additionally, the positive cash contribution from interest and other payments related to the security investments of €474.9 million and grants of €106.0 million were offset mainly by exercised share-based payment programs and related wage tax payments of €154.5 million as well as by income tax payments of €389.2 million. In total, the cash inflow from operating activities was €207.7 million.

Our net cash flows generated in operating activities during the year ended December 31, 2023, were €5,371.4 million, comprising a profit before tax of €1,186.1 million, negative non-cash adjustments of €393.2 million, and a net positive change in assets and liabilities of €5,574.8 million. Non-cash items primarily included net foreign exchange differences as well as share-based payment expenses without cash-effect. The net positive change in assets and liabilities was primarily due to a decrease in trade receivables related to our COVID-19 collaboration with Pfizer.

Our net cash flows generated in operating activities during the year ended December 31, 2022, were €13,577.4 million, comprising a profit before tax of €12,954.1 million, positive non-cash adjustments of €370.9 million, and a net positive change in assets and liabilities of €4,518.5 million. Non-cash items primarily included net foreign exchange differences as well as share-based payment expenses without cash-effect. The net positive change in assets and liabilities was primarily due to a decrease in trade receivables related to our COVID-19 collaboration with Pfizer.

9.6.1.2 Net Cash Flows from / (used in) Investing Activities

Our net cash flows used in investing activities during the three months ended June 30, 2025 were €64.4 million. This amount includes €34.7 million mainly representing net payments in security investments. The net payments in property, plant and equipment and intangible assets of €29.7 million are related to investments in building our laboratory and office facilities in Mainz, Germany and elsewhere.

Our net cash flows used in investing activities during the three months ended June 30, 2024 were €241.4 million. This amount includes €100.3 million mainly spent on security investments. The net payments in property, plant and equipment and intangible assets of €141.1 million are related to investments in building our laboratory and office facilities in Mainz, Germany, Singapore and in-licensing.

Our net cash flows from investing activities during the six months ended June 30, 2025 were €1,182.4 million. This amount includes €1,908.2 million representing mainly repayments from matured security investments offset by payments for the purchase of intangible assets of €572.3 million mainly consist of a payment of €565.1 million for the settlement of our pre-existing relationship in connection with the License and Collaboration Agreement with Biotheus entered into in November 2023, which is separate from the remaining purchase price to be transferred for the acquired business of Biotheus (for more information on the acquisition of Biotheus, see Note 5 to our Q2 Unaudited Interim Condensed Consolidated Financial Statements). Other offsetting effects are the remaining net cash outflow for the Biotheus business combination of €78.5 million and net payments in property, plant and equipment of €75.0 million related to investments in building our laboratory and office facilities in Mainz, Germany and elsewhere.

Our net cash flows from investing activities during the six months ended June 30, 2024 were €2,545.8 million. The amount includes €2,267.8 million mainly spent on security investments. The net payments in property, plant and equipment and intangible assets of €278.0 million are related to investments in building our laboratory and office facilities in Mainz, Germany and elsewhere as well as in-licensing.

Our net cash flows used in investing activities during the year ended December 31, 2024, were €2,081.2 million. The amount includes mainly net investments of €1,400.1 million spend into security investments as defined in Note 12.6 to our Audited Consolidated Financial Statements 2024, €188.9 million in equity instruments and €165.8 million for the purchase in intangible assets, mainly driven from in-licensing arrangements. In addition, purchase of property, plant and equipment amounted to €286.5 million, whereof the majority was related to investments in building our laboratory and office facilities in Mainz, Germany as well as the sites in Singapore and Kigali, Rwanda.

Our net cash flows used in investing activities during the year ended December 31, 2023, were €6,954.5 million. The amount includes €5,912.1 million spent into security investments (investment in other financial assets net of proceeds from maturity of other financial assets). Payments for the purchase of intangible assets of €455.4 million are mainly caused by or driven from in-licensing arrangements of €330.6 million. €336.9 million were paid for the acquisition of InstaDeep, a leading global technology company in the field of artificial intelligence (AI) and machine learning. In addition, the amount for purchase of property, plant and equipment amounted to €249.4 million whereof the majority was related to investments in building our laboratory and office facilities in Mainz, Germany.

Our net cash flows used in investing activities during the year ended December 31, 2022, were €35.3 million, mainly comprising the release of €375.2 million cash deposits and compensated by purchase of property, plant and equipment of €329.2 million, which was mainly attributable to the acquisition of the land and laboratory as well as the office facility of our headquarter in Mainz, Germany. Purchase of intangible assets amounted to €34.1 million, which was mainly attributable to certain patents and licenses, and investments in financial assets of €47.8 million mainly related to investments in equity instruments. Those equity instruments are disclosed in Note 12.2 to our Audited Consolidated Financial Statements 2022.

9.6.1.3 Net Cash Flows used in Financing Activities

Our net cash flows used in financing activities during the three months ended June 30, 2025 were €13.3 million and mainly related to our lease payments of €9.6 million. In comparison, net cash flows used in financing activities during the three months ended June 30, 2024 were €22.9 million and mainly related to our lease payments.

Our net cash flows used in financing activities during the six months ended June 30, 2025 were €27.1 million and mainly related to our lease payments of €18.9 million. In comparison, net cash flows used in financing activities during the six months ended June 30, 2024 were €30.7 million and mainly related to our lease payments.

Our net cash flows used in financing activities during the year ended December 31, 2024, were €45.9 million, comprising €43.6 million used for lease payments.

Our net cash flows used in financing activities during the year ended December 31, 2023, were €778.6 million, comprising €738.5 million used for the share repurchase programs of ADS.

Our net cash flows used in financing activities during the year ended December 31, 2022, were €1,419.3 million, comprising the €986.4 million used for the first tranche of our $1.5 billion share repurchase program of ADS as well as the €484.3 million special cash dividend paid in June 2022. Whereas €110.5 million cash generated was attributable to the Pfizer equity investment as part of our HZV collaboration.

9.6.2 Current and Future Capital Expenditures

Given our strong financial, scientific and operational accomplishments, we believe we have the resources to diligently allocate our current capital to drive a multi-platform strategy and deliver a fully integrated global biotechnology company. We focus our R&D, on rapidly advancing our diversified clinical oncology pipeline with synergistic potential, developing next generation COVID-19 vaccines to maintain leadership and pandemic preparedness, as well as broadening the label of and access to the existing vaccine. We also plan to invest heavily to build out our global development organization, bringing in talent with clinical and regulatory expertise needed to accelerate our pipeline development. We are also diversifying our therapeutic area footprint, which will enable us to fully leverage the potential of all technology platforms across autoimmune diseases, inflammatory diseases, cardiovascular disease, neurodegenerative diseases, and regenerative medicines. In addition, we plan to enhance capabilities through complementary acquisitions, technologies, infrastructure and manufacturing. To support our future trajectory, growing the organization and expanding our team is of utmost importance. We are on the way to develop our global footprint in key regions including Europe, the United States, Asia and Africa. Additionally, investing in manufacturing capabilities for key technologies and developing our pandemic response capabilities remain priorities for us. As a science and innovation driven company, we will continue to focus investments on R&D and scaling the business for commercial readiness in oncology in multiple countries.

As of June 30, 2025, most of the committed cash outflow within one year is related to lease payments amounting to €47.8 million and commitments under purchase agreements and contractual obligations amounting to €178.2 million. Further, we have lease payment obligations with an amount of €212.6 million and commitments under purchase agreements and contractual obligations of €871.2 million for the years 2026 and beyond.

As of the date of the Prospectus, the Group's material ongoing and planned capital expenditures mentioned above include:

- contractual obligation to acquire intangible assets in Germany for milestones for in-license agreements for our pipeline candidates with external partners;
- contractual commitments under purchase agreements for *BioNTainer* in Rwanda and Australia as well as; and
- contractual commitments under purchase agreements for facilities in Germany, mainly Mainz and Berlin.

We plan to fund our ongoing and planned capital expenditures described above through available cash and operating and investing cash flows.

In May 2025, our subsidiary BioNTech UK Limited signed a grant agreement with the U.K. Government to broaden our R&D activities for innovative medicines in the U.K. As part of the agreement, we are committed to investing up to £1 billion over the next ten years. Our efforts will be supported by a grant of up to £129 million payable over a period of ten years by the U.K. Government, which we believe to mark one of the largest grants of its kind in U.K. history for a pharmaceutical company. We plan to use the grant to support our establishment of two new R&D centers in the U.K. In addition, we plan to establish our U.K. headquarters in London, U.K., which shall also accommodate our AI hub.

In addition, the Group pursues the acquisition of CureVac N.V., which is headquartered in Germany, by means of the Offer.

9.6.3 Operating and Funding Requirements

As part of our capital allocation strategy, we expect to continue to incur significant and increasing operating expenses for the foreseeable future. We anticipate that our expenses will increase substantially if and as we and our collaborators:

- continue or expand our research or development of our programs in preclinical development;
- continue or expand the scope of our clinical trials for our product candidates;
- initiate additional preclinical, clinical, or other trials for our product candidates, including under our collaboration agreements;
- continue to invest in our immunotherapy platforms to conduct research to identify novel technologies;
- change or increase our manufacturing capacity or capability;
- change or add additional suppliers;
- add additional infrastructure to our quality control, quality assurance, legal, compliance and other groups to support our operations as a public company and our product development and commercialization efforts, including new and expanded sites globally;
- attract and retain skilled personnel;
- seek marketing approvals and reimbursement for our product candidates;
- develop our sales, marketing, and distribution infrastructure for our COVID-19 vaccine;
- enhance our commercial infrastructure for other product candidates for which we are seeking to obtain marketing approval;
- seek to identify and validate additional product candidates;

- acquire or in-license other product candidates and technologies;
- acquire other companies;
- make milestone or other payments under any in-license agreements;
- maintain, protect, defend, enforce and expand our intellectual property portfolio; and
- experience any delays or encounter issues with any of the above.

We are a party to license and research and development agreements with universities and other third parties, as well as patent assignment agreements, under which we have obtained rights to patents, patent applications and know-how. We enter into contracts in the normal course of business with CROs for clinical trials and clinical and commercial supply manufacturing, and with vendors for preclinical research studies and for other services and products for operating purposes. We work together with CMOs who manufacture our product candidates and products, and enter into lease agreements to lease laboratory, GMP manufacturing, storage and office spaces. Purchase obligations under our agreements, to the extent that they are quantifiable and not cancellable, have been considered when defining our guidance for future cash commitments.

Our future funding requirements, both near and long term, will depend on many factors, including, but not limited to:

- the initiation, progress, timing, costs, and results of preclinical or nonclinical studies and clinical trials for our product candidates;
- the amount and timing of revenues and associated costs from sales of our COVID-19 vaccine;
- the results of research and our other platform activities;
- the clinical development plans we establish for our product candidates;
- the terms of any agreements with our current or future collaborators, and the achievement of any milestone payments under such agreements to be paid to us or our collaborators;
- the number and characteristics of product candidates that we develop or may in-license;
- the outcome, timing and cost of meeting regulatory requirements established by the FDA, the EMA and other comparable regulatory authorities;
- the cost of filing, prosecuting, obtaining, maintaining, protecting, defending and enforcing our patent claims and other intellectual property rights, including actions for patent and other intellectual property infringement, misappropriation and other violations brought by third parties against us regarding our product candidates or actions by us challenging the patent or intellectual property rights of others;
- the effect of competing technological and market developments, including other products that may compete with one or more of our product candidates;
- the cost and timing of completion and further expansion of clinical and commercial scale manufacturing activities sufficient to support all of our current and future programs;
- the cost of establishing sales, marketing, and distribution capabilities for any product candidates for which we may receive marketing approval and reimbursement in regions where we choose to commercialize our products on our own; and
- the terms of any ADS repurchases we make.

9.7 Financial Position

9.7.1 Consolidated Statements of Financial Position

The following table presents an overview of our consolidated statements of financial position as of the reporting dates indicated:

(in millions €)	As of June 30, 2025 (unaudited)	As of December 31, 2024 (audited)	2023 (audited)	2022 (audited)
Assets				
Non-current assets				
Goodwill	364.1	380.6	362.5	61.2[1]
Other intangible assets	1,487.0	790.4	804.1	158.5[1]
Property, plant and equipment	1,017.8	935.3	757.2	609.2
Right-of-use assets	224.3	248.1	214.4	211.9
Contract assets	5.9	9.8	—	—
Other financial assets	2,504.8	1,254.0	1,176.1	80.2
Other non-financial assets	26.8	26.3	83.4	6.5
Deferred tax assets	77.8	81.7	81.3	229.6
Total non-current assets	**5,708.5**	**3,726.2**	**3,479.0**	**1,357.1**
Current assets				
Inventories	230.7	283.3	357.7	439.6
Trade and other receivables	1,368.3	1,463.9	2,155.7	7,145.6
Contract assets	8.7	10.0	4.9	—
Other financial assets	3,767.2	7,021.7	4,885.3	189.4
Other non-financial assets	215.0	212.7	280.9	271.9
Income tax assets	69.7	50.0	179.1	0.4
Cash and cash equivalents	10,269.5	9,761.9	11,663.7	13,875.1
Total current assets	**15,929.1**	**18,803.5**	**19,527.3**	**21,922.0**
Total assets	**21,637.6**	**22,529.7**	**23,006.3**	**23,279.1**
Equity				
Share capital	248.6	248.6	248.6	248.6
Capital reserve	1,447.9	1,398.6	1,229.4	1,828.2
Treasury shares	(8.2)	(8.6)	(10.8)	(5.3)
Retained earnings	18,295.6	19,098.0	19,763.3	18,833.0
Other reserves	(1,478.8)	(1,325.5)	(984.6)	(848.9)
Total equity	**18,505.1**	**19,411.1**	**20,245.9**	**20,055.6**
Non-current liabilities				
Lease liabilities, loans and borrowings	217.2	214.7	191.0	176.2
Other financial liabilities	145.0	46.9	38.8	6.1
Income tax liabilities	—	—	—	10.4
Provisions	22.9	20.9	8.8	8.6
Contract liabilities	787.7	183.0	398.5	48.4
Other non-financial liabilities	80.4	87.5	13.1	17.0
Deferred tax liabilities	28.5	42.4	39.7	6.2
Total non-current liabilities	**1,281.7**	**595.4**	**689.9**	**272.9**
Current liabilities				
Lease liabilities, loans and borrowings	52.4	39.5	28.1	36.0
Trade payables and other payables	504.2	426.7	354.0	204.1[2]
Other financial liabilities	40.9	1,443.4	415.2	785.1
Refund liabilities	—	—	—	24.4
Income tax liabilities	3.7	4.5	525.5	595.9

(in millions €)	As of June 30, 2025 (unaudited)	As of December 31, 2024 (audited)	2023 (audited)	2022 (audited)
Provisions	145.6	144.8	269.3	367.2
Contract liabilities	945.4	294.9	353.3	77.1
Other non-financial liabilities	158.6	169.4	125.1	860.8
Total current liabilities	**1,850.8**	**2,523.2**	**2,070.5**	**2,950.6**
Total liabilities	**3,132.5**	**3,118.6**	**2,760.4**	**3,223.5**
Total equity and liabilities	**21,637.6**	**22,529.7**	**23,006.3**	**23,279.1**

(1) The line items 'Goodwill' and 'Other intangible assets' were combined and disclosed as line item 'Intangible assets' in our Audited Consolidated Financial Statements 2022.

(2) Presented as 'Trade payables' in our Audited Consolidated Financial Statements 2022.

9.7.1.1 Comparison as of June 30, 2025 and December 31, 2024

9.7.1.1.1 Assets

As of June 30, 2025, our total assets amounted to €21,637.6 million, compared to €22,529.7 million as of December 31, 2024. The decrease was mainly due to the developments explained below.

Our non-current assets increased by €1,982.3 million from €3,726.2 million as of December 31, 2024 to €5,708.5 million as of June 30, 2025, mainly as a result of an increase in non-current other financial assets by €1,250.8 million, primarily as a result of a reallocation of existing capital into longer-term investments, and an increase in other intangible assets by €696.6 million, mainly as a result of the acquisition of Biotheus.

Our current assets decreased by €2,874.4 million from €18,803.5 million as of December 31, 2024 to €15,929.1 million as of June 30, 2025, mainly due to a decrease of €3,254.5 million in current other financial assets, mainly resulting from a reallocation of existing capital and the usage of financial funds for the acquisition of Biotheus and the settlement of the contractual disputes outlined in section "*9.7.2.1 Financial Liabilities*" below. In addition, trade and other receivables decreased by €95.6 million from €1,463.9 million as of December 31, 2024 to €1,368.3 million as of June 30, 2025, in line with the revenue decline of our COVID-19 vaccine business which was partially offset by trade and other receivables in the amount of €1,279.9 million from the global strategic partnership with BMS (see "*11.6.1 Bristol Myers Squibb*"). Cash and cash equivalents increased by €507.6 million from €9,761.9 million as of December 31, 2024 to €10,269.5 million as of June 30, 2025, mainly as a result of the aforementioned reallocation of capital and investments in Biotheus.

9.7.1.1.2 Liabilities

As of June 30, 2025, our total liabilities amounted to €3,132.5 million, compared to €3,118.6 million as of December 31, 2024. Total liabilities did neither decrease nor increase significantly due to offsetting effects of the increase in non-current and current contract liabilities and the decrease in current other financial liabilities.

Our non-current liabilities increased by €686.3 million from €595.4 million as of December 31, 2024 to €1,281.7 million as of June 30, 2025, mainly as a result of an increase of non-current contract liabilities by €604.7 million relating to the recognition of the upfront payment of the partnership with BMS. An additional driver was an increase of non-current other financial liabilities by €98.1 million from €46.9 million as of December 31, 2024 to €145.0 million as of June 30, 2025. The increase was mainly related to the recognition of contingent consideration (milestone) payment liabilities in connection with the acquisition of Biotheus.

Our current liabilities decreased by €672.4 million from €2,523.2 million as of December 31, 2024 to €1,850.8 million as of June 30, 2025, mainly as a result of a decrease in current other financial liabilities by €1,402.5 from €1,443.4 million as of December 31, 2024 to €40.9 million as of June 30, 2025, mainly related to the settlement of contractual disputes outlined in section "*9.7.2.1 Financial Liabilities*".

9.7.1.1.3 Equity

Our total equity decreased by €906.0 million from €19,411.1 million as of December 31, 2024 to €18,505.1 million as of June 30, 2025. The decrease was mainly due to the net loss recorded during the six months ended June 30, 2025 within retained earnings.

9.7.1.2 Comparison as of December 31, 2024 and December 31, 2023

9.7.1.2.1 Assets

As of December 31, 2024, our total assets amounted to €22,529.7 million, compared to €23,006.3 as of December 31, 2023. The decrease was mainly due to lower receivables from Pfizer as a result of reduced COVID-19 vaccine sales and the developments explained below.

Our non-current assets increased by €247.2 million from €3,479.0 million as of December 31, 2023 to €3,726.2 million as of December 31, 2024. The increase resulted primarily from investments in property, plant, and equipment, mainly related to investments in building our laboratory and office facilities in Mainz, Germany as well as the sites in Singapore and Kigali, Rwanda.

Our current assets decreased by €723.8 million from €19,527.3 million as of December 31, 2023 to €18,803.5 million as of December 31, 2024, mainly due to the fact that receivables from our COVID-19 collaboration with Pfizer and receivables from our customers that we supply directly in our territory declined as a result of lower demand at the end of the year ended December 31, 2024 and to the fact that we invested more funds.

9.7.1.2.2 Liabilities

As of December 31, 2024, our total liabilities were €3,118.6 million, compared to €2,760.4 million as of December 31, 2023. The increase primarily resulted from obligations arising from the settlement of contractual disputes and the developments explained below.

Our non-current liabilities decreased by €94.5 million from €689.9 million as of December 31, 2023 to €595.4 million as of December 31, 2024, mainly as a result of a decrease in non-current contract liabilities by €215.5 million from €398.5 million as of December 31, 2023 to €183.0 million as of December 31, 2024. The decrease was partially offset by an increase in non-current other non-financial liabilities by €74.4 million from €13.1 million as of December 31, 2023 to €87.5 million as of December 31, 2024, mainly related to funds received based on government grants and similar grants for which income will be recognized in profit or loss within other operating income over the respective useful life of the underlying grant assets.

Our current liabilities increased by €452.7 million from €2,070.5 million as of December 31, 2023 to €2,523.2 million as of December 31, 2024, mainly as a result of an increase in current other financial liabilities by €1,028.2 million from €415.2 million as of December 31, 2023 to €1,443.4 million as of December 31, 2024, primarily relating to the settlement of the contractual disputes with the NIH, under which we were obligated to pay $791.5 million (as of December 31, 2024, amounts to €761.9 million) as described above and the settlement with UPenn as further described under section "*9.7.2.1 Financial Liabilities*" below. This increase in current other financial liabilities was partially offset by a decrease in income tax liabilities by €521.0 million from €525.5 million as of December 31, 2023 to €4.5 million as of December 31, 2024, due to the decreased income taxes expense.

9.7.1.2.3 Equity

Our total equity decreased by €834.8 million from €20,245.9 million as of December 31, 2023 to €19,411.1 million as of December 31, 2024. The decrease was mainly due to the net loss recorded during the year ended December 31, 2024 within retained earnings.

9.7.1.3 Comparison as of December 31, 2023 and December 31, 2022

9.7.1.3.1 Assets

As of December 31, 2023, our total assets amounted to €23,006.3 million, compared to €23,279.1 million as of December 31, 2022. The decrease was mainly due to lower receivables from Pfizer as a result of reduced COVID-19 vaccine sales and the developments explained below.

Our non-current assets increased by €2,121.9 million from €1,357.1 million as of December 31, 2022 to €3,479.0 million as of December 31, 2023, primarily due to investments in non-current securities and intangible assets, as described in sections "*9.6.1.1 Net Cash Flows from / (used in) Operating Activities*" and "*9.6.1.2 Net Cash Flows from / (used in) Investing Activities*" above.

Our current assets decreased by €2,394.7 million from €21,922.0 million as of December 31, 2022 to €19,527.3 million as of December 31, 2023 was mainly attributable to the following offsetting effects: Trade and other receivables decreased by €4,989.9 million from €7,145.6 million as of December 31, 2022 to €2,155.7 million as of December 31, 2023, mainly due to the fact that receivables from our COVID-19 collaboration with Pfizer and receivables from our customers that we supply directly in our territory declined as a result of lower demand at the end of the year ended December 31, 2023. Mainly as a result of security investments, our other financial assets increased by €4,695.9 million from €189.4 million as of December 31, 2022 to €4,885.3 million as of December 31, 2023. Our cash and cash equivalents decreased by €2,211.4 million from €13,875.1 million as of December 31, 2022 to €11,663.7 million as of December 31, 2023, mainly as a result of these effects.

9.7.1.3.2 Liabilities

As of December 31, 2023, our total liabilities were €2,760.4 million, compared to €3,223.5 million as of December 31, 2022. The decrease was mainly attributable to the remittance of wage taxes and social security expenses in connection with the settlement of the Employee Stock Ownership Plans (ESOP 2018 and LTI-plus) and the developments explained below.

Our non-current liabilities increased by €417.0 million from €272.9 million as of December 31, 2022 to €689.9 million as of December 2023. The increase was mainly attributable to an increase in non-current contract liabilities by €350.1 million from €48.4 million as of December 31, 2022 to €398.5 million as of December 31, 2023, mainly as a result of the receipt of advance payments in connection with the amendment of the COVID-19 vaccine purchase agreement with the EU Commission were received.

Our current liabilities decreased by €880.1 million from €2,950.6 million as of December 31, 2022 to €2,070.5 million. The decrease was mainly attributable to a decrease in current other non-financial liabilities by €735.7 million from €860.8 million as of December 31, 2022 to €125.1 million as of December 31, 2023, mainly as a result of the remittance of wage taxes and social securities expenses in connection with the settlement of the Employee Stock Ownership Plans (ESOP 2018 and LTI-plus). In addition, current other financial liabilities decreased by €369.9 million from €785.1 million as of December 31, 2022 to €415.2 million mainly due to lower licensor obligations due to lower sales at year end 2023 compared to year end 2022. These decreases were partially offset by an increase of current contract liabilities by €276.2 million from €77.1 million as of December 31, 2022 to €353.1 million as of December 31, 2023, mainly relating to an advance payments in connection with the amendment of the COVID-19 vaccine purchase agreement with the EU Commission.

9.7.1.3.3 Equity

Our total equity increased by €190.3 million from €20,055.6 million as of December 31, 2022 to €20,245.9 million as of December 31, 2023, mainly resulting from the net profit during the year ended December 31, 2023 recorded within retained earnings, partially offset by effects from our share repurchase program of €738.5 million.

9.7.2 Financial Liabilities and Provisions

9.7.2.1 Financial Liabilities

The following table presents an overview of our non-current and current financial liabilities as of the reporting dates indicated:

	June 30,	December 31,		
	2025	2024	2023	2022
(in millions €)	(unaudited)	(audited, unless otherwise indicated)		
Loans and borrowings	39.5	—	2.3	2.1
Trade payables and other payables	504.2	426.7	354.0	204.1
Other financial liabilities (unaudited)	185.9	1,490.3	454.0	791.2
Lease liabilities	230.1	254.2	216.7	210.1

During the six months ended June 30, 2025, our other financial liabilities decreased by €1,304.4 million, essentially related to the settlement of contractual disputes with the NIH and UPenn recognized in an amount of €1,146.9 million as of December 31, 2024. On December 20, 2024, we had entered into a settlement agreement with the NIH. Under the terms of the settlement agreement, we will, among other things, pay $791.5 million (as of December 31, 2024, amounted to €761.9 million) to the NIH. Furthermore, other financial liabilities as of December 31, 2024 included liabilities recognized in relation to the settlement with UPenn, of which a payment of $400.0 million as royalties for calendar years 2020-2023 was made in June 2025, see "*11.12.1.2 Settlement Agreement with UPenn*".

The following table summarized the maturity profile of our financial liabilities based on contractual undiscounted payments as of December 31, 2024:

	December 31, 2024			
(in millions €)	Less than 1 year	1 to 5 years	More than 5 years	Total
	(audited)			
Trade and other payables	426.7	—	—	426.7
Lease liabilities	48.1	152.7	90.3	291.1
Contingent consideration	—	62.5	0.1	62.6
Foreign exchange forward contracts	16.3	—	—	16.3
Other financial liabilities	1,426.2	—	—	1,426.2
Total	**1,917.3**	**215.2**	**90.4**	**2,222.9**

For information on our financial liabilities as of December 31, 2024, December 31, 2023 and December 31, 2022, see Note 12 to each of our Audited Consolidated Financial Statements.

9.7.2.2 Provisions

The following table presents an overview of our provisions as of the reporting dates indicated:

	June 30,	December 31,		
(in millions €)	2025	2024	2023	2022
	(unaudited)	(audited)		
Contractual disputes / settlements	54.7	85.7	118.2	88.9[1]
Obligations from onerous CMO contracts	50.7	50.7	80.2	235.5
Other	63.1	29.3	79.7	51.4[1]
Total	**168.5**	**165.7**	**278.1**	**375.8**
Total current	145.6	144.8	269.3	367.2
Total non-current	22.9	20.9	8.8	8.6

(1) The line item 'Contractual disputes / settlements' was disclosed as part of the line item 'Other' in our Audited Consolidated Financial Statements 2022.

As of June 30, 2025, our current provisions included €54.7 million in contractual disputes mainly related to collaborators regarding, among other things, the interpretation of each party's obligations or the amounts payable under the respective agreements. The decrease in obligations identified as contractual disputes compared to December 31, 2024 was mainly due to entering settlement agreements and a reclassification to financial liabilities. In addition, as of June 30, 2025, our current provisions included €50.7 million (€50.7 million as of December 31, 2024) of obligations for production capacities derived from contracts with contract manufacturing organizations, or CMOs, that became redundant.

Furthermore, as of June 30, 2025, our current provisions included €63.1 million in other obligations mainly comprising employee related obligations such as restructuring due to pipeline prioritization, social security costs related to share-based payment programs as well as inventor remunerations (€29.3 million as of December 31, 2024, mainly comprising employee related obligations).

For information on our provisions as of December 31, 2024, December 31, 2023 and December 31, 2022, see Note 17 to each of our Audited Consolidated Financial Statements.

9.8 Contingent Liabilities and Other Financial Commitments

9.8.1 Contingent Liabilities

Our contingent liabilities include, but are not limited to, intellectual property disputes and contractual disputes regarding, among other things, the interpretation of each party's obligations or the amounts payable under the respective agreements, product-related disputes and actions by or on behalf of our shareholders.

From time to time, in the normal course and conduct of our business, we may be involved in proceedings with third parties about considering, for example, the use and/or remuneration for use of such third party's intellectual property. As of June 30, 2025, none of the intellectual property-related considerations outlined in section "*11.12.2 Pending Proceedings*", of which we have either been notified, or for which potential claims could be brought against us or our subsidiaries in the future, fulfilled the criteria for recording a provision.

We are subject to an increasing number of product-related disputes. Our product liability claims often involve highly complex issues related to medical causation, correctness and completeness of product information (Summary of Product Characteristics/package leaflet) as well as label warnings and reliance thereon, scientific evidence and findings, actual and provable defectiveness and injury, and other matters. These complexities vary from matter to matter. As of June 30, 2025, none of these claims fulfilled the criteria for recording a provision.

We are currently subject to certain claims by or on behalf of our shareholders, particularly the proceeding described in section "*11.12.2.7 Ladewig Proceedings*". As of June 30, 2025, these claims did not fulfill the criteria for recording a provision.

Substantially all of our contingent liabilities are subject to significant uncertainties and, therefore, determining the likelihood of a loss and/or the measurement of any loss can be complex. Consequently, we are unable to estimate the range of reasonably possible loss. Our assessments, which result from a complex series of judgments about future events and uncertainties, are based on estimates and assumptions that have been deemed reasonable by management, but that may prove to be incomplete or inaccurate, and unanticipated events and circumstances may occur that might cause us to change those estimates and assumptions. We currently do not believe that any of these matters will have a material adverse effect on our financial position, and will continue to monitor the status of these and other claims that may arise. However, we could incur judgments, enter into settlements or revise our expectations regarding the outcome of matters, which could have a material adverse effect on our results of operations and/or our cash flows in the period in which the amounts are accrued or paid. We will continue to evaluate whether, if circumstances were to change in the future, the recording of a provision may be needed and whether potential indemnification entitlements exist against any such claim.

9.8.2 Other Financial Commitments

Our other financial commitments as of the reporting dates indicated were as follows:

	June 30,	December 31,		
	2025	2024	2023	2022
(in millions €)	(unaudited)	(audited)		
Commitments under purchase agreements for property, plant and equipment	154.0	186.7	154.4	105.2
Contractual obligation to acquire intangible assets	895.4	1,193.1	1,721.1	—
Total	**1,049.4**	**1,379.8**	**1,875.5**	**105.2**

Contractual obligations to acquire intangible assets exist in connection with in-licensing and research and development collaborations. We have entered into obligations to make milestone payments once specific targets have been reached. Provided that all of the milestone events are achieved, we would be obligated to pay up to €895.4 million as of June 30, 2025, (€1,193.1 million as of December 31, 2024, and €1,721.1 million as of December 31, 2023) in connection with the acquisition of intangible assets. The amounts shown represent the maximum payments to be made, and it is unlikely that they will all fall due.

We have excluded any milestone payments subject to in-licensing agreements with Biotheus as such payments are treated as intra-group transactions following the acquisition of Biotheus, which closed in January 2025. Commitments from the acquisition of Biotheus relate to additional performance-based contingent payments of up to $150.0 million, if certain milestones are met. The amounts and the dates of the actual payments may both vary considerably from those stated in the table, since the achievement of the conditions for payment is possible but uncertain. Other financial obligations from possible future sales-based milestone and license payments were not included in the table above.

The expected maturities of payment obligations under purchase agreements for property, plant and equipment and contractual obligations to acquire intangible assets as of June 30, 2025 and as of December 31, 2024 were as follows:

	June 30, 2025			
(in millions €)	Less than 1 year	1 to 5 years	More than 5 years	Total
	(unaudited)			
Commitments under purchase agreements for property, plant and equipment	109.1	44.9	—	**154.0**
Contractual obligation to acquire intangible assets	69.1	420.2	406.1	**895.4**
Total	**178.2**	**465.1**	**406.1**	**1,049.4**

	December 31, 2024			
(in millions €)	Less than 1 year	1 to 5 years	More than 5 years	Total
	(audited)			
Commitments under purchase agreements for property, plant and equipment	109.0	77.7	—	186.7
Contractual obligation to acquire intangible assets	118.9	677.6	396.6	1,193.1
Total	**227.9**	**755.3**	**396.6**	**1,379.8**

Other financial obligations were recognized at nominal value.

For additional information on certain commitments as of the date of the Prospectus, see section "*9.6.2 Current and Future Capital Expenditures*".

9.9 Quantitative and Qualitative Disclosures About Market Risk

We are exposed to various risks in relation to financial instruments, including counterparty risk and currency risk. Our risk management is coordinated by the Management Board. We do not engage in the trading of financial assets for speculative purposes. The most significant financial risks to which we are exposed include the risks discussed below.

Counterparty Risk. In order to mitigate default risks within our asset management portfolio, we diversify our cash investments among various counterparties and instruments that have an investment grade rating. Transactions are carried out within the limits approved by the treasury committee.

Foreign Currency Risk. We publish our consolidated financial statements in Euro. Revenues and expenses incurred in U.S. dollars will be translated into Euro when they are reported in our consolidated financial statements. We are subject to currency risks, as our income and expenses are denominated in Euro and the U.S. dollar. As such, we are exposed to exchange rate fluctuations between these currencies. Cash inflows denominated in U.S. dollar mainly result from generating proceeds under our collaboration agreements. Our commercial revenues are primarily collaboration revenues from earnings based on our partners' gross profit, which is shared under the respective collaboration agreements and represents payments we receive in U.S. dollar. Cash outflows dominated in U.S. dollar mainly result from amounts spent on research and development activities and license obligations as well as expanding our global footprint further. With the aim of preserving capital, surplus liquidity is mainly invested in domestic currency investments as exchange rate fluctuations can reduce the value of our financial positions. We limit the effects of the identified risks by means of a coordinated and consistently implemented risk strategy. Besides applying natural hedging relationships where possible, foreign exchange forward contracts are concluded, as a matter of principle, as instruments to mitigate foreign currency exchange risk associated with foreign currency-denominated payments.

For further disclosures relating to foreign exchange forward contracts, see Note 12 to our Audited Consolidated Financial Statements 2024.

Notwithstanding our efforts to mitigate some foreign currency exchange risks, there can be no assurance that our hedging activities will adequately protect us against the risks associated with foreign currency fluctuations. We believe the counterparties to our foreign currency forward contracts are creditworthy multinational commercial banks. While we believe the risk of counterparty nonperformance is not material, a sustained decline in the financial stability of financial institutions as a result of disruption in the financial markets could affect our ability to secure creditworthy counterparties for our foreign currency hedging programs. Therefore, developments on the financial markets are continuously monitored to enable us to respond to exceptional events at short notice.

As a result, any substantial future appreciation or decline of the U.S. dollar against the Euro could have a material effect on our revenues and profitability. As an example, if the U.S. dollar weakens by 5% against the Euro, financial assets and liabilities denominated in U.S. dollar as of December 31, 2024 would have an effect of €12.9 million on our profit before tax.

For additional information about our quantitative and qualitative market risks, see Note 12 to our Audited Consolidated Financial Statements 2024.

9.10 Significant Accounting Judgments, Estimates and Assumption

For information on significant accounting judgments, estimates and assumptions applied during the periods presented, see Note 2 to the Q2 Unaudited Interim Condensed Consolidated Financial Statements and Note 3 to each of our Audited Consolidated Financial Statements.

9.11 Information from the Audited Annual Financial Statements

The annual financial statements of the Company were prepared in accordance with German generally accepted accounting principles of the German Commercial Code (*Handelsgesetzbuch*).

During the year ended December 31, 2024, the Company recorded a gross profit of €2,006.2 million, compared to €3,020.1 million for the year ended December 31, 2023. This decrease was mainly due to lower commercial revenues, reflecting reduced global demand for the Company's COVID-19 vaccine. Research and development expenses of the Company increased from €1,743.6 million during the year ended December 31, 2023, to €2,396.8 million during the year ended December 31, 2024, mainly due to progressing clinical studies for pipeline candidates as well as the newly acquired product candidates and the development of variant-adapted COVID-19 vaccines. During the year ended December 31, 2024, the Company recorded other operating expenses of €1,416.9 million, compared to €315.6 million

during the year ended December 31, 2023, with the year-to-year increase being mainly related to expenses from settlements of contractual disputes with the NIH and UPenn. Other operating income of the Company increased from €299.5 million during the year ended December 31, 2023, to €796.4 million during the year ended December 31, 2024, primarily due to income from reimbursement claims against Pfizer in connection with the aforementioned settlements of contractual disputes as well as from foreign currency differences. Overall, the Company recorded a net loss of €1,128.5 million for the year ended December 31, 2024, compared to a net profit of €799.5 million for the year ended December 31, 2023.

Total assets of the Company amounted to €22,581.8 million as of December 31, 2024 (December 31, 2023: €22,457.4 million). Compared to December 31, 2023, fixed assets increased from €3,352.1 million to €4,442.1 million as of December 31, 2024, mainly due to an increase in financial assets that was attributable to investments in securities. As of December 31, 2024, fixed assets comprised intangible assets of €543.6 million (December 31, 2023: €674.6 million), property, plant and equipment of €169.8 million (December 31, 2023: €136.5 million) and financial assets of €3,728.7 million (December 31, 2023: €2,541.0 million). Compared to December 31, 2023, current assets decreased from €18,887.2 million as of December 31, 2023, to €17,973.8 million as of December 31, 2024. This decrease was mainly due to a reduction in cash on hand and at banks as a consequence of continued investments in securities, which are reported as securities classified as fixed assets and other securities. As of December 31, 2024, current assets comprised receivables and other assets of €3,529.2 million (December 31, 2023: €2,813.9 million), other securities of €5,104.6 (December 31, 2023: €4,662.6 million) and cash on hand and at banks of €9,338.9 million (December 31, 2023: €11,409.5 million).

As of December 31, 2024, equity of the Company amounted to €19,096.3 million, compared to €20,139.5 million as of December 31, 2023. This decrease was primarily due to the net loss generated in the year ended December 31, 2024. Provisions of the Company decreased from €1,096.8 million as of December 31, 2023, to €432.7 million as of December 31, 2024, mainly due to utilized tax provisions of €516.9 million with the 2021 and 2022 assessments for corporate tax, solidarity surcharge, and trade tax as well as a decrease in provisions for outstanding invoices of €138.9 million. Liabilities of the Company amounted to €833.4 million as of December 31, 2023, and increased to €2,792.8 million as of December 31, 2024. This increase was mainly due to the settlement of contractual disputes in the amount of €1,148.0 million. As of December 31, 2024, deferred income amounted to €260.0 million (December 31, 2023: €387.7 million) and mainly includes the compensation payments in connection with the amended COVID-19 vaccine purchase agreement with the EU Commission and deferred upfront fees from collaborations.

For further information on the Audited Annual Financial Statements of the Company, see section "*19 Financial Information of BioNTech*".

10 PROFIT FORECAST

10.1 Profit Forecast Prepared by BioNTech SE for the Year Ending December 31, 2025

The profit forecast with respect to net profit / (loss) of the Company and its consolidated subsidiaries, or the "**Group**", for the year ending December 31, 2025, or "**financial year 2025**" or "**year 2025**", prepared by BioNTech SE, a European company (*Societas Europaea, SE*) with its registered seat in Mainz, Federal Republic of Germany, or the "**Company**", and together with its consolidated subsidiaries, "**BioNTech**", the "**BioNTech Group**", the "**Group**", "**we**", "**us**" and "**our**", together with the explanatory notes (hereinafter collectively referred to as "**Profit Forecast 2025**"), is not a representation of facts and should therefore not be interpreted as such by prospective investors. Rather, it reflects the Company's forward-looking expectations with respect to the Profit Forecast 2025.

The Profit Forecast 2025 is based on the factors and assumptions made by the Company's management board (*Vorstand*), or the "**Management Board**", with respect to the development of factors influencing net profit / (loss) of the Group for the year 2025 as set out below. These factors and assumptions relate to factors that (i) the Company cannot influence or (ii) that can be influenced by the Company at least to a certain degree. Even if the Company considers these factors and assumptions to be reasonable on the date on which the Profit Forecast 2025 is prepared, they may retrospectively prove to be unjustified, incomplete or incorrect in the future. If one or more of these factors and assumptions prove to be unjustified, incomplete or incorrect, the actual net profit / (loss) for the year 2025 may deviate materially from the Profit Forecast 2025. Accordingly, prospective investors should treat this information with caution and should not place undue reliance on the Profit Forecast 2025.

The Profit Forecast 2025 contains forward-looking statements, which are necessarily based on a number of assumptions and estimates about future events and actions, including the Management Board's assessment of opportunities and risks. Such assumptions and estimates are inherently subject to significant business, operational, economic, and competitive uncertainties, and contingencies, many of which are beyond our control, and upon assumptions with respect to future business decisions that are subject to change. The occurrence or non-occurrence of these assumptions, estimates, contingencies, uncertainties, and other factors beyond those presented below could cause our actual results, including the financial condition and profitability, to differ materially from or fail to meet the expectations expressed or implied in the forward-looking statements. It is also possible that the future events mentioned in the Profit Forecast 2025 might not occur. The Group's business is subject to a number of substantial risks and uncertainties that could result in a forward-looking statement later proving to be incorrect.

10.2 Profit Forecast 2025 of Net Profit / (Loss)

In its press release dated August 4, 2025 on the publication of its financial results for the three and six months ended June 30, 2025, the Company stated that: "The Company does not expect to report a positive net income figure for the 2025 financial year".

Based on the current development of the year 2025 as of the date of the Prospectus, the Company confirms that it does not expect to report a positive net income figure for the year 2025.

10.3 Explanatory Notes to the Profit Forecast 2025

The Profit Forecast 2025 relates to net profit / (loss) as presented in the Company's consolidated statements of profit or loss.

10.3.1 Basis of Preparation

The Profit Forecast 2025 has been compiled based on the factors and assumptions stated below and prepared on a basis which is both (i) comparable with the historical financial information of the Group, and (ii) consistent with the Group's accounting policies. The Group's significant accounting policies are disclosed in (a) the audited consolidated financial statements of the Company as of and for the year ended December 31, 2024 prepared in accordance with IFRS Accounting Standards as issued by the

International Accounting Standards Board (IASB) and adopted by the EU and the additional requirements of German commercial law pursuant to Section 315e para. 3 in conjunction with para. 1 German Commercial Code (*Handelsgesetzbuch*) and (b) the unaudited interim condensed consolidated financial statements of the Company as of and for the three and six months ended June 30, 2025, prepared in accordance with IFRS Accounting Standards as issued by the International Accounting Standards Board (IASB) applicable to interim financial reporting (IAS 34).

In preparing the Profit Forecast 2025, the Company has considered the relevant factors relating to the operational and financial performance of the Group. The development of these factors is based on specific assumptions made by the Management Board, which are set forth below. The Company based these assumptions and estimates on parameters available when the Profit Forecast 2025 has been prepared. Existing circumstances and assumptions about future developments, however, may change due to factors including but not limited to, market changes or circumstances that are beyond the Company's control. Such changes are reflected in the assumptions when they occur.

10.3.2 Factors and Assumptions

10.3.2.1 Factors Beyond the Company's Control and Related Assumptions

The Profit Forecast 2025 is subject to factors beyond our control. The main factors especially addressing our COVID-19 vaccine revenues and the assumptions regarding their development and impact are described below:

10.3.2.1.1 Demand for our COVID-19 Vaccine

Currently, our sole marketed product is *Corminaty*. As a result, a majority of our total revenues to date are attributable to sales of our COVID-19 vaccine business. Lower COVID-19 vaccine market demand could result, for example, from lower incidence of COVID-19 infections and associated hospitalizations and deaths as COVID-19 transitions from a pandemic to an endemic disease.

For purposes of the Profit Forecast 2025, specifically as basis for the assumptions related to our COVID-19 vaccine revenues, the Company assumed relatively stable pricing and market share as compared to the year ended December 31, 2024, or "**financial year 2024**" or "**year 2024**". The Company also anticipates a revenue phasing similar to year 2024 with the last three to four months driving the full year revenue figure, see also section "*10.3.2.2.1 Revenues*".

10.3.2.1.2 Dependency on Third Parties

We depend on regulatory authorities to provide guidance, approval, and oversight to ensure the safety and efficacy of our drug development processes, product candidates, and approved products, specifically with respect to our COVID-19 vaccine. The regulatory recommendations to adapt COVID-19 vaccines to address recently circulating variants or sublines of SARS-CoV-2 continue to have an impact, as well.

For purposes of the Profit Forecast 2025, specifically as basis for the assumptions related to our COVID-19 vaccine revenues, the Company assumed no material changes to our dependency on regulatory authorities with authorities continuing to provide guidance, approval, and oversight of our drug development processes, product candidates, and approved products, specifically with respect to our COVID-19 vaccine, generally in line with patterns experienced in year 2024. For purposes of the Profit Forecast 2025, specifically as basis for the assumptions related to our COVID-19 vaccine revenues, the Company assumed its sales to be determined by the variant-adapted approval and regulatory recommendations of its COVID-19 vaccine in the second half of the year 2025.

10.3.2.1.3 Factors and Assumptions Derived from Collaboration Partners

As our revenues from the supply and sales of our COVID-19 vaccine worldwide mainly comprise our share of the collaboration partners' gross profit derived from sales in the collaboration partners' territory, they are generally dependent on the factors and assumptions used and shared by our collaboration partner. Particularly, our revenues are influenced by costs, including expected inventory write-downs and other charges, incurred by these collaboration partners in that context.

Specifically, we depend on Pfizer Inc., or "**Pfizer**", to assess and share the impacts of regulatory guidance, approval, and oversight as well as the impacts of laws, regulations and governmental policies, and to determine and provide estimates of the profits and influencing costs to be shared with us in the countries where it is commercializing the COVID-19 vaccine under our collaboration agreement with them for our COVID-19 vaccine, including write-offs of inventories determined by Pfizer. Because the information supplied by Pfizer is preliminary and subject to change, the commercial revenues we anticipate to generate are subject to related uncertainties. Our commercial revenues also include preliminary estimates in part due to a difference in Pfizer's financial quarter for subsidiaries outside the United States, which consequently creates an additional time lag between the recognition of revenues and the receipt of payment and affects our ability to forecast revenues.

For purposes of the Profit Forecast 2025, specifically as basis for the assumptions related to our COVID-19 vaccine revenues, the Company assumed expected inventory write-downs and other charges from our cooperation partner Pfizer amounting to approximately 15% of our gross profit share from COVID-19 vaccines sales in Pfizer's territory in year 2025. See also section "*10.3.2.2.1 Revenues*".

10.3.2.1.4 Changes in Laws, Regulations and Governmental Policies

Laws, regulations and governmental policies, including relating to manufacturing, export controls, public health policy, or tariffs, and public perception regarding vaccines and mRNA-based therapeutics significantly impact the manufacturing and sales of our COVID-19 vaccine and other product candidates we may develop, if approved, and ultimately our operating results. Potential negative changes to any laws, regulations or governmental policies, including public health policy or tariffs, or adverse public perception worldwide, could negatively impact our anticipated revenues and expenses.

For purposes of the Profit Forecast 2025, specifically as basis for the assumptions related to our COVID-19 vaccine revenues, the Company assumed no material unforeseen changes to existing laws, regulations and governmental policies, specifically relating to manufacturing, export controls, public health policy, or tariffs, and public perception regarding vaccines and mRNA-based therapeutics.

10.3.2.1.5 Unforeseen Events

Unforeseen events might occur that could result in material or lasting constraints on the ongoing operations of the Group, such as, but not limited to, force majeure, including natural disasters (e.g., fires, floods, hurricanes, storms, and earthquakes), wars or conflicts or terrorist attacks, extraordinary macroeconomic events or cyber-attacks, maintenance outages, power or equipment failure, social unrest, work stoppages and public health concerns including any pandemic situations, potentially resulting in lockdowns, mandated store closures, and curfews as was the case during the COVID-19 pandemic. Additionally, unforeseen events could relate, among others, to the effects from the outcome of ongoing and/or future legal disputes. The occurrence of any such unforeseen event could potentially result in one-time effects and/or charges. Conversely, pandemic situations can also represent exceptional business opportunities for our business.

For purposes of the Profit Forecast 2025, the Company assumed no material unforeseen events will occur in the financial year 2025.

10.3.2.1.6 Foreign Exchange Rate Movements

We are subject to effects from foreign exchange rate movements, as our income and expenditures are denominated in euro and the U.S. dollar. As such, we are exposed to exchange rate fluctuations between these currencies. Cash inflows denominated in U.S. dollar mainly result from generating proceeds under our collaboration agreements. Our revenues are primarily collaboration revenues from earnings based on our partners' gross profit, which is shared under the respective collaboration agreements and represents payments we receive in U.S. dollar which is then mostly converted into Euros. Costs dominated in U.S. dollar mainly result from amounts spent on research and development activities and license obligations as well as expanding our global footprint further.

For purposes of the Profit Forecast 2025, the Company applied constant foreign exchange rates derived from market factors for the year 2025.

10.3.2.2 Factors That Can Be Influenced by the Company and Related Assumptions

The Profit Forecast 2025 is also subject to factors that can be influenced by the Company at least to a certain degree. These factors are reflected when forming assumptions for and the development and impact of our financial key performance indicators as described below:

10.3.2.2.1 Revenues

COVID-19 vaccine-related revenues are expected to include deliveries under existing or agreed supply contracts and expected sales in the context of conventional commercial orders. Sales revenues are heavily influenced by purchase volumes and price trends, see also section "*10.3.2.1.1 Demand for our COVID-19 Vaccine*". The regulatory recommendations to adapt COVID-19 vaccines to address recently circulating variants or sublines of SARS-CoV-2 also continue to have an impact, see also section "*10.3.2.1.2 Dependency on Third Parties*". The Company expects our sales of COVID-19 vaccine to be determined by variant-adapted approval and regulatory recommendations of our COVID-19 vaccine anticipated for the second half of the year 2025. The Company also anticipates revenue phasing similar to the financial year 2024 with the last three to four months driving the full year revenues figure. As our sales revenues represent our share of the gross profits of our collaboration partners, they are particularly influenced by the costs incurred in that context, see also section "*10.3.2.1.3 Factors and Assumptions Derived from Collaboration Partners*".

In addition to COVID-19 vaccine-related revenues, the Company assumes to generate further revenues, including from the framework agreement signed with the Federal Republic of Germany on pandemic preparedness, the production and supply of mRNA-based vaccines, and revenues from external sales by our subsidiaries InstaDeep Ltd, JPT Peptide Technologies GmbH, and BioNTech Individualized mRNA Manufacturing GmbH as well as revenues from further collaboration agreements.

For purposes of the Profit Forecast 2025, the Company assumed revenues to amount to between €1.7 billion and €2.2 billion in year 2025 and mainly include commercial sales from our COVID-19 vaccine business as well as revenues from a collaboration agreement.

10.3.2.2.2 Research and Development Expenses

Research and development expenses represent costs incurred by us, including but not limited to, the following: cost to develop our platforms; discovery efforts leading to product candidates; clinical development expenses for our programs; cost to develop our manufacturing technology and infrastructure; and digital infrastructure costs. These costs comprise the following categories: personnel-related expenses, including salaries, benefits, share-based compensation expense and social security expense; expenses incurred under agreements with third parties, such as consultants, investigative sites, contract research organizations, or CROs, that conduct our preclinical studies and clinical trials, and in-licensing arrangements; costs of acquiring, developing and manufacturing materials for preclinical studies and clinical trials, including both internal manufacturing and third-party contract manufacturing organizations, or CMOs; expenses incurred for the procurement of materials, laboratory supplies and non-capital equipment used in the research and development process; and facilities, depreciation and amortization, and other direct and allocated expenses incurred as a result of research and development activities.

In the financial year 2025, we expect to make significant progress in several clinical studies in the oncology pipeline, such as our key clinical product candidate BNT327. We anticipate to continue using the potential of our pipeline to strengthen BNT327, in particular through combinations with our ADC candidates. We also intend continuing to develop our COVID-19 vaccine, including in combination with flu protection. Overall, in focus areas, we expect to increase our expenditure on research and development while, in line with our cost-conscious portfolio optimization strategy, we expect to reduce it outside our focus area.

For purposes of the Profit Forecast 2025, the Company assumed research and development expenses for the financial year 2025 to amount to between €2.6 billion and €2.8 billion.

10.3.2.2.3 Sales, General and Administrative Expenses

Our sales, general and administrative expenses consist primarily of personnel-related costs for general sales efforts, purchased services, travel costs, social security, transport costs and depreciation as well as personnel-related costs (including share-based compensation) for finance, legal, human resources, business development and other administrative and operational functions, professional fees, accounting and legal services, information technology and facility-related costs. General and administrative costs relate to the operation of the business, unrelated to the research and development function or any individual program.

The costs for internal administrative and coordinated functions such as finance, human resources, and business development are expected to remain relatively stable. Distribution costs are expected to increase as part of the preparations for the market launch of new products.

For purposes of the Profit Forecast 2025, the Company assumed combined sales and marketing expenses plus general and administrative expenses in the financial year 2025 to amount to between €650.0 million and €750.0 million.

10.3.2.2.4 Charges from GSK/CureVac Settlement Arrangements

We are and may be involved in various legal proceedings, including patent litigation, product liability and other product-related litigation, as well as other legal proceedings that arise from time to time in the ordinary course of business, including with regards to intellectual property rights.

For purposes of the Profit Forecast 2025, the Company considered the effects from the GSK/CureVac Settlement Arrangements (which are further described in section "*11.12.1.4 Settlement Arrangements with GSK and CureVac*") but, for the avoidance of doubt, excluding the effects of such settlement arrangements which are contingent upon the closing of the contemplated business combination with CureVac. To the extent the GSK/CureVac Settlement Arrangements are definitive, the Company assumed related settlement expenses contributing to our net loss for the financial year 2025.

10.3.2.2.5 Mergers and Acquisitions and Other Portfolio Measures

Mergers and acquisitions and other portfolio measures, such as portfolio prioritization, can impact our results of operations including, but not limited, as a result of the contractually agreed purchase price commitments in case of the acquisition of a business, or one-time effects and charges related to planned portfolio measures, the latter of which are, however, subject to numerous uncertainties and continued review.

For purposes of the Profit Forecast 2025, the Company considered the effects from M&A transactions only with respect to the acquisition of Biotheus, closed in January of 2025. For the avoidance of doubt, the contemplated business combination with CureVac was excluded. For purposes of the Profit Forecast 2025, the Company assumed the contribution of Biotheus to our net loss for the financial year 2025 to be negative as the business is expected to remain loss-making.

For purposes of the Profit Forecast 2025, the Company considered estimates of one-time effects and charges related to portfolio prioritization in other operating expenses.

10.3.3 Other Explanatory Notes

This Profit Forecast 2025 does not take into account any extraordinary events, or results from non-recurring activities, except where explicitly stated otherwise in the explanatory notes above.

As this Profit Forecast 2025 relates to a period not yet completed and is prepared on the basis of several assumptions and estimates about future uncertain events and actions (factors), it inherently entails significant uncertainties. Because of these uncertainties, it is possible that the actual net profit / (loss) of the Group for the financial year 2025 may deviate from the Profit Forecast 2025, even substantially.

This Profit Forecast 2025 was prepared solely for the inclusion in this Prospectus and represents the best estimates of the Management Board as of September 16, 2025 and is still valid as of the date of the Prospectus.

11 BUSINESS

11.1 Overview

We believe we are a global next-generation immunotherapy company aiming to pioneer novel medicines against cancer, infectious diseases and other serious diseases. Since our founding in 2008, we have focused on harnessing the power of the immune system with the goal to address human diseases with unmet medical needs and major global health burdens. Our fully integrated model combines decades of research in immunology with a multi-technology innovation engine, GMP manufacturing, translational drug discovery, clinical development, commercial capabilities, computational medicine, data science and AI, and ML capabilities to discover, develop and commercialize our marketed product and product candidates.

We have built a broad toolkit across multiple technology platforms, including a diverse range of potentially first-in-class therapeutic approaches. This includes investigational messenger ribonucleic acid, or mRNA immunotherapies, protein-based therapeutics (including targeted antibodies such as monoclonal, bispecific and ADCs) and cell therapies.

We believe our multi-technology combination of platforms and product candidates positions us as pioneers in the field of individualized, patient-centric therapeutic approaches in oncology and infectious diseases.

Our primary focus is oncology, where we endeavor to address the full continuum of cancer from early to late disease stages. The root causes of cancer treatment failure are cancer heterogeneity and interindividual variability. Driven by random sequential mutations, every patient's cancer is different and within one patient's tumor, every cell is different. Addressing these two challenges is the core of our strategy. To augment anti-tumor activity and to counteract resistance mechanisms, we seek to combine compounds with non-overlapping, potentially synergistic mechanisms of action.

Our approach has generated a robust and diversified product candidate pipeline across a range of technologies in oncology and infectious disease, and has led to the approval of our first marketed product, *Comirnaty*.

11.2 Our Strategy

11.2.1 The BioNTech Approach

Our key objectives are to develop an innovative immunotherapy pipeline in oncology targeting multiple product approvals in the coming years and to build a sustainable respiratory infectious disease vaccine business based on the BioNTech-Pfizer *Comirnaty* franchise. We are uniquely positioned to pursue our objectives by leveraging our technology agnostic approach rooted in decades of research in immunology coupled with expertise in emerging mRNA technologies. Our vision is to establish a multi-product company based on our technologies and science to contribute to improving the health of people worldwide.

11.2.1.1 Oncology Pipeline Strategy

Cancer is one of the most profound medical challenges of humankind. Genetic and phenotypic heterogeneity, the tumor microenvironment and immune diversity make cancer a complex and heterogeneous disease. Our long-term oncology vision is to expand the number of available treatment options for cancer patients. We aim to address the full continuum of cancer treatment by developing novel therapies to best serve the needs of cancer patients from adjuvant to late-stage settings.

Since our founding, we have been a multi-technology company. We believe that by combining complementary treatment modalities, we can leverage the potential of each technology to provide precise and personalized treatments to patients. Such treatments, if approved, could both increase the likelihood of therapeutic success and reduce the risk of therapeutic resistance. By building a diverse toolkit and clinical portfolio with synergistic mechanisms of action, we aim to exploit the potential of our technologies:

- ***mRNA Cancer Immunotherapies***: We are developing a portfolio of mRNA-based therapeutic candidates to treat cancer: cancer immunotherapies, including *FixVac* (fully owned) and iNeST (in collaboration with Genentech, Inc., a member of the Roche Group, or "**Genentech**"), and mRNA-encoded cytokines and antibodies. We believe that mRNA cancer immunotherapy candidates, if successful, could have the potential to eliminate polyclonal residual disease by targeting multiple antigens at once for potential long-term impact.
- ***Immunomodulators****:* We are building a modality agnostic toolkit to focus on crucial immuno-oncology pathways. We target different but complementary players in the complex cancer immunity cycle to potentially promote a thorough and durable antitumor effect. We use our in-house capabilities and collaborate with Genmab A/S, or "**Genmab**", and OncoC4, Inc., or "**OncoC4**", to develop next-generation immunomodulators that are designed to modulate the patient's immune response to cancer.
- ***Targeted Therapies****:* We aim to develop potent and precise therapies that could reduce tumor burden across the entire disease continuum, including late lines. We collaborate with Duality Biologics (Suzhou) Co. Ltd., or "**DualityBio**", and MediLink Therapeutics (Suzhou) Co., Ltd., or "**MediLink Therapeutics**", to develop next-generation ADCs. ADCs are expected to transform cancer care. We believe they have the potential to supplement or replace chemotherapy in the future. We believe that a differentiated ADC linker technology could improve efficacy and safety compared to currently approved ADCs, and novel mechanisms of action may be able to improve tumor specific activation. We are also developing a range of cell therapies against solid tumors, including chimeric antigen receptor, or "**CAR-T**",-cell therapies, neoantigen-based T-cell therapies and T-cell receptor, or "**TCR**", therapies in which the patient's T cells are modified or primed to target cancer-specific antigens.

From our diverse clinical portfolio, we have identified two high-priority programs with pan-tumor potential and programs that we believe will enable us to realize our vision of addressing the full continuum of cancer: first, our mRNA cancer immunotherapy programs, *FixVac* and iNeST, which we believe are particularly suited for early-stage or low tumor burden cancers; and second, our late-stage clinical asset BNT327, formerly also known as PM8002, an investigational bispecific antibody targeting PD-L1 and VEGF-A, and for which we obtained full global rights with the acquisition of Biotheus in January of 2025. We believe that BNT327 has the potential to become a next-generation immuno-oncology treatment backbone suitable for a broad range of cancers and we entered into a global co-development and co-commercialization arrangement with Bristol Myers Squibb in June 2025 to further exploit BNT327.

We plan to continue building our oncology pipeline and commercial capabilities in 2025 in anticipation of potential commercial oncology launches as soon as 2026, if approved.

11.2.1.2 Infectious Disease Pipeline Strategy

Infectious diseases remain among the leading causes of death and disability worldwide. Low- and middle-income countries continue to bear much of the burden of communicable diseases, which include tuberculosis, human immunodeficiency virus, or HIV, malaria, neglected tropical diseases and hepatitis B (WHO, World health statistics 2022). Climate change, rising population numbers and global travel may all contribute to an increased risk of global infectious disease outbreaks (Mora et al., 2022).

Our goal is to advance our infectious disease programs by developing vaccines and therapeutics for infectious diseases caused by respiratory viruses, latent viruses, bacteria and parasites. We believe our scientific approach and our mRNA technology have the potential to significantly contribute to the fight against global health threats caused by infectious diseases. We have pursued both strategic partnerships and corporate collaborations to partially fund our infectious disease global health programs and aim to continue to do so. Our infectious disease programs aim to contribute to equitable access to effective and well tolerated vaccines for high medical need indications.

Together with our collaborator Pfizer, we plan to continue to invest into the research and development of next-generation COVID-19 vaccines and COVID-19 / influenza combination vaccines. We expect seasonal COVID-19 vaccination to continue, driven by the continuous evolution of the virus. We aim to maintain COVID-19 vaccine market leadership and expect continued revenues from COVID-19 vaccine sales in the near term (see section "*11.2.3.2 Leadership in COVID-19 Vaccine Development*").

We and our partners are also committed to researching and developing product candidates against latent viruses, including herpes-simplex virus, or "**HSV**", and mpox (formerly known as monkeypox). Latent viruses remain in the body after an infection and can lead to lifelong medical complications.

In addition, we have ongoing trials evaluating mRNA vaccine candidates against diseases caused by bacteria (tuberculosis) and parasites (malaria).

We see the potential for applications of our technologies beyond oncology and infectious disease, including autoimmune diseases, inflammatory diseases, cardiovascular diseases, neurodegenerative diseases and regenerative medicines.

11.2.2 Strategic Outlook

We are committed to translating science into survival for patients by advancing BioNTech's strategy and executing it to become a global immunotherapy powerhouse with multiple approved products and revenue streams.

As part of this continued approach, we have built a unique pipeline by targeting technologies and candidates with disruptive potential. In oncology, we focus on therapeutic approaches with pan-tumor potential, including our personalized mRNA cancer immunotherapies and our bispecific antibody candidate BNT327. We plan to significantly invest in their broad clinical evaluation across multiple cancer indications with significant medical needs, as well as their commercialization in key markets. We aim to further enhance the therapeutic profile of our investigational therapies through the evaluation of novel combinations, including our differentiated portfolio of ADCs and targeted therapy candidates.

As we continue to invest in executing our vision, we remain committed to cost-effective value generation. We actively manage our pipeline and assess our sites according to key criteria: strategic alignment, operational efficiency, and sustainable value creation. Consequently, we plan to significantly invest in essential areas while optimizing capacities in others. While capacities may shift in accordance with our strategic criteria, we expect our overall headcount to remain relatively stable over the next three years.

We have implemented, or expect to start implementing in 2025, measures aimed at expanding our research, development, manufacturing and commercialization capabilities, which we currently anticipate may result in the creation of up to between 800 and 1,200 FTE positions over the period of 2025 to 2027, including:

- The construction of our first large-scale mRNA immunotherapy manufacturing facility in Mainz, Germany, which we started in 2019 and for which we plan to initially fill approximately 350 FTE positions in 2025.
- The completion of the acquisition of Biotheus in January 2025, through which we obtained full global rights to BNT327 as well as rights to all other candidates and have increased our presence in mainland China by approximately 325 FTE positions.
- The strategic expansion of workforce in selected areas across our sites worldwide, such as clinical development and commercial operations.

We intend to implement measures between 2025 and 2027 to adjust capacities in some areas by between 950 and 1,350 FTE positions, including:

- An optimization of our manufacturing network by (i) establishing focused centers of excellence for early-stage mRNA manufacturing in Idar-Oberstein, while (ii) right-sizing our center of excellence for late-stage mRNA manufacturing in Marburg. We currently expect that this will involve consolidating and adjusting capacities within our manufacturing network, which could lead to an estimated reduction of the workforce in Marburg of between 250 and 350 FTE positions and in Idar-Oberstein (Germany) of between 100 and 200 FTE positions over this time period.

- The consolidation and adjustment of capacities across administrative functions and preclinical research in Europe and North America, resulting in an estimated workforce reduction of between 550 and 700 FTE positions over this time period.

We have started implementing these measures which includes a planned workforce reduction at our Gaithersburg manufacturing site. We will continue to drive progress with a focus on our highest potential opportunities and we believe we are well-positioned to continue advancing our strategic vision.

11.2.3 Execution in 2024 and 2025 to date

In 2024 and 2025, we executed across our four key strategic pillars to strengthen our technology platforms, digital capabilities and infrastructure, through strategic investments, acquisitions, licensing agreements and public-private partnerships impacting patients, shareholders and other stakeholders.

11.2.3.1 Diversified Pipeline

We continued to develop our oncology and infectious disease pipeline. As of the date of the Prospectus, our pipeline consists of 16 clinical programs in oncology, with more than 20 Phase 2 and Phase 3 clinical trials, and six clinical programs in infectious disease. In 2024 and 2025, we and our partners reported data across our portfolio at multiple medical meetings and published manuscripts in peer reviewed journals.

In oncology, we started multiple clinical trials and brought several assets into mid- and late-stage development, namely Phase 2 and Phase 3 clinical trials, across a range of technologies, including our bispecific antibody BNT327, mRNA cancer immunotherapies and ADCs.

We aim to advance additional product candidates to late-stage development, and we expect to continue building our pipeline towards our potential first oncology launch as early as 2026.

11.2.3.2 Leadership in COVID-19 Vaccine Development

We continued to build our COVID-19 vaccine franchise and maintained market leadership in multiple key geographies (measured as more than 50% market-share according to our analysis). In 2024, we and Pfizer distributed approximately 180 million COVID-19 vaccine doses to more than 40 countries and regions globally based on internal market research. In 2024, we also increased our supply of prefilled syringes in several markets. We are now focused on the launch of our LP.8.1-adapted monovalent COVID-19 vaccine for the 2025/2026 season.

11.2.3.3 Healthcare and Social Responsibility

We advanced our goal of contributing to equitable access to medicine around the globe, with over 30% of *Comirnaty* doses delivered to low- and middle-income countries in 2024, in line with demand. We continue to work with non-governmental organizations, institutes and governments to plan for equitable access to novel medicines, especially in low- and middle-income countries and regions.

We are developing mRNA vaccine candidates for infectious diseases with high medical need, including vaccine candidates against tuberculosis, malaria and HIV, as well as against infectious diseases with pandemic potential, such as mpox. In May 2024, we and the Coalition for Epidemic Preparedness Innovations, or "**CEPI**", announced the expansion of our strategic partnership to support the establishment of RNA vaccine clinical and commercial-scale manufacturing capabilities at our facility in Kigali, Rwanda. These capabilities will contribute to develop potential mRNA vaccines predominantly in Africa for Africa and better prepare for potential future epidemic and pandemic threats in Africa. CEPI is set to provide funding of up to $145 million.

In 2024, our near-term science-based emission reduction targets were approved by The Science Based Targets initiative (SBTi), a climate action organization which develops methods and criteria for effective corporate climate action and validates corporate targets. This validation underlines that our scope 1 and scope 2 climate targets are ambitious and in line with the United Nations' Paris Climate Agreement to limit global warming to 1.5 degrees Celsius above pre-industrial levels. The SBTi has validated our near-term emission reduction targets in the following form:

- BioNTech commits to reducing absolute scope 1 and scope 2 greenhouse gas emissions by 42% by 2030 from a 2021 base year.
- BioNTech commits that 72% of its suppliers by emissions covering purchased goods and services, capital goods and upstream transportation and distribution, will have science-based targets by 2027.

11.2.3.4 Innovation at Scale

We are building and scaling biotech innovation with the aim of becoming a patient-centric, AI-driven, multi-product immunotherapy company. Our diverse workforce consists of almost 6,772 employees (full-time equivalents) as of December 31, 2024, and we have subsidiaries in countries across five continents, having further expanded our organization in Asia, Africa, North America, Australia and Europe.

In February 2024, we entered into a strategic collaboration with Autolus Therapeutics plc's wholly owned subsidiaries, Autolus Limited and Autolus Holdings (UK) Limited, which collectively we refer to as "**Autolus**", aimed at advancing both companies' autologous CAR-T programs towards commercialization, pending regulatory authorizations.

Effective as of July 1, 2024, and with a view to BioNTech's first oncology product launch anticipated for 2026, the Supervisory Board appointed Annemarie Hanekamp to the Management Board as Chief Commercial Officer. Annemarie Hanekamp is a seasoned pharmaceutical executive, experienced in developing patient-focused commercial strategies for innovative oncology products encompassing sales, marketing and market access. In her role, she is driving and executing our global commercialization strategy to leverage BioNTech's full potential as a vertically integrated biopharmaceutical company.

In January 2025, we completed the acquisition of Biotheus. With the acquisition, we obtained full global rights to the investigational bispecific antibody BNT327, that targets PD-L1 and VEGF-A, formerly also known as PM8002, and Biotheus' pipeline candidates. This follows an initial exclusive global license and collaboration agreement with Biotheus in 2023 to develop, manufacture and commercialize BNT327 globally, ex-Greater China. The transaction is part of our oncology strategy, aimed at enhancing the Company's capabilities to research, develop and commercialize combination therapies using BNT327. Clinical trials with BNT327 have demonstrated encouraging clinical activity in various tumor types including in patients with PD-L1-low and -negative tumors who have typically been less responsive to current checkpoint inhibitor treatments.

In June 2025, we entered into a global co-development and co-commercialization agreement with Bristol-Myers Squibb Company ("**BMS**") to jointly develop, manufacture and commercialize our investigational bispecific antibody BNT327 across numerous solid tumor types. Under the BMS Agreement, BMS will pay us $1.5 billion in an upfront payment and $2 billion total in non-contingent anniversary payments through 2028. In addition, we will be eligible to receive up to $7.6 billion in additional development, regulatory and commercial milestones.

In 2025, we maintained a strong balance sheet through disciplined financial performance, with approximately €16.0 billion in total cash, cash equivalents and security investments as of June 30, 2025. With a strong financial position, leading COVID-19 vaccine franchise and innovative oncology and infectious disease pipeline, we believe we are well positioned to continue executing our vision of pioneering novel medicines against cancer, infectious diseases and other serious diseases.

11.3 Our Products

11.3.1 Marketed Product: Comirnaty, our COVID-19 Vaccine Program (BNT162)

COVID-19 vaccination has played an important role in saving lives and livelihoods across the world (Meslé MMI al, 2024). Our commercial product, developed in 2020, *Comirnaty*, was the first-ever approved mRNA-based product (FDA, 2021), and, to our knowledge, remains the fastest ever developed prophylactic vaccine from viral sampling to approval. As of March 2025, our COVID-19 vaccine products have been authorized or approved for emergency or temporary use or granted marketing authorization in more than 180 countries and regions worldwide. As of December 2024, our efforts have resulted in nearly 5 billion doses shipped globally. We are now focused on the launch of our LP.8.1-adapted monovalent COVID-19 vaccine for the 2025/2026 season.

Under our collaboration with Pfizer, we are the Marketing Authorization Holder in the United States, the European Union, or EU, the U.K., Canada and other countries. Additionally, we are the holder of emergency use authorizations, or EUAs, or equivalents in the United States (jointly with Pfizer) and other countries for the COVID-19 vaccine program. Pfizer has marketing and distribution rights worldwide apart from Greater China, Germany, and Türkiye. We have the marketing and distribution rights to *Comirnaty* in Germany and Türkiye.

Under our collaboration with Fosun Pharmaceutical Industrial Development, Co., Ltd, or "**Fosun Pharma**", Fosun Pharma has marketing and distribution rights in Mainland China, Hong Kong SAR, Macau SAR and the Taiwan region.

11.3.1.1 Commercial Update

In 2024 and 2025, we and Pfizer continued our global COVID-19 vaccine leadership with our Omicron JN.1 and Omicron KP.2-adapted monovalent COVID-19 vaccines directed against the Omicron JN.1 and Omicron KP.2 variants respectively. Since the declaration of the pandemic, we have developed and commercialized six COVID-19 vaccine products: the original COVID-19 vaccine, two Original/Omicron-adapted bivalent vaccines (Original/BA.1- and Original/Omicron BA.4-5-adapted bivalent vaccines), the Omicron XBB.1.5-adapted monovalent COVID-19 vaccine, and the Omicron JN.1 and Omicron KP.2 monovalent COVID-19 vaccines. Each is referred to as *Comirnaty*. Between December 2020 and March 2023, COVID-19 vaccination programs across 34 World Health Organization, or "**WHO**", European Region countries prevented an estimated 1.6 million deaths (Meslé MMI et.al, 2024). In the first two years of the COVID-19 vaccine being available in the United States, the country's vaccination program is estimated to have prevented more than 18 million additional hospitalizations and more than 3 million additional deaths (Fitzpatrick et al., 2022).

In August 2024, following regulatory approvals, we and Pfizer began distribution of our Omicron KP.2 variant-adapted vaccine in the United States. The KP.2 adaptation is based on guidance from the FDA, which stated that KP.2 is the preferred strain of the JN.1 lineage for COVID-19 vaccines for use in the United States during the 2024-2025 fall and winter season, if feasible.

In September 2024, following regulatory approvals, we and Pfizer began distribution of our Omicron KP.2 variant-adapted vaccine in Europe following the initial rollout of our Omicron JN.1 variant-adapted vaccine in July 2024.

Ours and Pfizer's Omicron JN.1 and Omicron KP.2 and Omicron LP.8.1-adapted monovalent COVID-19 vaccines received multiple regulatory approvals and authorizations in more than 40 countries and regions and are available in multiple presentations: as pre-filled syringes, multi-dose vials and single-dose vials.

We expect that as SARS-CoV-2 continues to evolve, and the risk of severe COVID-19 disease and deaths persists, there will be continued demand for primary and seasonal vaccinations especially for at-risk and immunocompromised populations. Studies have demonstrated that natural immunity acquired by SARS-CoV-2 infection is variable across individuals and wanes over time due to viral escape mutations and decreasing titers. The risk of severe COVID-19 disease remains high in vulnerable populations. Vaccination not only reduces the risk of severe COVID-19 but may also mitigate the risk of health impairments related to long COVID. Given this, and our current understanding of COVID-19's burden on healthcare systems during the fall and winter season, along with its observed peaks at other times of the year, we anticipate the need for annual adapted vaccines to be a long-term component of COVID-19 vaccination practices.

In the third quarter of 2025, we conducted the required preparation activities for COVID-19 vaccine adaptation and for the commercial launch of SARS-CoV-2 variant-adapted vaccines for the 2025/2026 vaccination season.

11.3.1.2 Manufacturing and Distribution

We and Pfizer have established an efficient and robust global vaccine supply chain and manufacturing network capable of meeting global demand.

We expect to continue the transition from an advanced purchase agreement environment to commercial market ordering in more geographies driven by updated regulatory recommendations to adapt COVID-19 vaccines to newly circulating variants or sublineages of SARS-CoV-2.

We and Pfizer have an ongoing COVID-19 vaccine purchase agreement with the EU Commission to deliver COVID-19 vaccines to the EU. The agreement reflects our and Pfizer's commitment to working collaboratively to help address ongoing public health needs. The 2023 agreement rephased delivery of doses annually through 2026. In addition, the agreement includes an aggregate volume reduction, providing additional flexibility for EU Member States. The EU Commission will maintain access to future adapted COVID-19 vaccines and the ability to donate doses.

More details on our manufacturing operations and facilities can be found in section "*11.5 Manufacturing*".

11.3.1.3 Clinical Development

Omicron JN.1 and Omicron KP.2-adapted monovalent COVID-19 Vaccines

While JN.1 and KP.2 variant-adapted vaccines provided some protection against a range of outcomes from JN.1-lineage related COVID-19 disease, evidence suggests that vaccines better matched to currently circulating SARS-CoV-2 sublineages may provide improved protection against symptomatic and severe COVID-19 disease.

Our and Pfizer's regulatory filings have been based on the full body of previous clinical, non-clinical and real-world evidence supporting the safety and efficacy of the Pfizer-BioNTech COVID-19 vaccines. The submissions included manufacturing and non-clinical data showing that the JN.1- and KP.2-adapted monovalent vaccines elicited a markedly improved immune response against multiple Omicron JN.1 sublineages, such as KP.3.1.1, or "**LB.1**", and other currently circulating variants, when compared with the Omicron XBB.1.5-adapted monovalent vaccine.

Clinical immunogenicity data demonstrated that the Omicron JN.1-adapted vaccine induces a strong and broad neutralizing antibody response across multiple JN.1 sublineages including XEC.

Early vaccine effectiveness data from a nationwide test-negative case-control study involving U.S. Veterans Affairs Healthcare System patients indicate that the Omicron KP.2-adapted vaccine was 56-68% effective in preventing various COVID-19 outcomes during the early 2024-2025 respiratory virus season (Haley et al, 2024). A second study of U.S. adults aged 18 and older who visited CVS MinuteClinics found that those who received the vaccine were 48% less likely to have COVID-19-related clinic visits (Rudolph et al., 2025).

Although the COVID-19 outbreak has moved from a pandemic to an endemic stage, new SARS-CoV-2 infections, hospitalization and deaths continue to be reported. However, trends in these figures should be interpreted with caution, as testing and sequencing have decreased, and many countries face reporting delays. Wastewater surveillance, an important component of SARS-CoV-2 monitoring, plays a crucial role in early warning and tracking of the circulation of variants. Estimates from wastewater surveillance suggest that SARS-CoV-2 circulation is approximately 2 to 19 times higher than what is identified and reported through clinical testing.

Older adults (aged 65 and above), comorbid or immunocompromised individuals continue to face a heightened risk of severe disease, hospitalization, and death from SARS-CoV-2.

11.3.1.4 Regulatory Updates

Our and Pfizer's Omicron JN.1 and Omicron KP.2-adapted monovalent COVID-19 vaccines received multiple regulatory approvals and authorizations in more than 40 countries and regions in 2024.

In April 2024, the WHO and the EMA followed in later months by other health authorities, provided guidance highlighting evidence that updated vaccines targeting Omicron JN.1 or JN.1 sublineages may contribute to maintaining protection against COVID-19 during the upcoming fall and winter seasons.

In June 2024, the FDA's Vaccines and Related Biological Products Advisory Committee, or "**VRBPAC**", issued guidance recommending the manufacturing of a JN.1-adapted monovalent COVID-19 vaccine for the 2024/2025 fall and winter seasons. Also in June 2024, the FDA announced the KP.2 strain as the preferred JN.1-lineage for COVID-19 vaccines, if feasible.

In May 2025, the WHO, EMA and FDA each issued recommendations to update the antigenic composition of authorized COVID-19 vaccines for the 2025-2026 vaccination season. The WHO advised manufacturers that monovalent JN.1 or KP.2 vaccines remain appropriate vaccine antigens and that monovalent LP.8.1 is a suitable alternative vaccine antigen. EMA recommended that marketing authorization holders adapt vaccines to target the LP.8.1 variant of the JN.1 family of Omicron subvariants, and vaccines targeting JN.1 or KP.2 strains could be considered for the vaccination campaigns in 2025 until the updated LP.8.1 vaccines become available. The FDA advised manufacturers that COVID-19 vaccines for use in the United States in the fall of 2025 should be a monovalent JN.1-lineage-based composition, preferentially targeting the LP.8.1 strain.

Omicron JN.1-adapted monovalent COVID-19 vaccine.

In 2024, we and Pfizer received the following approvals for our Omicron JN.1-adapted monovalent COVID-19 vaccine:

- June 2024: the Committee for Medicinal Products for Human Use, or "**CHMP**", of the EMA recommended marketing authorization for our and Pfizer's Omicron JN.1-adapted monovalent COVID-19 vaccine for active immunization to prevent COVID-19 caused by SARS-CoV-2 in individuals six months of age and older. The adaptation was based on the recommendation from the WHO Technical Advisory Group on COVID-19 Vaccine Composition and the EMA's Emergency Task Force to update COVID-19 vaccines to target the SARS-CoV-2 variant JN.1 for the 2024/2025 fall and winter vaccination campaign. In July 2024, the EU Commission adopted an EU Commission Decision in accordance with the CHMP's recommendation.
- July 2024: the respective EU Commission Decision also covered that *Comirnaty* may be administered concomitantly with seasonal influenza vaccine in individuals 12 years of age and older and authorized a new presentation for the 30-mcg adapted vaccine, namely glass pre-filled syringe (refrigerated storage conditions).
- July 2024: the U.K.'s Medicines and Healthcare products Regulatory Agency, or "**MHRA**", approved our and Pfizer's Omicron JN.1-adapted vaccine.

Omicron KP.2-adapted monovalent COVID-19 vaccine.

In 2024, we and Pfizer received the following approvals for our Omicron KP.2-adapted monovalent COVID-19 vaccine:

- June 2024: we and Pfizer submitted a regulatory application to the FDA for an Omicron JN.1-adapted monovalent vaccine and initiated a rolling supplemental Biologics Licensing Application, or "**sBLA**", for an Omicron KP.2-adapted monovalent vaccine. In August 2024, the FDA approved the sBLA for our Omicron KP.2-adapted 2024-2025 formula COVID-19 vaccine for individuals 12 years of age and older and granted EUA for individuals six months through 11 years of age.
- September 2024: the CHMP of the EMA also recommended marketing authorization for our and Pfizer's Omicron KP.2-adapted monovalent COVID-19 vaccine for active immunization to prevent COVID-19 in individuals six months of age and older. The EU Commission adopted an EU Commission Decision in accordance with the CHMP recommendation one week later.
- October 2024: the FDA approved the sBLA to include safety and immunogenicity data from a study in which individuals 18 through 64 years of age received *Comirnaty* concomitantly with a seasonal influenza vaccine.
- October 2024: the U.K.'s MHRA approved our Omicron KP.2-adapted vaccine.

Omicron LP.8.1-adapted monovalent COVID-19 vaccine.

- In May 2025, we submitted to the EMA a marketing authorization application for our LP.8.1-adapted monovalent COVID-19 vaccine.
- In July 2025, the CHMP recommended marketing authorization for the companies' LP.8.1-adapted monovalent COVID-19 vaccine. Following authorization by the EU Commission, the new variant-adapted COVID-19 vaccine will be ready to ship to applicable EU member states in August.
- In June 2025, we initiated a rolling submission with the FDA for our LP.8.1-adapted monovalent COVID-19 vaccine.
- In July 2025, the first subject was dosed in a Phase 3 (NCT07069309) study to investigate the safety, tolerability, and immunogenicity of our LP.8.1-adapted COVID-19 vaccine in adults, including those at higher risk of severe COVID-19 ahead of 2025-2026 COVID-19 vaccination season, pending approval.
- In August 2025, the FDA approved the sBLA for our and Pfizer's LP.8.1-adapted monovalent COVID-19 vaccine for use in adults aged 65 years and older, as well as in individuals aged 5 through 64 years with at least one underlying condition that puts them at high risk for severe outcomes from COVID-19.

We and Pfizer intend to continue to monitor the evolving epidemiology of COVID-19 and remain prepared to develop modified vaccine formulas as the data support and as regulatory agencies recommend.

11.3.2 Pipeline of Product Candidates

We are advancing a broad portfolio of product candidates derived from multiple platforms and are focused on immunotherapies for the potential treatment of cancer and mRNA vaccines to potentially prevent or treat infectious diseases. The following tables provide an overview of our oncology programs and our infectious disease programs, followed by a summary of active clinical trials evaluating our authorized product and clinical product candidates, organized by platform and indication. For a description of the phases of clinical trials, see section "*12.2.2 Human Clinical Trials in Support of an NDA or a BLA*".

Oncology

mRNA Cancer Immunotherapies

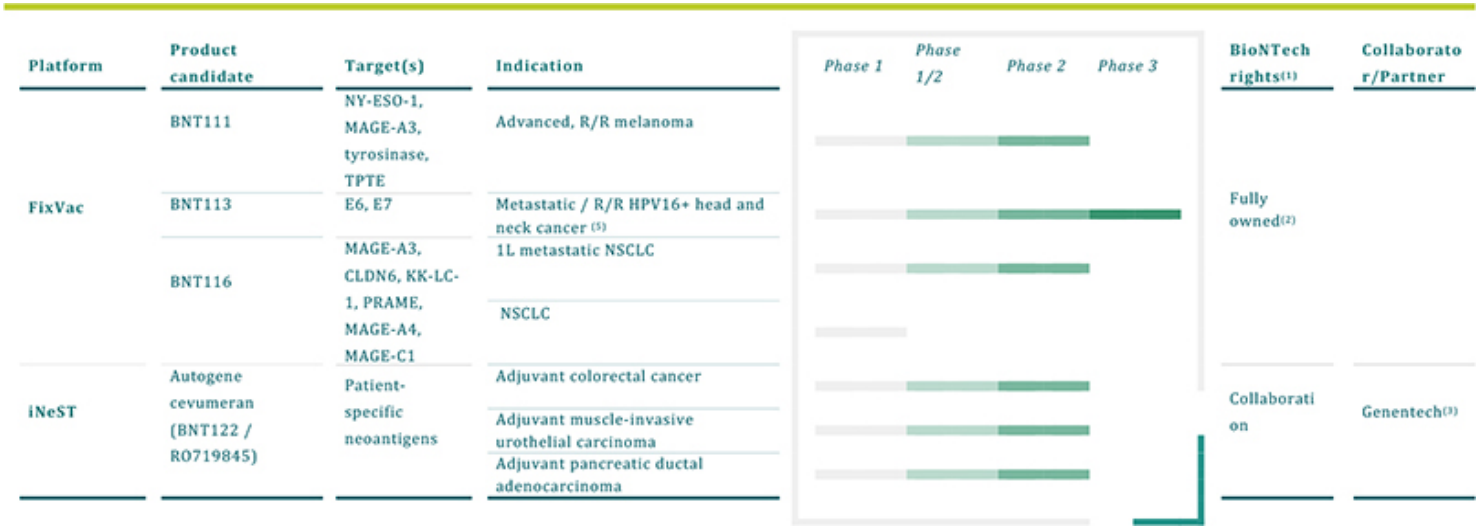


Table of Contents

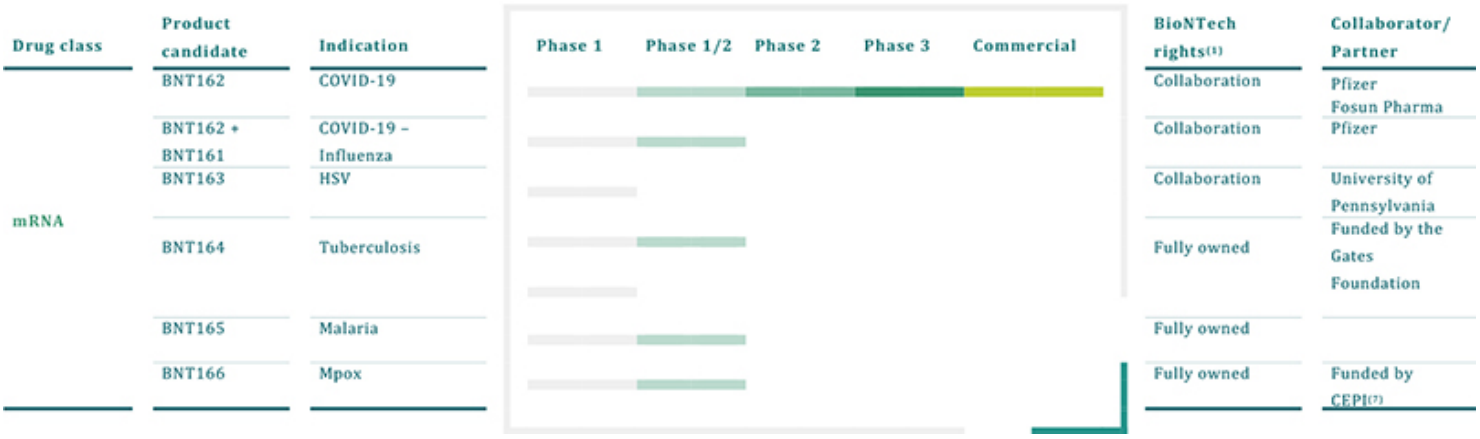
Next-generation Immunomodulators

Product candidate	Combination candidate	Target	Indication	BioNTech rights[1]	Collaborator/ Partner
Pumitamig (BNT327/BMS986545)		PD-L1 x VEGF-A	1L ES-SCLC	Collaboration	Bristol Myers Squibb
			1L ES-SCLC [4, 6]		
			1/2L+ ES-SCLC		
			2L ES-SCLC [4, 6]		
			2L SCLC [4]		
			1L NSCLC [5]		
			2L advanced/metastatic NSCLC		
			2L+ EGFRm NSCLC [4, 6]		
			1L advanced/metastatic TNBC [4]		
			1L advanced/metastatic TNBC [4, 6]		
			1L/2L advanced/metastatic TNBC		
			1L metastatic colorectal cancer [4]		
			1L malignant pleural mesothelioma [4, 6]		
			1L hepatocellular carcinoma [4, 6]		
			2L neuroendocrine neoplasms [4, 6]		
			Multiple solid tumors [4, 6]		
	BNT314 / GEN1059	EpCAM×4-1BB	Metastatic colorectal cancer	Collaboration	Genmab
	BNT3212	EGFR x HER3	Multiple solid tumors	Fully owned	
	BNT3213	TIGIT x PVRIG	1L hepatocellular carcinoma [4, 6]	Fully owned	
	Trastuzumab pamirtecan (BNT323 / DB-1303)	HER2	Advanced/metastatic breast cancer[6]		
	BNT324 / DB-1311	B7-H3	Multiple solid tumors[6]	Collaboration	Duality Biologics
			Advanced/metastatic NSCLC and SCLC[6]		
	BNT325 / DB-1305	TROP2	Multiple solid tumors[6]		
	BNT326 / YL202	HER3	Advanced NSCLC	Collaboration	MediLink Therapeutics
			Multiple solid tumors		
BNT312 / GEN1042		CD40×4-1BB	Multiple solid tumors	Collaboration	Genmab
BNT314 / GEN1059		EpCAM×4-1BB	Multiple solid tumors		
Gotistobart (BNT316 / ONC-392)		CTLA-4	aPD(L)1-R/R metastatic NSCLC	Collaboration	OncoC4
			Platinum-resistant ovarian cancer		
			Metastatic castration-resistant prostate cancer		
			Multiple solid tumors		
BNT317		undisclosed	Multiple solid tumors	Fully owned	

Targeted Therapies

Platform	Product candidate	Target	Indication	Phase 1	Phase 1/2	Phase 2	Phase 3	BioNTech rights[1]	Collaborator /Partner
Antibody-drug conjugates	Trastuzumab pamirtecan (BNT323 / DB-1303)	HR2	HR+/HER2-low metastatic breast cancer					Collaboration	Duality Biologics
			2L endometrial cancer						
			Multiple solid tumors						
	BNT324 / DB-1311	B7-H3	Multiple solid tumors						
	BNT325 / DB-1305	TROP2	Multiple solid tumors						
	BNT326 / YL202	HER3	Multiple solid tumors					Collaboration	MediLink Therapeutics
Cell therapies	BNT211	CLDN6	Multiple solid tumors					Fully owned	

Infectious Diseases



* BioNTech has refined the presentation of its pipeline chart in the second quarter of 2025 to align more closely with its strategic priorities. As part of this update, programs that have been out-licensed or discontinued are no longer displayed on the pipeline chart. This adjustment is intended to provide a clearer and more focused representation of BioNTech's active pipeline of product candidates.

(1) For further details about BioNTech's rights, see elsewhere in this Prospectus.

(2) The *FixVac* platform is fully owned by BioNTech. The BNT111 and BNT116 Phase 2 trials are jointly conducted with Regeneron as part of a cost-sharing strategic collaboration.

(3) A member of the Roche group.

(4) Trial ongoing in China only.

(5) Part of a Phase 2/3 clinical trial.

(6) Trial is currently being conducted by or on behalf of BioNTech. Bristol Myers Squibb holds co-exclusive rights to BNT327.

(7) Coalition for Epidemic Preparedness Innovations.

Our clinical and scientific research and development activities are led by Prof. Ugur Sahin, M.D. and Prof. Özlem Türeci, M.D. who, together with Prof. Christoph Huber, M.D., co-founded BioNTech in 2008. We have been conducting fundamental research of mRNA technologies in the field of individualized cancer medicine for more than a decade. Some of our colleagues, including our co-founders, have been researching and developing mRNA-based vaccines for more than 25 years. As of December 31, 2024, we had 734 employees working in clinical research & development and 2,030 working in scientific research & development. Our key technical staff has relevant expertise in immunology, deep genomics, and artificial intelligence in the areas of oncology and infectious disease, among other fields, including clinical and scientific research and development, manufacturing in the pharmaceutical industry, data science. Out of our total workforce of 6,772 full-time equivalent employees as of December 31, 2024, 1,282 hold a doctoral degree or higher, mainly in fields directly relevant to our research areas. We encourage scientific publications, and many of our key findings are published in peer reviewed journals.

11.3.2.1 Oncology Programs

11.3.2.1.1 mRNA Product Candidates in Oncology

a) FixVac

FixVac is our fully owned, systemic, off-the-shelf mRNA-based cancer immunotherapy approach, from which we are developing several potential first-in-class product candidates. *FixVac* product candidates contain our optimized uridine-RNA delivered in our proprietary RNA-lipoplex nanoparticles, or "**RNA-LPX**", formulation for intravenous administration. The proprietary RNA-LPX protects the RNA from degradation by RNAse and is designed for RNA delivery into antigen-presenting cells in lymphoid organs body-wide. *FixVac* candidates are designed to target shared antigens that have been identified to be frequently expressed across patients with a specific cancer type. These product candidates are designed to trigger both innate and adaptive immune responses.

BNT111 in Advanced Melanoma

BNT111 is designed to elicit an immune response to four antigens (NY-ESO-1, MAGE-A3, tyrosinase, TPTE) that have each been found to be associated with cutaneous melanoma.

A randomized Phase 2 clinical trial (BNT111-01; NCT04526899) is being conducted in collaboration with Regeneron Pharmaceuticals Inc., or "**Regeneron**", to evaluate BNT111 in combination with cemiplimab in 184 enrolled patients with anti-PD-(L)1 refractory/relapsed, unresectable Stage III or IV melanoma. The primary endpoint is objective response rate, or "**ORR**". Secondary endpoints include duration of response, or "**DOR**", disease control rate, or "**DCR**", time to response, or "**TTR**", progression-free survival, or "**PFS**", overall survival, or "**OS**", and safety.

In October 2025, data from this trial were presented at the 2025 ESMO Congress. The trial met its primary efficacy outcome measure, demonstrating a statistically significant improvement in ORR in patients treated with BNT111 in combination with cemiplimab, as compared to a historical control in heavily pretreated anti-PD-(L)1 relapsed or refractory advanced or metastatic cutaneous melanoma. BNT111 indicated clinical activity as monotherapy, and showed a manageable safety profile as a single agent and in combination. No further development of BNT111 in advanced melanoma is currently planned.

*BNT113 in Human Papilloma Virus 16-positive, or "**HPV16+**", Head and Neck Cancer*

BNT113 contains two different RNAs encoding the two HPV16 oncoproteins E6 and E7, which are exclusively expressed in pre-malignant and malignant tissue. The global incidence of HPV-associated cancers has been increasing, particularly HPV16+ head and neck squamous cell carcinoma, or "**HNSCC**"**,** in younger populations. Most patients with HPV16+ HNSCC are diagnosed at more advanced clinical stages. We see a significant opportunity to improve the treatment landscape with BNT113 given that it has the potential to augment clinical responses in patients being treated with checkpoint inhibitors.

A global, randomized Phase 2/3 clinical trial (AHEAD-MERIT; NCT04534205) is being conducted to evaluate BNT113 in combination with pembrolizumab versus pembrolizumab monotherapy as a first-line treatment in patients with unresectable recurrent or metastatic, PD-L1+, HPV16+ HNSCC. Phase 2 of the trial is a non-randomized run-in portion designed to demonstrate the safety of the combination of BNT113 and pembrolizumab. Phase 3 of the trial is the randomized portion of the trial designed to generate efficacy and safety data. The trial plans to enroll a total of 350 patients.

In September 2024, an exploratory analysis of antitumor activity (15 patients) and immunogenicity from the safety run-in of AHEAD-MERIT was presented at the 2024 Congress of the European Society of Medical Oncology, or "**ESMO**". The ORR was found to be 40.0% as assessed by blinded independent central review, or "**BICR**", and 33.3% as assessed by the investigator, and a medium PFS, or "**mPFS**", of 3.9 months as per BICR and 6.0 months as per investigator. BNT113 was observed to induce de novo T-cell responses against HPV16 E6 and E7 oncoproteins. The combination of BNT113 and pembrolizumab was well tolerated. Treatment emergent adverse events, or "**TEAEs**", were mostly Grade 1 and 2. In summary, the safety run-in cohort of the ongoing AHEAD-MERIT trial supported the tolerability of BNT113 and clinical activity in combination with pembrolizumab was observed.

*BNT116 in Advanced Non-small Cell Lung Cancer, or "**NSCLC**"*

BNT116 is comprised of six different NSCLC-associated tumor-associated antigens for the induction of polyepitopic anti-tumor CD8+ and CD4+ T cell responses. BNT116 is being evaluated in two clinical trials as monotherapy and in combination with other immunotherapies, antibody-drug conjugates and chemotherapies in patients with NSCLC.

A randomized, controlled Phase 2 clinical trial (EMPOWERVAX Lung-1; NCT05557591) is being conducted in collaboration with Regeneron to evaluate BNT116 in combination with cemiplimab versus cemiplimab alone as first-line treatment of patients with advanced NSCLC whose tumors express PD-L1 in ≥ 50% of their tumor cells. The primary objective of the Phase 2 trial is to assess the ORR per blinded-independent review committee.

A Phase 1 clinical trial (LuCa-MERIT-1; NCT05142189) is being conducted to evaluate the safety, tolerability and preliminary efficacy of BNT116 as monotherapy and in several combinations including with chemotherapy, cemiplimab, and some of our proprietary assets across various treatment lines and clinical settings in patients with NSCLC. In May 2025, the first patient was dosed in a new cohort evaluating BNT116 in combination with our and DualityBio's B7-H3 antibody-drug conjugate, BNT324/DB-1311. In September 2025, the first patient was dosed in a new cohort in the LuCa-MERIT-1 clinical trial to evaluate BNT116 in combination with pumitamig.

In April 2024, data from cohort 3 of the Phase 1 trial were presented at the American Association for Cancer Research, or "**AACR**", Annual Meeting. Patients were treated with BNT116 in combination with docetaxel after progression on a PD-1/PD-L1 inhibitor and a platinum-based chemotherapy. Preliminary data of BNT116 in combination with docetaxel showed encouraging antitumor activity, consistent induction of immune responses, a manageable safety profile, and no signs of additive toxicity. Combination therapy with BNT116 and docetaxel was observed to have an ORR of 30% and a DCR of 85%.

In November 2024, data from cohort 2 of the Phase 1 trial were presented at the Society for Immunotherapy of Cancer, or "**SITC**", Annual Meeting. Patients were treated with BNT116 in combination with cemiplimab. Safety and clinical activity of BNT116+cemiplimab in NSCLC with PD-L1≥50% progressing after at least stable disease, on PD-1 inhibitor-based first-line treatment was reported. Preliminary data of BNT116 in combination with cemiplimab showed a manageable safety profile, an encouraging DCR of 80% and median PFS of 5.5 months in patients previously progressing on PD-1 inhibition.

In April 2025, at the AACR Annual Meeting 2025, data from a cohort with frail patients from the Phase 1 trial described above were presented. The preliminary data showed anti-tumor activity, consistent immune response induction and a manageable safety profile in patients with PD-L1 positive (TPS≥1%) unresectable Stage III or metastatic Stage IV NSCLC who are not eligible for chemotherapy as first-line treatment.

In September 2025, data were presented at the 2025 World Congress on Lung Cancer, or "**WCLC**", from a cohort evaluating BNT116 in combination with cemiplimab as consolidation treatment in patients with NSCLC after receiving concurrent chemoradiotherapy. BNT116 in combination with cemiplimab demonstrated encouraging event-free and overall survival rates and a manageable safety profile.

*b) Autogene Cevumeran (BNT122/RO7198457), an Individualized Neoantigen Specific Immunotherapy, or "**iNeST**"*

Autogene cevumeran is an investigational individualized cancer immunotherapy based on specific neoantigens that are present on a patient's tumor. As to our FixVac programs, our iNeST approach is also based on pharmacologically optimized uridine mRNA, or "**uRNA**", delivered in our proprietary RNA-LPX formulation. The RNA-LPX is designed to deliver RNA to dendritic cells, or "**DCs**", the antigen-presenting cells in the lymphoid organs that are crucial for the initiation of adaptive immune responses, and protects RNA from degradation by RNAse. iNeST candidates are informed by the mutation profile of a patient's individual tumor and manufactured on-demand. The RNA encodes a unique composition of neoantigens selected on a patient-by-patient basis and results in generation of neoantigen specific CD4+ and CD8+ T cell responses against the respective neoantigens. The aim of this approach is to generate and amplify anti-tumor immune responses and thus broaden the spectrum of tumor targets that can be recognized by the immune system, which is a prerequisite for clinical activity.

Since 2014, autogene cevumeran has been researched in clinical trials including the IMCODE study program which was initiated in 2017 to further advance the research and development of individualized neoantigen-specific immunotherapies. The study program is designed broadly to evaluate autogene cevumeran in various treatment settings and multiple solid tumor indications, including treatment of early and late-stage cancers. The aim of the program is to study potential treatment settings and patient populations that could benefit most from individualized mRNA cancer immunotherapy. Data generated to date indicate that autogene cevumeran is highly proficient in inducing and expanding high-magnitude and long-lived T cell responses across various tumor types and treatment settings (Lopez, J. et al., 2025). Furthermore, early clinical data from a small size patient cohort indicate that autogene cevumeran alone and in combination with anti-PD-(L)1 treatment can elicit T cell responses that persist up to three years in the adjuvant treatment of pancreatic ductal adenocarcinoma, potentially correlating with delayed disease recurrence (Sethna, Z. et al., 2025).

Based on the available data, we decided to pursue autogene cevumeran as one of our priority pan-tumor programs in our oncology portfolio to address one of the biggest challenges in oncology, which is preventing disease recurrence. Therefore, with this approach we aim to address the unmet medical need in the treatment of resectable cancers and in adjuvant or minimal residual disease treatment settings where the tumor burden is typically low and immune resistance mechanisms are not fully

established. We believe individualized mRNA cancer immunotherapies have the potential to change the current standard of care and improve overall survival by delaying or preventing recurrence or cancer metastasis. Consequently, BioNTech and Genentech have focused on initiating multiple clinical trials as part of the IMCODE study program with autogene cevumeran in high unmet medical need indications in the adjuvant setting, with currently three ongoing randomized clinical trials.

Autogene cevumeran is partnered with Genentech as part of a collaboration.

*Ongoing Phase 2 Clinical Trial in Adjuvant Colorectal Cancer, or "**CRC**"*

A randomized, open-label Phase 2 clinical trial (BNT122-01; NCT04486378) evaluating autogene cevumeran as an adjuvant treatment of circulating tumor DNA, or "**ctDNA**", positive, surgically resected Stage II (high risk)/Stage III CRC is ongoing. The trial is expected to enroll about 327 patients to evaluate the efficacy of autogene cevumeran compared to watchful waiting after surgery and chemotherapy, which is the current standard of care for these high-risk patients. The primary endpoint for the trial is disease-free survival, or "**DFS**". Secondary objectives include OS and safety.

In June 2024, at the Annual Meeting of the American Society of Clinical Oncology, or "**ASCO**", preliminary epidemiologic data were presented, including post-operative ctDNA prevalence and prognostic value in disease-free survival, from an observational study (NCT04813627) in patients with resected high-risk stage II/III CRC. This observational study provides supportive epidemiological and prognostic data for the ongoing interventional Phase 2 clinical trial (NCT04486378).

Also in June 2024, at the ESMO Gastrointestinal Cancers Congress, immunogenicity data of the biomarker cohort of the ongoing Phase 2 (NCT04486378) that enrolled patients irrespective of post-surgical ctDNA status were presented. The data suggest that autogene cevumeran is highly immunogenic and induces de novo polyepitopic, ex vivo detectable T-cell responses in all evaluable patients with resected Stage II/III CRC after completion of adjuvant chemotherapy. Among patients included in the immunogenicity analysis, 100% (12/12) were disease-free at data cut off.

At the first pre-specified interim analysis of the ongoing BNT122-01 Phase 2 clinical trial (NCT04486378) evaluating autogene cevumeran (BNT122/RO7198457), an individualized neoantigen specific immunotherapy candidate, for the adjuvant treatment of patients with ctDNA-positive, resected Stage II (high risk) and Stage III colorectal cancer, the futility boundary has been crossed.

The clinical trial is evaluating the efficacy of autogene cevumeran compared to watchful waiting, the current standard of care for these high-risk patients, with the aim to investigate whether an individualized mRNA cancer immunotherapy can prevent relapses after primary treatment of surgical resection of the tumor and completion of adjuvant chemotherapy. The primary endpoint for the trial is disease-free survival (DFS), which is an event-driven endpoint. Secondary objectives include relapse-free survival (RFS), overall survival (OS) and safety.

The interim analysis was reviewed by an independent Data and Safety Monitoring Board (DSMB) which is responsible for overseeing the safety and integrity of the trial. The DSMB considered autogene cevumeran to be generally well tolerated with no new safety signals identified, and also indicated that the data is not yet mature enough to draw reliable conclusions about efficacy, with a median follow-up time for participants at the time of the analysis was approximately nine months, which is insufficient to evaluate the trial's primary endpoint. This assessment is consistent with recently published data from a study by Nakamura et al. (2024), which showed that a majority of patients with ctDNA-positive colorectal cancer experience disease recurrence within 24 months after surgery.

However, because the futility boundary was crossed, the DSMB was bound by its charter to make a nonbinding recommendation to terminate the study.

Based on this assessment that the data are not yet mature enough to draw reliable conclusions about efficacy, BioNTech has determined to continue the trial in accordance with the protocol. The sponsor will remain masked, and interim data will not be disclosed at this time ensuring the integrity of the ongoing trial and allowing for a comprehensive and mature assessment of the treatment's efficacy at the final analysis of the trial. The DSMB had no objections with the continuation of the study in the absence of safety concerns.

*Ongoing Phase 2 Clinical Trial in Adjuvant High-risk Muscle-invasive Urothelial Carcinoma, or "**MIUC**"*

A Phase 2 clinical trial (IMCODE-004; NCT06534983) evaluating autogene cevumeran as an adjuvant treatment in combination with nivolumab in patients with high-risk MIUC is currently recruiting.

In December 2024, the first patient was treated. The trial aims to enroll approximately 362 patients to evaluate the efficacy of autogene cevumeran in combination with nivolumab compared to nivolumab alone. The primary endpoint for the trial is investigator-assessed DFS. Secondary endpoints include OS and safety.

*Ongoing Phase 2 Clinical Trial in Adjuvant Pancreatic Ductal Adenocarcinoma, or "**PDAC**"*

A Phase 2 clinical trial (IMCODE003; NCT05968326) evaluating autogene cevumeran in combination with atezolizumab followed by standard-of-care chemotherapy (mFOLFIRINOX) in patients with resected PDAC compared to chemotherapy alone is ongoing. The Phase 2 trial is expected to enroll 260 patients with resected PDAC who have not received prior systemic anti-cancer treatment and showed no evidence of disease after surgery. The primary endpoint is DFS. Secondary endpoints include OS and safety.

In April 2024, at the AACR Annual Meeting, long-term follow-up data were presented from an investigator-initiated Phase 1 trial (NCT04161755) in patients with resected PDAC indicating that autogene cevumeran continues to show polyspecific T-cell responses up to three years after vaccination and that immunotherapy-specific response correlates with delayed tumor recurrence. At the third year, autogene cevumeran was observed to induce de novo neoantigen-specific, functional and durable CD8 T cells at substantial magnitudes for multiple neoantigens. After a median follow-up of three years, eight patients with immunotherapy-induced T-cell responses continued to have longer median recurrence-free survival (not reached) compared with those who did not experience an immune response (13.4 months). The investigator-initiated, single center Phase 1 trial evaluated the safety of autogene cevumeran in sequential combination with the anti-PD-L1 immune checkpoint inhibitor atezolizumab and standard-of-care chemotherapy in 16 patients with resected PDAC. Data from the 1.5-year median follow-up had been published in Nature (Rojas, L.A. et al., 2023).

In February 2025, longer-term follow up data from the investigator-initiated, single center Phase 1 trial in PDAC were published in Nature (Sethna, Z. et al., 2025).

Phase 2 Clinical Trial in First-line Advanced Melanoma

The IMCODE001 (NCT03815058) trial was the first randomized Phase 2 clinical trial with an iNeST-based candidate as part of the broader IMCODE study program. The trial evaluated the efficacy and safety of autogene cevumeran in combination with pembrolizumab versus pembrolizumab alone as a potential first-line treatment for patients with previously untreated advanced melanoma. The primary endpoint was progression free survival, or "**PFS**", and was events-based. Secondary endpoints included OS, ORR, DOR and safety.

In January 2025, the IMCODE001 trial was completed. While the initial data of the primary analysis support our findings across the broader autogene cevumeran study program demonstrating that autogene cevumeran can induce and expand high-magnitude and long-lived de novo immune responses against the encoded neoantigens in this aggressive stage of melanoma, the trial did not meet its primary efficacy endpoint of statically significant improvement of PFS in this advanced treatment setting. A numerical trend favoring the combination arm in OS was observed. The combination of autogene cevumeran with PD-L1 checkpoint blockade was well tolerated and adverse events were consistent with the known safety profiles of the individual trial treatments, with no new safety signals observed. The analysis of the results of the IMCODE001 trial, including further exploratory endpoints and extensive biomarker correlations, is ongoing.

In October 2025, data from this trial were presented at the 2025 European Society For Medical Oncology, or ESMO, Congress. In addition to the previous data disclosures, a trend of improved OS was observed in patients with low tumor mutation burden tumors with the autogene cevumeran combination treatment compared to pembrolizumab alone. We believe these data support proof of concept for our mRNA cancer immunotherapy approach and our therapeutic strategy to pursue autogene cevumeran to address the unmet medical need in the treatment of resectable cancers and in adjuvant or minimal residual disease treatment settings.

Autogene Cevumeran (BNT122/RO7198457) in Multiple Solid Tumors

In July 2025, the Phase 1 clinical trial (NCT03289962) evaluating autogene cevumeran alone and in combination with atezolizumab in patients with locally advanced or metastatic solid tumors, including patients with melanoma, NSCLC, bladder cancer, CRC, triple negative breast cancer, or "**TNBC**", renal cancer, head and neck cancer and sarcomas as well as other solid tumors was completed.

In January 2025, a manuscript summarizing the results of the trial was published in Nature Medicine (Lopez, J. et al., 2025).

c) RiboMab

Our *RiboMab* product candidate is an mRNA that encodes cancer cell targeting antibodies. This fully-owned product candidate is nucleoside-modified to minimize immunogenicity and our improved mRNA backbone designs with the aim to maximize protein expression. Our *RiboMab* product candidate is formulated using liver-targeting lipid nanoparticles, or "**LNPs**", for intravenous delivery. This RNA-LNP technology is designed to address the challenges of recombinantly expressed proteins, including limited serum half-life and manufacturing process challenges.

BNT142 in Multiple Solid Tumors

BNT142 encodes a T-cell engaging bispecific antibody targeting Claudin 6, or "**CLDN6**" and CD3. An exploratory open-label, multi-site Phase 1/2 clinical trial (NCT05262530) in patients with CLDN6-positive advanced solid tumors that have exhausted available standard therapy or are not eligible for such available therapy is ongoing with the last patient visit expected before year-end 2025.

In May 2025, data from this trial were presented in an oral presentation at the 2025 American Society of Clinical Oncology, or ASCO, Annual Meeting which took place in Chicago, Illinois from May 30 - June 3, 2025. Preliminary data indicated a manageable safety profile and early signs of clinical activity, supporting scientific proof-of-principle and underscoring the potential of mRNA-encoded bispecific antibodies.

d) RiboCytokines

Our *RiboCytokine* product candidates are designed to address the limitations of recombinantly expressed cytokines, including limited serum half-life and production costs. BNT152+153 are nucleoside-modified mRNAs encoding human cytokines fused to human serum albumin. The modified mRNA is formulated with liver-targeting LNPs for intravenous delivery. BNT152 encodes IL-7, and BNT153 encodes IL-2.

BNT152+BNT153 in Multiple Solid Tumors

An open-label, multi-site, first-in-human Phase 1 clinical trial (NCT04710043) in multiple solid tumor indications to evaluate the safety, pharmacokinetics, pharmacodynamics and preliminary anti-tumor activity of a combination of BNT152 and BNT153 has been completed.

11.3.2.1.2 Oncology Cell Therapy Product Candidates

*BNT 211, a Chimeric Antigen Receptor, or "**CAR**", T-cell therapy - CAR-T*

BNT211 consists of two investigational medicinal products: our first CAR-T-cell product candidate, which targets CLDN6-positive solid tumors, in combination with an mRNA named CARVac (CLDN6 RNA-LPX) encoding CLDN6. The CAR-T cells are equipped with a second-generation CAR of high sensitivity and specificity for the tumor-specific carcino-embryonic antigen CLDN6. CARVac is intended to support in vivo expansion of transferred CAR-T cells to increase their persistence and efficacy. BNT211 has been granted Priority Medicines, or "**PRIME**", designation by the EMA for the third- or later-line treatment of testicular germ cell tumors, and Regenerative Medicine Advanced Therapy, or "**RMAT**", designation by the FDA.

A first-in-human, open-label, multi-site Phase 1 dose escalation clinical trial (NCT04503278) is being conducted to evaluate BNT211 as monotherapy or in combination with CARVac in patients with CLDN6-positive relapsed or refractory solid tumors, including non-small cell lung cancer, gastric cancer, ovarian cancer and testicular germ cell tumors.

In June 2024, we presented an analysis of real-world data that investigated the OS, treatment patterns and prognostic variables of patients with testicular germ cell tumors receiving palliative chemotherapy at the ASCO Annual Meeting.

In September 2024, data from the ongoing trial were presented at the ESMO Congress which showed encouraging signs of antitumor activity across indications. Among patients who received dose levels of 1x108 CAR T cells or above with or without CARVac,ORR was observed to be 41.7% for patients with testicular cancer and 58.3% for those with ovarian cancer. CARVac was shown to improve CAR-T persistence in some patients. The data also suggest that the safety profile of CLDN6 CAR T cells with and without CARVac is consistent with the previously published effects of CAR-T therapies and that repeated CARVac administration does not significantly increase toxicity.

In January 2025, the FDA granted RMAT designation for BNT211. The RMAT designation is designed to expedite the development and review process for promising pipeline products, including cell therapies.

We have decided not to proceed with Phase 2 clinical development of BNT211 in germ cell tumors in alignment with our active portfolio prioritization.

11.3.2.1.3 Antibody Product Candidates in Oncology

a) Next-Generation Immunomodulators

We are developing, in collaboration with our partners, antibodies that are designed to function as mono- or bispecific immunomodulators.

i) BNT327, a Bispecific Antibody Candidate Targeting PD-L1 and VEGF-A

BNT327 is a bispecific antibody candidate targeting both PD-L1 and VEGF-A, which was previously being developed in collaboration with Biotheus. In February 2025, we announced the completion of our acquisition of Biotheus. With the acquisition, we obtained full global rights to the late-stage clinical asset BNT327. In June 2025, we entered into a Global Co-Development and Co-Commercialization Agreement with Bristol-Myers Squibb to jointly develop, manufacture and commercialize our investigational bispecific antibody BNT327 across numerous solid tumor types.

BNT327 is currently being evaluated in multiple Phase 2 and Phase 3 global and China-only clinical trials to assess its efficacy and safety as monotherapy or in combination with chemotherapy in various indications. BNT327 is also being evaluated in combination with next-generation ADC candidates BNT323/DB-1303, BNT324/DB13-11, BNT325/DB-1305, BNT326/YL202, BNT3212, and in combination with bispecific candidates BNT3213 and BNT314/GEN1059 and in combination with mRNA cancer immunotherapy BNT116.

*Ongoing Phase 3 Clinical Trial in First-Line Extensive-Stage Small Cell Lung Cancer, or "**ES-SCLC**"*

A global Phase 3 clinical trial (ROSETTA Lung-01; NCT06712355) is being conducted to evaluate BNT327 in combination with chemotherapy compared to atezolizumab in combination with chemotherapy in patients with first-line ES-SCLC. In June 2025, a trial-in-progress poster on this clinical trial was presented at the 2025 ASCO Annual Meeting.

In June 2025, BNT327 received Orphan Drug Designation from the FDA for the treatment of small cell lung cancer.

*Ongoing Phase 3 Clinical Trial in Second-Line Small-Cell Lung Cancer, or "**SCLC**"*

A Phase 3 clinical trial (NCT06616532) is being conducted in China to evaluate BNT327 in combination with chemotherapy compared to investigator's choice chemotherapy in patients with second-line SCLC.

Ongoing Phase 2 Clinical Trial in ES-SCLC

A Phase 2 clinical trial (NCT06449209) is being conducted to evaluate BNT327 in combination with chemotherapy in patients with untreated ES-SCLC and in patients with SCLC that progressed after first- or second-line treatment. The trial is fully enrolled and treatment is ongoing. Data from this trial is expected in 2025.

In September 2025, interim data from this trial were presented at the 2025 WCLC meeting in Barcelona, Spain. The data, which are consistent with data presented at European Lung Cancer Congress (ELCC) 2025 from a Phase 2 trial conducted in China (NCT05844150), showed encouraging anti-tumor responses and progression free survival. BNT327 plus chemotherapy demonstrated an acceptable and manageable safety profile with no new safety signals and a low discontinuation rate.

Ongoing Phase 2 Clinical Trial in First-Line ES-SCLC

A Phase 2 clinical trial (NCT05844150) is being conducted in China to evaluate BNT327 in combination with chemotherapy in patients with first-line ES-SCLC.

In March 2025, data from this trial were presented at the 2025 European Lung Cancer Congress, or "**ELCC**", in Paris, France. Preliminary data showed anti-tumor activity and an acceptable safety profile with no new safety signals beyond those typically described for chemotherapy agents and anti-PD-(L)1 and anti-VEGF monotherapies. These data were the first presented for BNT327 as a potential first-line treatment in ES-SCLC supporting the ongoing global randomized Phase 3 clinical trial ROSETTA Lung-01 (NCT06712355).

Ongoing Phase 2 Clinical Trial in Second-Line SCLC

A Phase 2 clinical trial (NCT05879068) is being conducted in China to evaluate BNT327 in combination with chemotherapy in patients with second-line SCLC.

In March 2025, data from this trial were presented at the 2025 ELCC. Preliminary data showed anti-tumor activity, which was observed regardless of prior immuno-oncology treatment, and an acceptable safety profile.

Ongoing Phase 2/3 Clinical Trial in First-Line NSCLC

A global Phase 2/3 clinical trial (ROSETTA Lung-02; NCT06712316) is being conducted to evaluate BNT327 in combination with chemotherapy compared to pembrolizumab and chemotherapy in patients with first-line NSCLC. In June 2025, a trial-in-progress poster on this clinical trial was presented at the 2025 ASCO Annual Meeting.

Ongoing Phase 2 Clinical Trial in Second-Line NSCLC

A Phase 2 clinical trial (NCT06841055) is being conducted to evaluate BNT327 in combination with chemotherapy in patients with second-line NSCLC.

Ongoing Phase 2 Clinical Trial in EGFR-mutant Non-Squamous NSCLC

A Phase 2 clinical trial (NCT05756972) is being conducted in China to evaluate BNT327 in combination with chemotherapy in patients with EGFR-mutant non-squamous NSCLC who progressed after EGFR-tyrosine kinase inhibitor treatment.

In September 2024, at the ESMO Congress, data from the trial were presented. The 64 patients were observed to have an ORR of 60.9%, a confirmed ORR, or "**cORR**", of 57.8% and DCR of 95.3%. In the 28 patients with PD-L1 tumor proportion score, or "**TPS**", <1%, the ORR was observed to be 46.4% and DCR was observed to 92.9%. In the 23 patients with TPS 1-49%, the ORR was observed to be 60.9% and DCR was observed to be 100%. Among the 13 patients with TPS ≥50%, the ORR was observed to be 92.3% and DCR was observed to be 92.3%. Any-grade TRAEs occurred in 98.4% patients and Grade ≥ 3 TRAEs occurred in 60.9% of patients. Nine patients discontinued BNT327 and/or chemotherapy administration due to TRAEs, plus one case of TRAE-related death. In summary, we believe that the observations of BNT327 in combination with chemotherapy in mutated NSCLC patients that progressed on prior EGFR-tyrosine kinase inhibitor, or "**TKI**" therapy showed encouraging anti-tumor activity independent of PD-L1 expression levels with a positive correlation seen between higher tumor PD-L1 expression levels and overall response rates, and a generally manageable safety profile.

Phase 3 Clinical Trial in Locally Advanced or Metastatic First-Line TNBC

A Phase 3 clinical trial (NCT07173751) evaluating pumitamig in combination with chemotherapy compared to chemotherapy alone as a first-line treatment for patients with PD-L1 combined positive score "CPS" ≤ 10 TNBC (ROSETTA Breast-01) is expected to start in 2025.

Ongoing Phase 3 Clinical Trial in Locally Advanced or Metastatic First-Line TNBC

A Phase 3 clinical trial (NCT06419621) is being conducted in China to evaluate BNT327 in combination with chemotherapy compared to chemotherapy alone in patients with first-line locally advanced or metastatic TNBC.

Ongoing Phase 2 Clinical Trial in Locally Advanced or Metastatic TNBC

A Phase 2 clinical trial (NCT06449222) is being conducted to evaluate BNT327 in combination with chemotherapy in patients with first- and second-line locally advanced or metastatic TNBC. Data from this trial is expected in 2025.

Ongoing Phase 1/2 Clinical Trial in Locally Advanced/Metastatic TNBC

A Phase 1/2 clinical trial (NCT05918133) is being conducted in China to evaluate BNT327 in combination with chemotherapy in patients with locally advanced or metastatic TNBC without previous systematic treatment.

In September 2024, at the ESMO Congress, data from the trial were presented. The 42 patients were observed to have an ORR of 78.6%, a cORR, of 73.8% with a DCR of 95.2%, an mPFS of 13.5 months and a mDOR of 11.7 months. Among the 42 patients treated, 38 patients had available PD-L1 expression results assessed by means of a PD-L1 immunohistochemistry, or "**IHC**", E1L3N assay. cORR was observed to be 76.9% in 13 patients with PD-L1 combined positive scores, or "**CPS**", <1, 56.3% in the 16 patients with PD-L1 1≤CPS<10, and 100% in the nine patients with PD-L1 CPS≥10. Any-grade and Grade ≥3 TRAEs of the combination regimen occurred in 100% and 57.1% of patients, respectively. TRAEs leading to treatment discontinuation occurred in 4.8% of patients. The most common TRAEs included neutropenia, leukocytopenia, anemia, proteinuria and alopecia. In summary, first line treatment of locally advanced/metastatic TNBC with BNT327 in combination with nab-paclitaxel was observed to be associated with clinically meaningful antitumor activity regardless of PD-L1 status and manageable toxicity with no new safety signals observed beyond those typically described for anti-PD-(L)1 therapies, anti-VEGF therapies and chemotherapy.

In December 2024, at the San Antonio Breast Cancer Symposium updated data were presented from the trial. In 42 patients with locally advanced or metastatic TNBC, first-line therapy with BNT327 combined with nab-paclitaxel showed clinically meaningful survival outcomes and antitumor activity regardless of PD-L1 status, together with a manageable safety profile. The confirmed ORR was 73.8% with a DCR of 95.2%. The median TTR was 1.9 months and the mDOR was 11.7 months. The matured mPFS was 13.5 months for the intention to treat the population. The median OS was not reached, while the matured 12-month OS rate was 80.8%, the matured 15-month OS rate was 78.1%, and the nearly matured 18-month OS rate was 69.7%.

Phase 2 Clinical Trial in Metastatic First-Line CRC

In August 2025, the first patient was dosed in a Phase 2 clinical trial (NCT07133750) being conducted in China to evaluate pumitamig in combination with chemotherapy in patients with first line microsatellite stable, or MSS, or Microsatellite Instability-Low and Proficient Mismatch Repair, or MSI-L/pMMR, metastatic colorectal cancer.

*Ongoing Phase 2 Clinical Trial in Malignant Mesothelioma, or "**MPM**"*

A Phase 2 clinical trial (NCT05918107) is being conducted in China to evaluate BNT327 in combination with chemotherapy in patients with first-line malignant mesothelioma.

In June 2025, the first data from this trial were presented in an oral presentation at the 2025 ASCO Annual Meeting. The preliminary data indicated anti-tumor activity and a manageable safety profile.

*Ongoing Phase 2 Clinical Trial in Neuroendocrine Neoplasm, or "**NEN**"*

A Phase 2 clinical trial (NCT05879055) is being conducted in China to evaluate BNT327 in combination with chemotherapy in patients with second-line NEN.

*Ongoing Phase 2 Clinical Trial in Hepatocellular Carcinoma, or "**HCC**"*

A Phase 2 clinical trial (NCT05864105) is being conducted in China to evaluate BNT327 in combination with chemotherapy as a first-line treatment for unresectable HCC.

Ongoing Phase 1/2 Clinical Trial in Advanced Solid Tumors

A Phase 1/2 clinical trial (NCT05918445) is being conducted in China to evaluate BNT327 as a monotherapy in patients with advanced solid tumors.

In June 2024, data from the trial were presented at the ASCO Annual Meeting. Data on 48 patients with advanced cervical cancer, or "**CC**", showed an ORR of 42.2% (52.4% in patients with PD-L1-positive tumors), a DCR of 93.3%, and an mPFS of 8.3 months. Data on 39 patients with PROC showed an ORR of 20.6%, a DCR of 67.7%, and an mPFS of 5.5 months. TRAEs occurred in 95.4% of patients (83/87), with ≥ Grade 3 TRAEs in 36.8% (32/87). 14.9% (13/87) of patients discontinued BNT327 treatment due to TRAEs. Median follow-up time in patients with CC and PROC was 13.8 months and 14.8 months, respectively.

At the 2024 ASCO Annual Meeting, data on 61 patients with non-squamous NSCLC were also presented. Data on 17 evaluable patients with untreated NSCLC wild-type and PD-L1-positive showed an ORR of 47.1%, a DCR of 100% and an mPFS of 13.6 months at a median follow-up of 11.3 months. Data on 36 evaluable patients with EGFR-mutant NSCLC after progression on prior EGFR-TKI treatment showed an ORR of 19.4%, a DCR of 69.4% and an mPFS of 5.5 months at a median follow-up of 12.6 months. Data from eight evaluable patients with EGFR/ALK wild-type NSCLC that progressed after anti-PD-1/L1 therapy and platinum-based chemotherapy showed an ORR of 12.5%, a DCR of 62.5%, and an mPFS of 5.8 months at a median follow-up of 5.8 months. TRAEs occurred in 85.2% of patients (52/61), with ≥ Grade 3 TRAEs in 19.7% (12/61). Serious adverse events were observed in 24.6% (15/61) of patients, and 8.2% (5/61) of patients discontinued BNT327 treatment due to TRAEs.

In September 2024, at the ESMO Congress, data from the trial were presented. 28 patients with clear cell RCC, or "**ccRCC**", who progressed after combination of anti-PD-(L)1 and VEGF-TKI therapy or VEGF-TKI monotherapy, were observed to have an ORR of 25%, a DCR of 82.1%, a mPFS of 10.9 months and a median duration of response, or "**mDOR**", of 19.6 months. The 22 patients with previously untreated non-clear cell RCC, or "**nccRCC**", were observed to have an ORR of 36.4%, a DCR of 90.9% and a mPFS of 15.1 months. Any-grade and Grade ≥3 TRAEs of the combination regimen occurred in 100% and 41.5% of patients, respectively. TRAEs leading to treatment discontinuation occurred in 1.9% of patients. In summary, BNT327 monotherapy was observed to have encouraging anti-tumor activity and a manageable safety profile in patients with previously untreated advanced nccRCC or previously treated advanced ccRCC.

Ongoing Phase 1/2 Clinical Trial in First Line HCC

A Phase 1/2 clinical trial (NCT06584071) is being conducted in China to evaluate BNT327 in combination with BNT3213, a novel bispecific antibody candidate targeting TIGIT and PCRIG, in patients with locally advanced or metastatic HCC.

Ongoing Combination with BNT323/DB-1303 Phase 1/2 Clinical Trial in Advanced/Metastatic Breast Cancer

In May 2025, the first patient was dosed in a Phase 1/2 clinical trial (NCT06827236) evaluating BNT323/DB-1303 in combination with BNT327 in patients with hormone receptor-positive (HR+) or hormone receptor-negative (HR-), human epidermal growth factor (HER)2-low, ultra-low, or null advanced metastatic breast cancer or TNBC.

Ongoing Combination with BNT324/DB-1311 Phase 1/2 Clinical Trial in Advanced Lung Cancers

In May 2025, the first patient was dosed in a Phase 1/2 clinical trial (NCT06892548) evaluating BNT324/DB-1311 in combination with BNT327 in patients with advanced lung cancers. A trial-in-progress poster was presented at the 2025 WCLC.

Ongoing Combination with BNT324/DB-1311 Phase 2 Clinical Trial in Advanced/Metastatic Solid Tumors

In July 2025, the first patient was dosed in a Phase 2 clinical trial (NCT06953089) evaluating BNT324/DB-1311 in combination with BNT327 or with TROP2 ADC candidate BNT325/DB-1305 in patients with advanced solid tumors.

Ongoing Combination with BNT325/DB-1305 Phase 1/2 Clinical Trial in Advanced Solid Tumors

A Phase 1/2 clinical trial (NCT05438329) is being conducted to evaluate BNT325/DB-1305 in patients with advanced solid tumors. As part of this clinical trial, BNT327 is being evaluated in combination with BNT325/DB-1305 in various solid tumor indications.

In April 2025, at AACR 2025 Annual Meeting, we presented the first clinical data evaluating the combination of BNT327 and BNT325/DB-1305. The preliminary data showed a manageable safety profile and early signs of anti-tumor activity in a cohort with patients with platinum-resistant ovarian cancer, or "**PROC**". Responses were also observed in patients with NSCLC or TNBC.

Combination with BNT326/YL202 Phase 1/2 Clinical Trial in Advanced Solid Tumors

In August 2025, first patient was dosed in a Phase 1/2 clinical trial (NCT07070232) evaluating BNT326/YL202 as monotherapy and in combination with BNT327 in advanced solid tumors.

Combination with BNT326/YL202 Phase 1/2 Clinical Trial in Advanced NSCLC

In October 2025, the first patient was dosed in a Phase 1/2 clinical trial (NCT07111520) to evaluate BNT326/YL202 in combination with pumitamig in advanced NSCLC.

Combination with BNT314/GEN1059 Phase 1/2 Clinical Trial in Advanced/Metastatic colorectal cancer

In August 2025, first patient was dosed in a Phase 1/2 clinical trial (NCT07079631) evaluating BNT327 and/or chemotherapy in combination with BNT314/GEN1059 in patients with advanced colorectal cancer.

Combination with BNT3212 Phase 1/2 Clinical Trial in Advanced Solid Tumors

A Phase 1/2 clinical trial (NCT07147348) is being conducted to evaluate BNT3212, a novel bispecific antibody-drug conjugate candidate targeting EGFR and HER3, for use as monotherapy and in combination with pumitamig in patients with advanced solid tumors.

ii) BNT316/ONC-392 (gotistobart), an Anti-CTLA-4 Monoclonal Antibody Candidate in Development in Collaboration with OncoC4

BNT316/ONC-392 (gotistobart) is an anti-cytotoxic T-lymphocyte associated protein 4, or "**CTLA-4**", monoclonal antibody candidate being developed in collaboration with OncoC4. CTLA-4 is a molecule that is highly expressed by regulatory T cells in the tumor microenvironment where it inhibits T-cell immune response and reduces the activity of T cells in recognizing and eliminating cancer cells. BNT316/ONC-392 (gotistobart) is designed to offer higher anti-tumor efficacy and a differentiated safety profile that may allow for higher dosing and longer duration of treatment both as monotherapy and in combination with other therapies. The program received Fast Track Designation from the FDA in 2022.

Ongoing Phase 3 Clinical Trial in Metastatic Squamous NSCLC

A two-stage, open-label, randomized Phase 3 trial PRESERVE-003 (NCT05671510) is being conducted to evaluate the efficacy and safety of BNT316/ONC-392 (gotistobart) as monotherapy in patients with metastatic squamous NSCLC that progressed under previous platinum-based chemotherapy and PD-(L)1-inhibitor treatment. A trial-in-progress poster was presented at the 2025 WCLC meeting.

Ongoing Phase 2 Clinical Trial in Platinum Resistant Ovarian Cancer

A Phase 2 clinical trial (PRESERVE-004; NCT05446298) is being conducted to evaluate BNT316/ONC-392 (gotistobart) therapy in combination with pembrolizumab in patients with PROC. The clinical trial is designed to evaluate multiple doses of BNT316/ONC-392 (gotistobart) in combination with a fixed dose of pembrolizumab in participants with ovarian cancer who are resistant to platinum-based chemotherapy. The primary endpoints are ORR and safety. Secondary endpoints include DOR, DCR, PFS and OS. The study completed enrollment.

In September 2024, preliminary data from the ongoing trial were presented at the ESMO Congress. The data were also presented at the International Gynecologic Cancer Society Annual Global Meeting in October 2024. The data suggested encouraging preliminary clinical activity and a manageable tolerability profile with no new safety signals detected.

Ongoing Phase 1/2 Clinical Trial in Metastatic Castration-Resistant Prostate Cancer

A Phase 1/2 clinical trial (PRESERVE-006; NCT05682443) is being conducted to evaluate the safety and efficacy of BNT316/ONC-392 (gotistobart) in combination with lutetium Lu-177 vipivotide tetraxetan in patients with metastatic castration-resistant prostate cancer, or "**mCRPC**", who have disease progressed on androgen receptor pathway inhibition.

In June 2025, data from the Phase 1 part of this trial were presented at the ASCO Annual Meeting. The data indicated a manageable safety profile and preliminary clinical activity in patients with mCRPC.

Ongoing Phase 1/2 Clinical Trial in Advanced/Metastatic Solid Tumors

A Phase 1/2 open-label dose escalation clinical trial (PRESERVE-001; NCT04140526) is being conducted to evaluate BNT316/ONC-392 (gotistobart) as a single agent and in combination with pembrolizumab in patients with advanced or metastatic solid tumors.

In June 2025, at the 2025 ASCO Annual Meeting, updated data from the melanoma cohorts of the ongoing trial were presented. The trial included 67 melanoma patients who were refractory to or had relapsed following immunotherapy such as ipilimumab and nivolumab. These patients were subsequently treated with BNT316/ONC-392 (gotistobart) in combination with pembrolizumab. Notably, the regimen of BNT316/ONC-392 (gotistobart) at 3 mg/kg in combination with 200mg pembrolizumab demonstrated favorable tolerability and durable clinical benefit.

iii) BNT317, an Antibody for the Treatment of Advanced Solid Tumors

A Phase 1 clinical trial (NCT06750185) is being conducted to evaluate the safety, tolerability, pharmacokinetics, and immunogenicity of BNT317 in participants with advanced solid tumors.

iv) BNT312/GEN1042, BNT314/GEN1059, BNT315/GEN1055 and BNT322/GEN1056 are being developed in collaboration with Genmab

BNT312/GEN1042 is a novel, agonistic, bispecific antibody that combines targeting and conditional activation of the costimulatory molecules CD40 and 4-1BB on immune cells. A Phase 1/2 clinical trial (NCT04083599) is ongoing to evaluate BNT312/GEN1042 in combination with pembrolizumab with or without chemotherapy across various solid tumors. A Phase 1/2 clinical trial (NCT05491317) is ongoing to evaluate the safety and clinical activity of BNT312/GEN1042 in combination with radiotherapy with or without pembrolizumab in patients with metastatic solid tumors. A Phase 1 clinical trial (NCT06057038) is ongoing in Japan to evaluate the safety, tolerability, pharmacokinetics, pharmacodynamics and antitumor activity of BNT312/GEN1042 monotherapy and in combination with pembrolizumab with or without chemotherapy in patients with multiple solid tumors.

BNT314/GEN1059 is a potential first-in-class bispecific antibody product candidate designed to boost antitumor immune responses through epithelial cell adhesion molecule-, or "**EpCAM**"-, dependent 4-1BB agonistic activity. A Phase 1 clinical trial (NCT06150183) is being conducted to investigate the safety and preliminary antitumor activity of BNT314/GEN1059 in patients with advanced or metastatic solid tumors. Preclinical data for BNT314/GEN1059 were presented at AACR 2025 Annual Meeting. The preclinical analyses evaluated BNT314/GEN1059 in combination with PD-1 inhibition in a tumor model unresponsive to each single treatment. The data showed robust antitumor activity, delayed tumor outgrowth and prolonged survival compared to both single treatments. In addition, the immunomodulatory activity of BNT314/GEN1059 was further potentiated in combination with PD-1 blockade.

BNT315/GEN1055 is an OX40 agonist antibody designed to induce OX40 clustering independently of FcγR-mediated crosslinking to enhance antitumor T-cell responses. The development program for BNT315/GEN1055 has been discontinued due to strategic evaluation of the development program within the context of BioNTech and Genmab's portfolios. A Phase 1/2 clinical trial (NCT06391775) is being conducted to investigate the safety and preliminary antitumor activity of BNT315/GEN1055 in patients with advanced or metastatic solid tumors.

BNT322/GEN1056 is an antibody product candidate being co-developed with Genmab for the treatment of solid tumors and for use in combination with other products. The development program for BNT322/GEN1056 has been discontinued due to strategic evaluation of the development program within the context of BioNTech's and Genmab's portfolios. A Phase 1 clinical trial (NCT05586321) in patients with advanced solid tumors is ongoing.

b) Antibody Drug Conjugates

i) BNT323/DB-1303, an ADC in Development in Collaboration with DualityBio

BNT323/DB-1303 (trastuzumab pamirtecan) is a topoisomerase-1 inhibitor-based ADC directed against Human Epidermal Growth Factor Receptor 2, or "**HER2**", a target that is over-expressed in a variety of cancers and contributes to the aggressive growth and spread of cancer cells. The program received Fast Track Designation and Breakthrough Therapy designation from the FDA for advanced endometrial cancer.

An ongoing randomized, multi-site, open-label, pivotal Phase 3 clinical trial (DYNASTY-Breast02; NCT06018337) is recruiting to evaluate BNT323/DB-1303 versus the investigator's choice of chemotherapy in advanced or metastatic HR+, HER2-low breast cancer subjects whose disease has progressed on at least two lines of prior endocrine therapy or within six months of first-line endocrine therapy and cyclin-dependent 4/6, or "**CDK4/6**", inhibitor and no prior chemotherapy. The trial aims to enroll approximately 532 patients. The primary endpoint is PFS. Secondary endpoints include OS, ORR, DCR, DOR and safety, as well as patient-reported outcomes.

In September 2024, a Trial-in-Progress poster was presented at the ESMO Congress.

A pivotal Phase 3 clinical trial (NCT06265428) which DualityBio is conducting in China to evaluate trastuzumab pamirtecan (BNT323/DB-1303) versus trastuzumab emtansine (T-DM1) in patients with HER2-positive unresectable or metastatic breast cancer who have previously received trastuzumab and a taxane-based chemotherapy is ongoing. In September 2025, the clinical trial met its primary endpoint of progression free survival at a pre-specified interim analysis.

In September 2025, first patient was dosed in an open-label, randomized global Phase 3 trial (NCT06340568) evaluating BNT323/DB-1303 versus investigator's choice of chemotherapy in approximately 504 patients with HER2-expressing recurrent endometrial cancer whose disease has progressed on at least one line of platinum-based therapy.

A multi-site, non-randomized, open-label, multiple dose, first-in-human Phase 1/2 clinical trial (NCT05150691) is being conducted to evaluate BNT323/DB-1303 in patients with advanced/unresectable, recurrent, or metastatic HER2-expressing solid tumors.

A potential registrational cohort with HER2-expressing (IHC3+, 2+, 1+ or ISH-positive) patients with advanced/recurrent endometrial cancer has completed enrollment. Data from this cohort are planned to be shared at a medical meeting in 2026.

ii) BNT324/DB-1311, an ADC in Development in Collaboration with DualityBio

BNT324/DB-1311 is a topoisomerase-1 inhibitor-based ADC directed against B7H3. In 2024, we and DualityBio received Fast Track Designation for BNT324/DB-1311 from the FDA for the treatment of patients with advanced/unresectable, or metastatic CRPC, who have progressed on or after standard systemic regimens. It has also received Orphan Drug Designation from the FDA for the treatment of patients with advanced or metastatic esophageal squamous cell carcinoma.

A first-in-human, open-label Phase 1/2 clinical trial (NCT05914116) is being conducted to evaluate BNT324/DB-1311 in patients with advanced solid tumors. In June 2025, at the 2025 ASCO Annual Meeting CRPC data were presented from this trial. In 73 patients with heavily pretreated castration-resistant prostate cancer, BNT324/DB-1311 was observed to have a manageable safety profile and showed encouraging preliminary efficacy.

In December 2024, preliminary tumor-specific dose optimization data from the trial were presented at the ESMO Asia Congress, demonstrating encouraging efficacy and manageable safety across a range of advanced solid tumors.

In June 2025, at the 2025 ASCO Annual Meeting data were presented from the ongoing Phase 1/2 clinical trial (NCT05914116) evaluating BNT324/DB-1311 in patients with advanced solid tumors. In 73 patients with heavily pretreated castration-resistant prostate cancer, BNT324 was observed to have a manageable safety profile and showed encouraging preliminary efficacy. While outcomes appeared better in earlier treatment lines, encouraging activity was also observed in later lines and regardless of type of prior treatment or metastatic site.

iii) BNT325/DB-1305, an ADC in Development in Collaboration with DualityBio

BNT325/DB-1305 is a topoisomerase-1 inhibitor-based ADC directed against TROP2. In 2024, we and DualityBio received Fast Track Designation for BNT325/DB-1305 from the FDA for the treatment of patients with PROC, fallopian tube, or primary peritoneal cancer who have received one to three prior systemic treatment regimens.

A multi-center, non-randomized, open-label, multiple-dose, first-in-human Phase 1/2 clinical trial (NCT05438329) evaluating BNT325/DB-1305 in patients with advanced solid tumors is ongoing. As part of this clinical trial, BNT325/DB-1305 is being studied in combination with BNT327 in various solid tumor indications. In March 2025, at the Society of Gynecologic Oncology Annual Meeting on Women's Cancer, we presented preliminary clinical data from the BNT325 monotherapy trial. The data from a cohort of patients with PROC showed a manageable safety profile and early signs of anti-tumor activity. As aforementioned, in April 2025 at the 2025 AACR Annual Meeting, we presented the first clinical data evaluating the combination of BNT325/DB-1305 plus BNT327 from the ongoing global Phase 1/2 (NCT05438329) expansion cohorts.

In October 2025, data from this trial in patients with pretreated TNBC were presented at the 2025 ESMO Congress. Data showed BNT325/DB-1305 to have encouraging durable antitumor activity and be generally well tolerated.

iv) BNT326/YL202, an ADC in Development in Collaboration with MediLink Therapeutics

BNT326/YL202 is a topoisomerase-1 inhibitor-based ADC directed against HER3. HER3 is a target that is overexpressed in various cancer types, such as NSCLC and breast cancer, and is closely associated with tumor metastasis and disease progression. Furthermore, HER3 expression is upregulated after frontline drug therapy, making it an adequate target for cancer treatment resistance.

A multi-site, international, open-label, first-in-human Phase 1 clinical trial (NCT05653752), is being conducted to evaluate BNT326/YL202 as a later-line treatment in patients with locally advanced or metastatic EGFR-mutated NSCLC or HR-positive and HER2-negative breast cancer.

v) BNT329, an ADC for the Treatment of Advanced Solid Tumors

BNT329 is a fully owned carbohydrate antigen 19-9, or CA19-9, targeting ADC. CA19-9 is expressed in pancreatic cancers and other solid tumors, plays a role in tumor adhesion and metastasis formation, and is a marker of an aggressive cancer phenotype.

A Phase 1/2 clinical trial (NCT07186842) to evaluate BNT329 in advanced solid tumors is expected to start in 2025.

11.3.2.2 Infectious Disease Programs

11.3.2.2.1 Next-Generation COVID-19 Vaccine Program

In collaboration with Pfizer, we are aiming to develop a vaccine candidate that enhances and broadens SARS-CoV-2 responses.

11.3.2.2.2 COVID-19 – Influenza Combination mRNA Vaccine Program – BNT162b2 + BNT161

A Phase 1/2 clinical trial (NCT06821061) is being conducted to evaluate the safety, tolerability and immunogenicity of the companies' mRNA vaccine candidates against influenza and COVID-19. The trial aims to enroll 2645 healthy individuals aged 18 years and older.

*11.3.2.2.3 Herpes Simplex Virus, or "**HSV**", Vaccine Program – BNT163*

Since 2018, we have an ongoing research collaboration with the University of Pennsylvania, or UPenn, under which we have the exclusive option to develop and commercialize mRNA vaccine candidates for various infectious diseases.

As part of this collaboration, we have the exclusive license to a combination of three HSV antigens for use in a vaccine. This combination of HSV antigens has been further developed into an HSV mRNA vaccine candidate (BNT163), which we are currently evaluating in a Phase 1 clinical trial. This controlled, dose-escalation Phase 1 clinical trial (NCT05432583) aims to evaluate the safety, tolerability and immunogenicity for the prevention of genital lesions caused by HSV-2 and potentially HSV-1.

In October 2025, data from this trial were presented at the 2025 Infectious Disease Week, or IDWeek, congress. The data showed BNT163 was well-tolerated with an acceptable safety profile and induced binding antibody and neutralizing titers to HSV-2 antigens.

11.3.2.2.4 Tuberculosis Vaccine Program - BNT164

We have collaborated with the Gates Foundation since 2019 to develop vaccine candidates aimed at preventing tuberculosis disease.

A Phase 1 clinical trial (NCT05537038) and a separate Phase 1/2 clinical trial (NCT05547464) evaluating BNT164 are ongoing. Both the Phase 1 and Phase 1/2 clinical trials are designed to assess the safety, reactogenicity, and immunogenicity of mRNA vaccine candidates against tuberculosis.

11.3.2.2.5 Malaria Vaccine Program – BNT165

Our malaria program aims to develop a well-tolerated and highly effective mRNA vaccine with durable immunity to prevent P. falciparum malaria infection, thereby aiming to reducing morbidity, mortality and onward transmission. We plan to assess several vaccine candidates, featuring components of known targets such as circumsporozoite protein, or "**CSP**", and conserved, immunogenic segments of liver stage-expressed proteins.

A Phase 1 clinical trial (NCT05581641) to evaluate the safety, tolerability and exploratory immunogenicity of the vaccine candidate BNT165b1, the first candidate from our BNT165 program, has been completed.

A Phase 1/2 trial (NCT06069544) to evaluate the safety, tolerability, immunogenicity and efficacy of a second investigational RNA-based vaccine candidate is on clinical hold by the FDA, as announced on March 4, 2025. BioNTech has complied with the hold by the FDA and, in accordance with the clinical trial protocol, had proactively paused the study. BioNTech is taking actions to address the FDA's requests and will work with the FDA to assess next steps.

11.3.2.2.6 Mpox Vaccine Program – BNT166

Our fully-owned BNT166 program aims to deliver an effective, well-tolerated and accessible vaccine for the prevention of mpox. The multivalent BNT166 mRNA vaccine candidates encode surface antigens that are expressed in the two infectious forms of the mpox virus to efficiently prevent virus replication and infectivity. The program is supported through a partnership with CEPI to provide equitable access to the vaccine, if successfully developed and approved, in low- and middle-income countries.

A Phase 1/2 trial clinical trial (NCT05988203) evaluating the safety, tolerability, reactogenicity and immunogenicity of two mRNA-based multivalent vaccine candidates is ongoing.

In October 2025, data from the Phase 1 portion of this trial were presented at the 2025 IDWeek congress. The data showed that BNT166 was well-tolerated and induced multiantigen-directed antibodies with cross-mpox virus clade and cross-orthopoxvirus neutralization activity in vaccinia virus-naïve and experienced participants.

11.3.2.2.7 Shingles Vaccine Program – BNT167

We are collaborating with Pfizer to develop the first mRNA-based vaccine candidate against shingles (also known as herpes zoster). While there are currently approved vaccines for shingles, the goal is to develop an mRNA vaccine candidate that potentially shows high efficacy and better tolerability and is more efficient to produce globally.

A Phase 1/2 clinical trial (NCT05703607) to evaluate the safety, tolerability, and immunogenicity of BNT167 in up to 900 healthy volunteers 50 through 69 years of age is ongoing.

In April 2025, we were informed by Pfizer of their decision to opt-out of further joint development of BNT167. In May 2025, we informed Pfizer of our decision to also opt-out of the further development of BNT167. Next steps for the wind-down of the program and further advancement of this asset are being considered by BioNTech and Pfizer in accordance with the terms of the agreement.

11.3.2.2.8 Bacterial Vaginosis – BNT331

BioNTech R&D (Austria) GmbH, a wholly owned subsidiary of BioNTech SE, is focused on developing novel anti-bacterial drugs to treat persistent bacterial infections. Its development programs are based on our proprietary LysinBuilder platform, which allows for the targeted development of precision anti-bacterials. Our development pipeline focuses on chronic bacterial infections where antibiotics fail to cure or destroy the natural microbiomes.

A Phase 1 clinical trial (NCT06469164) is being conducted to evaluate the safety, tolerability, pharmacokinetics, and pharmacodynamics of BNT331 in healthy women and women diagnosed with bacterial vaginosis. It also aims to explore the efficacy of BNT331 in women diagnosed with bacterial vaginosis.

11.3.3 The mRNA Technology

We believe that over the last decade, mRNA has progressed into a promising new class of medicine, with the potential to treat a wide variety of diseases with high unmet medical needs. mRNA is a long, polymeric molecule, composed of four different building blocks called nucleotides. In mRNA, hundreds or thousands of these nucleotides are linked in a unique order to convey genetic information to cells, where it is used to express proteins with biological effects.

Since the COVID-19 pandemic, mRNA-based immunization for the prevention of infectious diseases is considered an innovative alternative to conventional vaccine approaches. mRNA has shown the potential to elicit potent protective immune responses against various pathogens and may offer advantages over the use of live and inactivated virus vaccines, subunit vaccines, and other nucleic-acid-based vaccine formats. According to Beissert et al (2020), “RNA is non-infectious, non-integrating and, by virtue of rapid degradation by normal cellular processes, is only transiently active. RNA can be administered repeatedly to both prime and boost immune responses and is not limited by anti-vector immunity. Moreover, the RNA backbone engages pattern recognition receptors in the host cell, thereby naturally adjuvanting the response to the encoded immunogen”. According to the same study, mRNA can also enable “rapid, cost-efficient, cell- and animal-material-free, scalable production without the use of egg- or cell-based culture. Thus, RNA may facilitate how vaccines are made and has the potential to enable a rapid response to emerging infections”.

Synthetic mRNA can be engineered to resemble mature and processed mRNA molecules that naturally occur in the cytoplasm of eukaryotic cells and can be used to transiently deliver proteins. Established mRNA manufacturing technologies can be quickly adapted to produce mRNAs of different sequences, allowing for the rapid development of mRNAs with the potential to address a variety of different conditions, including cancer, infectious disease and rare diseases. Our mRNA pipeline addresses each of these therapeutic areas.

11.3.3.1 General Principles of mRNA Pharmacology

As a drug, manufactured mRNA provides instructions to a target cell to produce specific encoded protein(s) or protein chunks with a desired prophylactic or therapeutic effect. Based on these instructions, the proteins will be either secreted, remain intracellular or on the membrane while protein epitopes are being processed to be presented to the immune system. The mRNA drug will eventually be degraded and eliminated from the body.

Our mRNA drugs are synthesized in a cell-free system by in vitro transcription from a DNA template. This template encodes all the structural elements of functional mRNA, except for the 5' cap structure, which is co-transcriptionally incorporated. After in vitro transcription is performed, the template is then digested by DNase and the mRNA is purified by conventionally used methods for isolating nucleic acids. The mRNA molecule comprises:

- an open reading frame, or "**ORF**", which encodes the protein of interest;
- untranslated regions, or "**UTRs**", which flank the ORF; and
- the cap and the poly(A) tail, which are the two terminal structures of the linear mRNA and are responsible for increased stability and translational efficiency of mRNA.

The mRNA drug needs to be appropriately formulated in order to protect mRNA molecules against enzymatic degradation by ribonucleases and to facilitate their delivery to the target cells. The formulation is selected based on the intended application and route of delivery. After uptake into the target cell, the mRNA molecules are loaded into ribosomes, where translation into protein takes place. Subsequently, the mRNA is degraded by cellular mechanisms. Proteins encoded by the mRNA can be secreted or maintained in or on the cell.

Encoded proteins can perform functions in the body, for example, replacing deficient activities, or they can trigger immune responses, for example by acting as antigens (as in the case of vaccines), or by directing the immune system to a target of interest (as in the case of many therapeutic antibodies). Also, proteins encoded by the mRNA are processed by the cellular machinery and can be displayed by specialized complexes, namely major histocompatibility complexes, or MHC, I or MHC II complexes, to trigger T-cell responses to epitopes present within them. These complexes present the epitopes to immune cells to elicit the desired immune response. In the case of other mRNA applications, the mRNA encodes proteins that are secreted from the cells, such as antibodies, and function extracellularly.

The structural elements of the mRNA have an impact on its performance. This includes potential immunogenicity, efficiency of translation and molecular stability. We leverage our extensive experience to design, synthesize, manufacture and formulate our therapeutic mRNA, and to adapt its composition to suit the desired application.

- The cap is added to the 5' end of the mRNA during its synthesis. Our studies have demonstrated that incorporation of a unique cap analogue into the mRNA helps to achieve superior translational performance by stabilizing the mRNA molecule and directing the immune response.
- The composition and structure of the 5' and 3' UTRs of the mRNA molecule are important determinants of the intracellular stability of mRNA. Through rigorous screening of different mRNA sequences, we identified specific UTRs that promote increased protein translation for long duration.
- We have performed extensive research on the structure of the poly(A) tail and the translational performance of mRNA and customized our template design accordingly.

The translational performance of mRNA can be increased by reducing contaminating double-stranded RNA, or "**dsRNA**", from the mRNA. We have extensive expertise in different mRNA purification procedures. We have also invented a novel mRNA purification method that greatly impacts translatability of our mRNA. Depending on the protein characteristics needed for treatment of a disease, we optimize the DNA template through a proprietary codon optimization process, changing the nucleotide sequence of the template without altering the amino acid composition of the encoded protein. We make further adjustments during mRNA production to minimize the occurrence of dsRNA by-products. We believe fine-tuning the respective molecules provides a great benefit to the purpose-adapted performance of our mRNA.

11.3.3.2 mRNA Formats

11.3.3.2.1 Optimized Uridine mRNA, or uRNA

The nucleotide sequence of mRNA determines the amino acid sequence of the protein. In addition, the nature of nucleosides used for production of mRNA drugs can also influence recognition of the molecule by the immune system. The presence of naturally occurring uridine (U) in our optimized uRNA makes it immunogenic by activating immune sensors. We have further optimized our uRNA for immunogenicity of the encoded antigen (augmented presentation on MHC I and MHC II) and pharmacological activity (enhanced stability and translational efficiency). Immunogenicity of the mRNA is an added benefit when mRNA is used for immunotherapy applications, by acting as an immunotherapy adjuvant. We believe this makes our therapeutics for iNeST and *FixVac* even more potent.

*11.3.3.2.2 Nucleoside-modified mRNA, or "**modRNA**"*

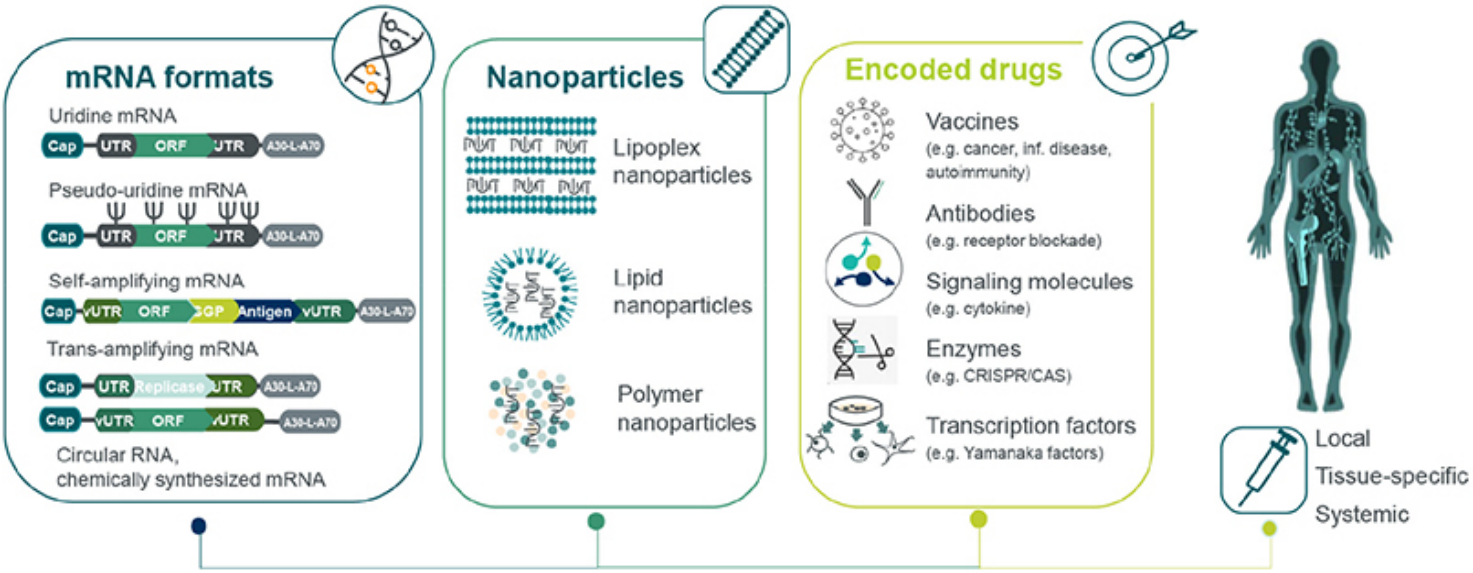
Immunogenic reaction against mRNA drugs needs to be avoided in applications where therapeutic proteins are produced, such as in our *RiboMab* and *RiboCytokine* platforms. We have profound expertise in incorporating naturally-occurring modified nucleosides into our therapeutic mRNAs. We have demonstrated that the presence of a variety of modified nucleosides in the manufactured mRNA suppresses its intrinsic immune activation, while leading to superior protein production for long duration. Deimmunizing mRNA by incorporating modified nucleosides helps to avoid the production of anti-drug antibodies and to broaden the therapeutic application of these types of mRNA drugs. We believe this customization has resulted in therapeutic mRNA that is both potent and well tolerated. Together with the increased tolerability, we believe the high yield of antigen delivered by mRNA makes this format suitable for prophylactic vaccines against infectious diseases inducing a strong cellular and also humoral immune response.

*11.3.3.2.3 Self-amplifying mRNA, or "**saRNA**"*

Our saRNA drugs use the concept of viral mRNA replication, while not being infectious, disease-causing agents themselves. saRNA resembles conventional mRNA, encoding the protein of interest, but it also encodes an RNA-dependent RNA-polymerase, called replicase, that multiplies part of the mRNA within the target cell. Thus, lower amounts of saRNA are needed compared to a regular mRNA to obtain the same amount of active protein. As we have demonstrated, our saRNA ensures high levels of sustained antigen production with a small amount of initial mRNA input. Our scientific team has designed this mRNA technology to act as a potent tool for prophylactic vaccination, with the potential for application in infectious diseases.

*11.3.3.2.4 Trans-amplifying mRNA, or "**taRNA**"*

We have expanded our self-amplifying mRNA capabilities and developed a novel mRNA amplification technology which separates amplification of the target mRNA and the replicase encoding mRNA. This advancement broadens the spectrum of applications by making the development of therapeutic and prophylactic mRNAs even more flexible, as the replicase can amplify multiple mRNAs allowing the expression of multiple proteins with only one replicase encoding mRNA. In the case of vaccines, this allows us to produce the replicase mRNA in advance for use with different vaccines. Our taRNA is a proprietary mRNA format that we believe is particularly well-suited for prophylactic vaccines to prevent infectious diseases. We believe that taRNA-based split-vector systems may be advantageous over saRNA with regard to safety, versatility, and manufacturing.



mRNA offers a broad technology toolbox: We have developed and optimized mRNA formats and delivery formulations for their potency and performance, each optimized for different therapeutic applications.

11.3.3.3 mRNA Delivery Formulation Technologies

Based on our research and development activities, we believe we have deep and broad expertise in the targeted delivery of mRNA therapeutics (see also Sahin et al., 2014). We are convinced that the development of suitable delivery formulations in conjunction with our own therapeutic mRNAs is a key competitive advantage.

Our main mRNA delivery formulations, each designed for different functions and optimized for therapeutic product needs, are described below:

*11.3.3.3.1 Lipoplex Nanoparticles, or Lipoplex, or "**LPX**", Formulation*

Our LPX formulation embed the mRNA between a lipid bilayer and is used for our *FixVac* and iNeST platforms. We use a proprietary size- and charge-based non-viral LPX formulation that we have developed to deliver mRNA to dendritic cells in lymphoid compartments (such as the spleen) for optimal antigen presentation and immune response activation. A synchronized adjuvant effect is mediated by TLR7-triggering and type-I interferon-driven innate and adaptive immune stimulation. Our LPX formulation allows for intravenous administration of our investigational mRNA-based cancer immunotherapies. The LPX formulation protects mRNA from degradation outside of the cell and mediates its efficient uptake and expression of encoded antigens in various DC populations. Our LPX formulation technology is designed to deliver multiple antigens in parallel, enabling the induction of poly-specific T-cell responses. We have demonstrated in the clinic that systemic DC targeting by mRNA-based cancer immunotherapies can result in potent activity against shared tumor-associated antigens at very low doses. Consequently, less material would be required for treating high patient numbers, making manufacturing potentially more cost-effective.

*11.3.3.3.2 Lipid Nanoparticles, or "**LNP**", Formulation*

For other applications, we encapsulate our mRNA into LNPs. These LNP formulations are suitable for our *RiboMab and RiboCytokine* oncology therapies and our prophylactic vaccines against infectious disease.

Our COVID-19 vaccines are based on an LNP formulation platform encapsulating nucleoside modified RNA, which has blunted innate immune sensor activating capacity and thus augmented antigen expression. Encapsulation of the mRNA into LNPs enables its transfection into host cells after intramuscular injection. These LNP formulations are composed of four different lipids in a defined ratio. During the mixing of the mRNA and dissolved lipids, the lipids form nanoparticles encapsulating the mRNA. After injection, the LNPs are taken up by the cells, and the mRNA is released into the cytosol. In the cytosol, the mRNA is translated into the encoded viral protein.

*11.3.3.3.3 Polymer Nanoparticles, or Polyplex, or "**PLX**", Formulation*

Our portfolio also includes PLX formulations, in which the mRNA is bound to a polymer and then forms nanoparticles, which are being utilized in various of our discovery programs.

11.3.3.4 mRNA Platforms

We are developing multiple mRNA-based therapeutics in the oncology space, including mRNA cancer immunotherapy programs (e.g., *FixVac* and iNeST), *RiboMabs*, and *RiboCytokines*, using different RNA formats and delivery formulations. We have also implemented mRNA platforms for the development of infectious disease vaccines.

Importantly, each of these platforms enables the development of multiple pharmaceutical product candidates or programs.

	mRNA platform	Drug target	mRNA format	Delivery formulation
	5 platforms	Broad range of targets	4	2
Oncology	iNeST	Neoepitopes	uRNA	LPX
	FixVac	Shared antigens	uRNA	LPX
	RiboMabs	mAb targets	modRNA	LNPs
	RiboCytokines	Cytokines	modRNA	LNPs
Infectious diseases	Vaccines	Viral, bacterial, parasitic pathogens	saRNA, taRNA, modRNA	LNPs

Our mRNA Platforms. We have multiple mRNA-based platforms utilizing different mRNA formats and delivery formulations that are directed at a range of biological targets in oncology and infectious and rare diseases.

11.4 Sales, Marketing and Distribution

Our commercial organization currently focuses on supporting sales of our COVID-19 vaccine in Germany and Türkiye. Our commercial organization is responsible for promoting our products to health care providers and providing information to stakeholders, including governmental organizations, in Germany and Türkiye.

As a result of our partnership with Pfizer, under which our commercialization responsibilities are limited to Germany and Türkiye, we maintain a lean fixed cost base for our COVID-19 vaccine business.

Our commercial organization is also responsible for preparing and obtaining reimbursement from third-party payors, including governmental organizations, for our COVID-19 vaccine.

We aim to build a specialized oncology sales force in major markets, including North America and Europe, while leveraging our commercial partners for co-commercialization. We are working towards being commercial-ready in oncology by the end of 2025, in anticipation of potential commercial oncology launches as soon as 2026, if approved.

11.5 Manufacturing

We aim to build a fully integrated biotechnology company, with operations spanning from research through clinical development, manufacturing and sales and marketing. To successfully bring individualized immunotherapies and vaccines to people around the world, we believe that it is crucial to have in-house manufacturing capabilities that can be efficiently scaled for global clinical and commercial distribution. We have several manufacturing sites capable of developing automated production processes for on-demand production of our investigational therapies and vaccines. These can be classified into distinct GMP manufacturing capabilities.

We operate four GMP-certified manufacturing facilities in Germany, where we manufacture mRNA therapeutics and engineered cell therapies for both, our own pipeline and for external customers, including a state-of-the art, multi-platform, GMP-certified manufacturing facility located in a life science industrial park in Marburg, Germany, which we acquired in October 2020 from Novartis to increase manufacturing capacity of our COVID-19 vaccine for commercial supply. We also operate a fifth facility in Germany where we manufacture custom peptides both to support our extensive immunomonitoring activities within our development programs and for third parties. Our subsidiary BioNTech Innovative Manufacturing Services GmbH, or "**BioNTech IMFS**", has been manufacturing GMP-certified cellular products since 1999.

Our approach has been to proactively build capacity in anticipation of demand from both internal research and development from our collaborators. We have done so by continuing to make significant investments in our manufacturing infrastructure, including our capacity to manufacture mRNA, viral vectors, cellular products and peptides. We have also collaborated with Siemens AG to develop a process for automated, on-demand production of mRNA therapies. We believe that the development and optimization of our manufacturing processes in parallel to drug development is crucial to our success.

11.5.1 Manufacturing Operations

COVID-19 Vaccine. Our manufacturing site in Marburg was approved by the EMA for manufacturing of our COVID-19 drug product in March 2021. This approval made it one of the largest mRNA manufacturing sites worldwide. In addition, we have another GMP facility that currently produces our COVID-19 vaccine candidates for clinical trials. We have a network of sub-contractors established to provide drug products, and fill and finish services to enable production.

mRNA. We believe scaling up manufacturing for mRNA can best be executed as part of a proprietary manufacturing approach, rather than as part of an outsourcing strategy. We believe this approach allows us to maintain control of our proprietary processes and gives us the flexibility we need for scheduling batch production for our drug substances to match our development plans as they evolve. Our mRNA manufacturing is currently conducted at our in-house BioNTech IMFS facility, our BioNTech East Wing facility, and our Marburg facility. The East Wing facility manufactures iNeST (finished product). In 2024, we undertook sterile filtration and final filling of over 77,000 vials of various sizes in the East Wing and over 22,000 vials at IMFS. Drug substance batch sizes range from a few milligrams for individualized applications (i.e., iNeST) to 10g for standard mRNA applications (i.e., FixVac, intratumoral immunotherapies and infectious diseases), and up to approximately 720g batches for COVID-19. Our manufacturing facility in Marburg is one of the largest mRNA vaccine manufacturing sites worldwide with an annual capacity of up to three billion doses of mRNA drug substance and we believe we are well positioned to supply the quantities required by global market demand.

To date, we have produced more than 2,000 batches of mRNA drug substance to support our clinical studies. We currently have infrastructure capable of producing about 100 batches of mRNA drug substance and formulated drug product per month with a turnaround time of about 30 to 40 days from sequence identification to released product. We believe we have the capacity to meet the supply needs of our current product candidates in clinical trials through registration.

We have successfully decreased the time required to deliver iNeST to patients. In 2014, it took us over three months to manually manufacture and deliver individualized immunotherapies to patients. Since December 2017, with the implementation of semiautomatic GMP manufacturing in collaboration with partners, we have demonstrated we are capable of manufacturing and delivering individualized immunotherapies in under six weeks. This advancement represents significant progress toward our target commercial manufacturing turnaround time of less than 28 days, and we were able to demonstrate less than 30 days in 2021. We plan to continue to develop additional process improvements, which we expect will further reduce our turnaround times as we progress through clinical development.

Cell Therapy Products. We have end-to-end capabilities and teams in Germany and the United States with over 20 years of experience in cell therapy manufacturing, quality control and release. Our cell therapy programs target novel and known tumor-specific antigens, including patient-specific mutant neoantigens. We also leverage our mRNA vaccine technology to further boost T-cell activation, expansion, and persistence. Our state-of-the-art manufacturing processes of cellular products involve the isolation of primary human blood cells and subpopulations, such as, e.g., CD3+ T cells. Cell products are cultured, expanded and genetically modified (*e.g.*, CAR-T cells) in aseptic production processes in specialized cleanroom facilities. We also have the capability for in-house mRNA production for the genetic modification of such innovative cell therapy products.

Peptides. Our custom peptide synthesis business has developed unique technologies to produce several million peptides over the past ten years to support our growing clinical pipeline. These include fast small-scale manufacturing of peptides for target and epitope discovery as well as for neoepitope characterization and production of high content arrays. It is important to synthesize highly purified peptides in order to avoid false positives in immunomonitoring in our mRNA immunotherapy trials. We also use peptides as starting materials in our engineered cell therapies as well as in some drug formulations and biomarker discovery studies. We have developed proprietary technologies to produce highly complex and purified peptide pools that consist of overlapping peptides spanning entire antigens or neoepitopes. In September 2025, we moved into a new manufacturing plant of approximately 7,500 square meters in Berlin, which doubles our manufacturing capacity to produce Active Pharmaceutical Ingredient.

11.5.2 Manufacturing Facilities

The information included herein is as of the date of this Prospectus. For more information about our plans to implement measures to adjust capacities in some areas, see section "*11.2.2 Strategic Outlook*".

11.5.2.1 Manufacturing Sites in Germany

11.5.2.1.1 Marburg

Marburg is one of our fully owned, state-of-the-art manufacturing facilities for just-in-time delivery and scalable production. Our Marburg manufacturing facility was acquired from Novartis in 2020 for less than a hundred million euros and comprises eight large and small molecule production suites across more than 100,000 square feet. Within 6 months from acquisition, the facility was retrofitted to produce mRNA vaccines. It is now one of the largest mRNA vaccine manufacturing sites globally. The facility has the capacity to produce up to three billion doses of mRNA drug substance vaccine annually.

Marburg is our central hub for innovation and development of novel manufacturing solutions. It is a center of excellence, not only in terms of facilities and devices, but as a know-how hub with appropriate and forward-looking staff training. We have about 650 employees on site. To ensure production, we work in flexible/different shift models, e.g., 24/5.

In 2023, we completed our first proprietary plasmid DNA manufacturing facility in Marburg. This aims to increase our flexibility and autonomy in manufacturing starting materials for our oncology and COVID-19 vaccine pipelines, as well as our independence for pandemic preparedness due to local production. We also expect this manufacturing facility will facilitate faster production cycles and shorter delivery times for plasmid DNA for a number of clinical product candidates and commercial products.

11.5.2.1.2 Idar-Oberstein

BioNTech IMFS: Our manufacturing operations for cell therapy products and mRNA are housed in our wholly owned subsidiary. Founded in 1997, BioNTech IMFS specializes in services for innovative therapeutic approaches. In 2009, BioNTech IMFS became our wholly owned subsidiary, giving us access to synergistic platforms and complementary expertise for development, testing and manufacturing services. BioNTech IMFS and its predecessors have had GMP-certified cell and gene therapy manufacturing capabilities since 1999, and obtained GMP manufacturing authorization for mRNA production in 2011. In 2017, BioNTech IMFS began automated manufacturing of the iNeST product candidate and entered its first commercial supply contract for retroviral vectors. Located near Mainz, Germany, the BioNTech IMFS facility occupies over 30,000 square feet. Over 500 staff members are employed at this facility, with collective expertise in molecular biology, cell biology and virology and a close working relationship with our R&D teams in Mainz, Germany. We consider BioNTech IMFS our powerhouse for early-stage mRNA material.

11.5.2.1.3 Mainz

BioNTech iNeST Clinical Manufacturing (East Wing): We utilize our GMP-certified manufacturing facility at our headquarters in Mainz, Germany for the production of iNeST immunotherapies. In 2015, our wholly owned subsidiary, BioNTech RNA Pharmaceuticals GmbH, or "**BioNTech RNA**", and Siemens announced a collaboration for developing an automated, paperless and digitalized production site for individualized mRNA. We obtained our GMP manufacturing authorization for iNeST production at our East Wing facility in June 2018 and manufactured our first drug product there the following month.

This facility contains approximately 17,000 square feet of laboratory and office space, including 4,300 square feet of GMP facilities. Over 300 staff members are employed at this facility and operate it seven days per week. In its first year of operation, the facility manufactured and released more than 250 batches of mRNA and has manufactured and released more than 1,700 batches of mRNA since inception.

To perform our target identification process to feed into the iNeST downstream GMP manufacturing process, our headquarters also holds our core facility, which operates under GCP for labs. Incoming patients' materials (blood and tumor samples) are received and analyzed to identify characteristic mutations to generate the patient-specific target list used for individualized mRNA production.

BioNTech Clinical Manufacturing: Our GMP-certified manufacturing facility in Kupferbergterrasse, Mainz, Germany, is authorized to conduct secondary packing, labeling, storage and batch release of primary packed investigational medicinal products. This facility contains approximately 11,500 square feet of laboratory and office space, including 1,250 square feet of GMP facilities.

11.5.2.1.4 Berlin

JPT: JPT, our peptide manufacturing facility, was established in 2004 and became a wholly owned subsidiary of BioNTech in 2008. JPT is located in Berlin and occupies over 16,000 square feet of clean rooms, laboratory and office space.

11.5.2.2 Global Manufacturing Sites

Outside of Europe, we maintain fully operational sites in the United States and in Singapore. We also have non-fully operational sites in Rwanda and Mainland China.

11.5.2.2.1 Gaithersburg R&D and GMP Manufacturing Facility

We acquired our site in Gaithersburg, Maryland, United States, from Kite Pharma, Inc., a Gilead Sciences company, in August 2021. Since then, we have been building capabilities for research, late-stage technical development and clinical manufacturing of cell and gene therapy products. In 2024, we added a new R&D facility, expanding our campus footprint to approximately 92,000 square feet, to continue to advance our cell and gene portfolio and further develop U.S.-based technical and operational capabilities in support of our pipeline and commercialization efforts in the United States.

11.5.2.2.2 Singapore Manufacturing Facility

In November 2022, our Singapore affiliate, BioNTech Pharmaceuticals Asia Pacific Pte. Ltd., entered into an agreement with Novartis Singapore Pharmaceutical Manufacturing Pte. Ltd. to acquire one of its GMP-certified manufacturing facilities. The acquisition is part of our expansion strategy to strengthen our global footprint in Asia. The facility is intended to create regional manufacturing capacities in support of our growing pipeline therapeutics across the Asia Pacific region, with the potential to expand the production to other drug classes, such as cell therapies or anti-bodies.

11.5.2.2.3 The BioNTainer: a platform for localized and sustainable mRNA production

The *BioNTainer* is an example of our innovative approach to establishing scalable vaccine production. It was developed to ensure sustainable, equitable access to our programs, particularly in low-income countries and regions with limited infrastructure. Introduced in February 2022, the *BioNTainer* allows scalable vaccine production by developing and delivering mRNA manufacturing facilities based on a

containerized clean room solution with a modular design, standardized equipment, and software components. Each *BioNTainer* unit is a clean room, which we equip with state-of-the-art manufacturing solutions for the manufacture and formulation of mRNA-based vaccines. Each *BioNTainer* unit is built of six to eight ISO-sized containers. A *BioNTainer* unit can be equipped to manufacture a range of mRNA-based vaccines targeted to regional needs: for example, our COVID-19 vaccine and our investigational malaria and tuberculosis vaccines, if they are successfully developed, approved, and authorized by regulatory authorities and in line with regional demand. Each *BioNTainer* facility is intended to become a node in our global manufacturing network, aiming to offer greater independence and faster regional vaccine supply. We believe this solution is an important step towards improving global vaccine supply.

In addition to our *BioNTainer* facility in Kigali, Rwanda, in 2023, we announced our intention to set up and operate a clinical-scale mRNA manufacturing facility with *BioNTainer* units in Melbourne in the State of Victoria, Australia. The site is intended to support R&D and clinical-scale manufacturing of investigational mRNA-based medicines from the local ecosystem as well as from other third parties globally.

11.5.2.2.4 Kigali Manufacturing Facility

The Kigali facility was planned to initially house two sets of *BioNTainer* units for commercial-scale bulk production of mRNA vaccines and is intended to enable robust end-to-end manufacturing in Africa for mRNA-based medicines. The first *BioNTainer* unit arrived in Kigali, Rwanda in 2023. That same year, we inaugurated our Kigali site on the occasion of the set-up of the first *BioNTainer* unit.

In May 2024, we announced that CEPI would be committing up to $145 million to support us to establish mRNA vaccine R&D, clinical and commercial-scale manufacturing capabilities at the Kigali facility. The setup of clinical-scale manufacturing capabilities for mRNA-based vaccine candidates involves the installation of two additional *BioNTainer* units at the Kigali facility. This will allow the facility to manufacture on both a clinical and commercial scale, and thus broaden the manufacturing scope, in support of a sustainable use case for the facility while strengthening the wider African vaccine development ecosystem. Under the terms of the agreement, we intend to provide sustainable supply of our prophylactic vaccines manufactured at the Kigali facility if successfully developed and authorized, such as vaccines against malaria, mpox and tuberculosis, to low and lower middle-income countries, with priority supply to African countries.

Once fully operational, the facility's capacity would depend on the product, production-scale and its dosage. For example, if used to produce the Pfizer-BioNTech COVID-19 vaccine, the first set of *BioNTainer* units could produce an estimated initial annual capacity of up to 50 million doses. The facility is expected to employ approximately 100 people once fully operational, spanning a range of disciplines.

In line with the continent's and partner countries' needs, we are committed to establishing additional manufacturing facilities in Africa upon the successful validation of the facility in Kigali.

11.5.2.2.5 Mainland China

Since BioNTech's acquisition of Biotheus, which closed in January 2025, the Company has had a significant infrastructure component in Mainland China. This includes a freehold manufacturing facility in Nantong, covering an area of approximately 62,000 square meters. While most of the site is currently in a shell and core condition, it is intended to be developed further to support additional capacity. In addition, the Company has a leasehold asset in the form of the current Biotheus headquarters in Zhuhai, which comprises office, lab, and pilot manufacturing space totaling approximately 5,500 square meters.

11.5.3 Other Certifications

BioNTech Diagnostics has a quality management system that is certified according to ISO 13485:2016 and JPT maintains an ISO 9001:2015 certified Quality Management System to allow production of European CE marked companion diagnostics.

11.5.4 Quality Assurance

We have implemented and maintain several Quality Assurance systems. BioNTech IMFS, BioNTech Clinical Manufacturing and BioNTech iNeST Clinical Manufacturing have implemented GMP-certified quality assurance systems. BioNTech Diagnostics has a quality management system that is certified according to ISO 13485:2016 and JPT maintains an ISO 9001:2015 certified Quality Management System.

11.6 Third-Party Collaborations

We have forged productive collaborations with pharmaceutical companies and academic research institutions with area expertise and resources in an effort to advance and accelerate our discovery and development programs in oncology, and also to leverage our drug classes into additional disease indications while minimizing our incremental costs.

Our key collaborations include:

- Bristol Myers Squibb for our late-stage clinical asset BNT327 an investigational bispecific antibody targeting PD-L1 and VEGF-A;
- Autolus for certain binders;
- DualityBio for the research and development of certain antibody drug conjugates;
- Fosun Pharma for our COVID-19 vaccine program;
- Genentech for our iNeST platform in our mRNA drug class;
- Genmab for our next-generation checkpoint immunomodulator platform in our protein-based therapeutics drug class;
- OncoC4 for the research and development of certain monoclonal anti-CTLA4 antibodies; and
- Pfizer for our COVID-19, influenza and joint COVID-19/influenza vaccine programs, which leverage technology from our infectious disease mRNA-based platform.

We either wholly own or retain significant rights to all of our clinical stage programs, either in the form of a global share of profit and co-commercialization rights with our collaborators in certain markets or significant royalties and milestones. We plan to continue to identify potential collaborators who can contribute meaningful resources and insights to our programs and allow us to more rapidly expand our impact to broader patient populations.

11.6.1 Bristol Myers Squibb

On June 2, 2025, we entered into a global co-development and co-commercialization Agreement (the "**Original BMS Agreement**") with Bristol-Myers Squibb Company (BMS) to jointly develop, manufacture and commercialize our investigational bispecific antibody BNT327 across numerous solid tumor types.

We assigned our rights and obligations under the Original BMS Agreement to BioNTech US Inc., pursuant to an assignment and assumption agreement dated June 2, 2025 which was amended on August 15, 2025. In connection with the assignment, the parties also entered into a parent guarantee in favor of BMS dated June 2, 2025. The Original BMS Agreement was amended and restated on August 15, 2025 to further define the performance-related rights and obligations of the collaboration (as so amended and restated, the "**BMS Agreement**").

Under the BMS Agreement, BMS will pay us $1.5 billion in an upfront payment and $2 billion total in non-contingent anniversary payments through 2028. In addition, we will be eligible to receive up to $7.6 billion in additional development, regulatory and commercial milestones. The parties will equally share global profits and losses.

The parties have agreed to use commercially reasonable efforts to jointly develop BNT327, as a monotherapy or in combination with other products, pursuant to a joint development plan (the "**JDP**"). Development costs will generally be shared equally; provided, if a particular joint clinical trial involves BNT327 in combination with a proprietary or in-licensed asset of either party, cost sharing will be on an adjusted basis, subject to certain exceptions.

Each party may propose new clinical trials for additional indications or combinations to the JDP. If the other party declines co-funding of a proposed new trial in the JDP, the proposing party may proceed independently at its own cost, under the oversight of the joint development committee, subject to certain reimbursement rights against the other party.

The parties have also agreed to use commercially reasonable efforts to jointly commercialize BNT327 pursuant to a jointly developed global commercialization strategy and certain co-commercialization and market access plans. The parties will equally share any profits and losses from the commercialization of BNT327. A joint commercialization committee will coordinate and allocate commercial responsibilities, including the "lead" role with respect to specific activities, in an equitable manner to maximize the success of BNT327 and to maximize the efficiencies of the collaboration and avoid duplication of efforts as much as possible. Each party has the right to equally contribute (on a market-by-market basis) to all strategic commercial planning and execution, subject to certain exceptions.

We will be solely responsible and will use commercially reasonable efforts for the global clinical supply of BNT327 initially before the completion of a manufacturing technology transfer from us to BMS (the "**Manufacturing Transfer**"). Following the completion of the Manufacturing Transfer, we will continue to be responsible and will use commercially reasonable efforts for the global clinical supply of BNT327, but the parties may agree for BMS to manufacture certain quantities of the clinical supply. Following the completion of the Manufacturing Transfer and BMS being otherwise ready to manufacture and supply at scale, BMS will be responsible for the commercial supply of BNT327, provided that we retain the right to contribute a certain percentage of global commercial supply.

Each party has also granted to the other party certain co-exclusive licenses under its intellectual property ("**Relevant IP**"), including patents and know-how (including to each party's share of any future jointly owned Relevant IP under the BMS Agreement), to perform development and medical affairs activities with respect to, seek and obtain regulatory approvals of, and manufacture, commercialize and otherwise exploit BNT327.

The parties have also agreed to a mutual right of first negotiation, effective from the date of the BMS Agreement through the fifth anniversary thereof, with respect to certain events related to next generation antibodies, where either party (a) receives a transaction proposal from a third party, (b) intends to enter into such transaction negotiations with a third party, or (c) determines to initiate a registrational trial for such next generation antibody.

The term of the BMS Agreement commenced on June 2, 2025 and will remain in effect until and unless the parties mutually agree to permanently terminate and cease all exploitation of BNT327, or the BMS Agreement is otherwise earlier terminated by the parties in accordance with its terms. BMS has the right to terminate for convenience by giving a specified period of prior notice. BMS may also terminate if BMS determines in good faith that there is unacceptable risk for harm in humans relating to BNT327 that is not resolved (a "**Safety Issue**"). Each party may also terminate for uncured material breach or insolvency of the other party. In the event that the termination is by BMS for convenience or by us for uncured material breach, the parties will continue to co-fund certain ongoing clinical trials until the earlier of the completion or wind-down of such clinical trials or the conclusion of a specified period from the date of notice of termination. Upon termination, all licenses granted under the BMS Agreement will terminate, except that BMS will grant us a reversion license (the "**Reversion License**") (other than where termination is by BMS for a Safety Issue) to BMS's interest in specified reversion Relevant IP to allow us to continue developing and commercializing licensed products in the form such licensed products existed as of the date of termination, subject to the parties agreeing on the financial payments for such Reversion License. The grant of the Reversion License is contingent on (i) the parties' agreement upon commercially reasonable financial payments and (ii) the parties entering into a reasonable license agreement for the Reversion License. In the event that the parties cannot agree on commercially reasonable financial payments during a specified period, the parties will refer such matter for resolution by baseball arbitration. During the period between termination and entry into the Reversion License (or a specified period following the termination date, if earlier), BMS may not bring any claim against us for infringement of any reversion Relevant IP in the conduct of any development activities ongoing as of the termination date.

11.6.2 Autolus Collaboration

11.6.2.1 License and Option Agreement

On February 6, 2024 (with effect as of February 13, 2024), we entered into a license and option agreement, or the "**Autolus License Agreement**", with Autolus, pursuant to which Autolus granted to us an exclusive, worldwide, sublicensable license, which we refer to as the "**Autolus License**", to certain binders and to exploit products that express in vivo such binders, which we refer to as the "**Binder Licensed Products**". Autolus also granted to us several time-limited options, or the "**Autolus Options**", to acquire additional rights to specified clinical-stage product candidates, binders and technologies of Autolus, described in more detail below.

In the event that all Autolus Options are fully exercised, Autolus would be eligible to receive maximum aggregate payments of up to $582 million pursuant to the Autolus License Agreement. This maximum amount includes upfront payments, the potential milestone payments for the Binder Licensed Products described below, all option exercise fees and potential milestone payments for licenses to optioned products and technologies, and additional payments that we may pay to Autolus for an increased revenue interest with respect to Autolus's product candidate, obe-cel, as described below.

In consideration for the Autolus License and the Autolus Options, we made an initial payment to Autolus of $10 million. Autolus is eligible to receive milestone payments of up to $32 million in the aggregate upon the achievement of specified clinical development and regulatory milestones for each Binder Licensed Product that achieves such milestones. Autolus is also eligible to receive a low single-digit royalty on net sales of Binder Licensed Products, subject to customary reductions, which reductions are subject to specified limits. The royalty will be increased if we, our affiliates or our sublicensees commercialize a Binder Licensed Product in an indication and country in which Autolus or its affiliates or licensees also commercializes a product containing the same binders. Under the License Agreement, we are solely responsible for, and have sole decision-making authority with respect to, at our own expense, the exploitation of Binder Licensed Products.

Under the terms of the License Agreement, Autolus has agreed to grant us the following time-limited Autolus Options:

- an option to obtain exclusive rights to co-fund development costs of Autolus's development-stage programs AUTO1/22 and AUTO6NG, in return for agreed upon economic terms, including an option exercise fee, milestone payments and a profit-sharing arrangement for each such product candidate, with additional options to co-promote or co-commercialize such product candidate; we elected not to exercise the option with respect to AUTO1/22 and such option right has expired;
- an option to obtain an exclusive worldwide license to exploit products that express certain additional binders in vivo or, with respect to certain binders, in an antibody drug conjugate, or the "**Binder Option**"; we elected not to exercise the option with respect to certain specific binders and to terminate our option right with respect to such binders;
- an option to obtain a co-exclusive worldwide license to exploit products that express in vivo Autolus's modules for activity enhancement, with a non-exclusive right, in certain agreed instances, to exploit products that include Autolus's modules for activity enhancement but do not express in vivo such modules, or the "**Activity Enhancement Option**"; and
- an option to obtain a non-exclusive worldwide license to exploit products that contain Autolus's safety switches or the "**Safety Switch Option**", and, together with the Binder Option and the Activity Enhancement Option, the "**Technology Options**".

The option exercise fee for each Technology Option is a low seven-digit amount. Each of the Activity Enhancement Option and the Safety Switch Option must be exercised with respect to a given biological target or combination of targets. There is a cap on the total option exercise fee if multiple Technology Options are exercised with respect to a given target.

There is also a cap on milestone payments across all agreements entered into as the result of our exercising one or more of the Technology Options and a cap on royalties payable on any given product for which multiple Technology Options are exercised.

Under the Autolus License Agreement, we have also agreed to financially support the expansion of the clinical development program for, and planned commercialization of, Autolus's lead product candidate obecabtagene autoleucel, known as obe-cel or AUCATZYL®. On November 8, 2024, the FDA approved obe-cel for the treatment of adults with relapsed or refractory B-cell precursor acute lymphoblastic leukemia. On April 25, 2025 it was announced that the UK Medicines and Healthcare products Regulatory Agency had granted conditional marketing authorization for obe-cel for the treatment of adult patients with relapsed or refractory B-cell precursor acute lymphoblastic leukemia. On May 23, 2025, it was announced that the European Medicines Agency's Committee for Medicinal Products for Human Use had recommended to the EU Commission the approval of obe-cel for the treatment of adult patients at least 26 years of age with relapsed/refractory B-cell precursor acute lymphoblastic leukemia. In exchange for Autolus's grant of rights to future revenues from the sales of obe-cel products, we made an upfront payment to Autolus of $40 million. Autolus will pay us a low single-digit percentage of annual net sales of obe-cel products, which may be increased up to a mid-single digit percentage in exchange for milestone payments of up to $100 million in the aggregate on achievement of certain regulatory events for specific new indications. We received the first revenue interest payment from Autolus in May 2025.

Under the terms of the Autolus License Agreement, Autolus has agreed to grant to us the option to negotiate a joint manufacturing and commercial services agreement pursuant to which the parties may access and leverage each other's manufacturing and commercial capabilities, in addition to Autolus's commercial site network and infrastructure, with respect to certain of each parties' CAR-T products, including our product candidate, BNT211, or the Autolus Manufacturing and Commercial Agreement. We have elected not to exercise this option and such option right has expired.

Unless earlier terminated, the Autolus License Agreement will continue for so long as royalties are payable in respect of Binder Licensed Products and the revenue interest is payable in respect of obe-cel products. Subject to a cure period, either party may terminate the Autolus License Agreement in the event of the other party's uncured material breach or the insolvency of the other party. We may terminate the Autolus License Agreement, in whole or in part, for any or no reason upon a specified period of prior written notice to Autolus.

11.6.2.2 Securities Purchase Agreement, Registration Rights Agreement and Letter Agreement

Concurrently with the execution of the Autolus License Agreement, we entered into a securities purchase agreement, or the "**Autolus Purchase Agreement**", pursuant to which we purchased from Autolus American depositary shares, or the "**Autolus ADSs**", each representing one ordinary share of Autolus, or the "**Autolus Ordinary Shares**", in a private placement transaction, or the "**Autolus Private Placement**".

At the initial closing on February 13, 2024, or the "**Initial Closing**", Autolus issued 33,333,333 Autolus ADSs, or the "**Initial ADSs**", to us for a total aggregate purchase price of $200 million. In the event that we and Autolus enter into a manufacturing and commercial agreement within 18 months of the Initial Closing, we have agreed to purchase additional Autolus ADSs, or the "**Subsequent ADSs**" and, together with the Initial ADSs, the "**Private Placement ADSs**", not to exceed 15,000,000 Autolus ADSs, for an aggregate purchase price of up to $20 million. The total number of Subsequent ADSs that may be issued is subject to additional limitations and restrictions. The Autolus Purchase Agreement contains customary representations, warranties, and covenants.

Concurrently with entry into the Purchase Agreement, we entered into a letter agreement, or the "**Autolus Letter Agreement**", providing us with certain additional rights and subjecting our investment in Autolus to certain restrictions. Pursuant to the Autolus Letter Agreement, we received the right to nominate a director to Autolus's board of directors. If we acquire beneficial ownership of at least 30% of the issued and outstanding Autolus Ordinary Shares within five years of the date of the Autolus Letter Agreement, we will have the right to designate an additional director, who shall be independent. Our director nomination rights under the Autolus Letter Agreement shall automatically terminate upon our ownership of Autolus Ordinary Shares dropping below certain specified percentages. Additionally, pursuant to the Autolus Letter Agreement, we have the right to purchase equity securities sold by Autolus in bona fide financing transactions in amounts that are based on our maintaining specified ownership thresholds following such financing transactions. Pursuant to the Autolus Letter Agreement, subject to specified exceptions, we may not sell the Private Placement ADSs without Autolus's approval for a period of six months following the applicable closing date for such Autolus ADSs. The Autolus Letter Agreement terminates upon the earlier of (a) the later of (i) three years from its signing date and (ii) such time as no securities of Autolus are held by us or our affiliates and (b) the consummation of a change of control transaction involving Autolus.

We and Autolus also entered into a registration rights agreement, pursuant to which Autolus filed a registration statement with the SEC to register the resale of the Private Placement ADSs.

11.6.3 DualityBio Global Strategic Partnership

In 2023, we entered into three license and collaboration agreements with DualityBio, which we refer to as the "**DualityBio Agreements**". Each of the DualityBio Agreements relates to specific ADC assets. The first agreement, the HER2 agreement, relates to the ADC asset targeting HER2 and was entered into on March 16, 2023. The second agreement, the B7H3 agreement, relates to the ADC asset targeting B7H3 and was entered into on March 31, 2023. The third agreement, the TROP2 agreement, relates to the ADC asset targeting TROP2 and was entered into on August 4, 2023.

Each of the three DualityBio Agreements relates to a license granted to us with respect to certain patents and know-how owned or otherwise controlled by DualityBio and our collaboration with DualityBio in the research and development of ADC therapeutics.

In each of the DualityBio Agreements, DualityBio granted us the exclusive, royalty-bearing and sublicensable right to exploit certain patents and know-how, which we refer to as the "**DualityBio IP**", for the research, development, manufacture and commercialization of the respective ADC compound and pharmaceutical products comprising such compound, which we refer to as the "**DualityBio Products**", in any field in the territory, which is all countries of the world except for mainland China, Hong Kong SAR and Macau SAR, which we refer to as the "**DualityBio Retained Territory**". We were also granted the sole right to exploit the DualityBio IP to develop and manufacture the DualityBio Products in the DualityBio Retained Territory solely for the purpose of developing, manufacturing and commercializing the DualityBio Products in the territory.

Each party has final decision-making authority and is generally responsible for clinical trial supply costs and regulatory activities and costs with respect to their respective territory.

We are responsible for the commercialization of any DualityBio Products in all countries worldwide other than the DualityBio Retained Territory.

The B7H3 agreement also grants DualityBio the option to share the development and commercialization costs and the profits and losses from the exploitation of the first original DualityBio Product in the United States. Under the B7H3 agreement, we have further granted to DualityBio the option to assume a percentage of the total sales force of the first original DualityBio Product in the United States.

In partial consideration of DualityBio's granting of the licenses and rights to us under the DualityBio Agreements, we have made upfront payments to DualityBio in an aggregate amount of $220 million. In addition, we agreed to make potential payments upon the achievement of specified development, regulatory and commercial milestones. Such milestone payments could amount up to $2.6 billion in the aggregate (the TROP2 agreement also provides for additional sales milestone payments in the event DualityBio works on, and we exercise, the option regarding the next-generation product). We further agreed to between single-digit to double-digit tiered royalties on net sales of all DualityBio Products, which also differ between the DualityBio agreements. Royalties are subject to stacking provisions and will be reduced in case of respective biosimilar products entering the market. Furthermore, we agreed to reimburse DualityBio for certain development costs.

The DualityBio Agreements end on a country-by-country and DualityBio Product-by-DualityBio Product basis upon expiration of the respective last DualityBio royalty term for a DualityBio Product in that country. Thereafter, the licenses granted to us with respect to such product in such country will convert into a perpetual, exclusive, fully paid-up and royalty-free license. In addition to termination rights granted to each party in the case of the other party's uncured material breach or insolvency, we may terminate each DualityBio Agreement, in whole or in part, for convenience upon prior written notice.

On November 12, 2024, we and DualityBio entered into a side letter to the DualityBio Agreements to undertake certain development activities in the territory and the DualityBio Retained Territory with DualityBio Products in combination with other product(s) that are proprietary to or owned or controlled by us or our affiliates.

11.6.4 Fosun COVID-19 Vaccine Collaboration

On March 13, 2020, we entered into a development and license agreement with Fosun Pharma for the development and commercialization in mainland China, Hong Kong special administrative region, or SAR, Macau SAR and in the region of Taiwan, or collectively the Fosun Collaboration Territory, of immunogenic compositions generated by BioNTech and comprising uridine RNA, modified RNA and/or replicon technology for prophylaxis against SARS-CoV-2 in humans. We refer to this agreement as the "**Fosun Agreement**".

The details of the development activities to be undertaken by Fosun Pharma are to be set forth in a development plan that is being overseen by a joint steering committee. Fosun Pharma's development activities are to be undertaken at its own cost and expense. Fosun Pharma has the sole responsibility to prepare, obtain and maintain regulatory approvals for the vaccine candidates in the Fosun Collaboration Territory. We agreed to give Fosun Pharma reasonable assistance with the regulatory aspects of these activities.

Fosun Pharma has the sole responsibility, authority and control of the commercialization of a vaccine candidate in the Fosun Collaboration Territory, but must use commercially reasonable efforts to do so in accordance with an agreed commercialization plan, including by launching a vaccine product in the Fosun Collaboration Territory within three months after receiving marketing approval for it, provided sufficient quantities of the vaccine have been delivered.

We retain the sole right to manufacture (or have manufactured) and supply any vaccine candidates and products for development purposes and commercial sale in the Fosun Collaboration Territory. We agreed to manufacture and supply all quantities of vaccine from a GMP-certified RNA manufacturing facility. As compensation for supply of the vaccine Fosun Pharma will reimburse us our manufacturing costs plus an administrative fee that is between 10 and 19 percent.

Under the Fosun Agreement, we granted Fosun Pharma an exclusive license under certain of our owned or in-licensed intellectual property, including our patents relating to replicons, uridine RNA and modified RNA and other mRNA technology or a vaccine to use, develop, commercialize and otherwise exploit the vaccine candidates in the Fosun Collaboration Territory. In the event of any failure of the development of a vaccine, we agreed to grant Fosun Pharma a right of first negotiation on a separate competent vaccine for the prophylaxis of COVID-19 in the Fosun Collaboration Territory.

In consideration of the rights granted to Fosun Pharma under the Fosun Agreement, Fosun Pharma subscribed for $50 million of our ordinary shares under a separate investment agreement. In addition, under the Fosun Agreement, Fosun Pharma made an upfront payment of $1 million and agreed to potential payments of up to $14 million upon the achievement of specified development and regulatory milestones and up to $70 million upon the achievement of specified sales milestones. Fosun Pharma further agreed to pay us a royalty rate that is between 30 and 50 percent of its profits on net sales of a vaccine product, if approved, for a period of 15 years from launch of that vaccine in the Fosun Collaboration Territory.

The Fosun Agreement ends upon expiration of the royalty term. Fosun Pharma may elect to continue to pay royalties and extend the agreement and its rights thereunder. In addition to termination rights granted to each party in the case of the other party's uncured material breach or insolvency, Fosun Pharma may terminate the agreement, in whole, for convenience and with or without reason at any time upon 180 days' prior written notice. If the agreement is terminated by Fosun Pharma for cause, the licenses to Fosun Pharma survive, we will manufacture and deliver the vaccine candidate or product for one year and we will grant a non-exclusive license to a reasonably acceptable contract manufacturing organization for manufacturing of the vaccine candidate or product thereafter for development and commercialization by Fosun Pharma in the Fosun Collaboration Territory.

During the term of the Fosun Agreement, we have committed not to license to any other third party in the Fosun Collaboration Territory the intellectual property licensed to Fosun for the same purpose and not to develop or commercialize the same vaccine candidate or any coronavirus vaccine in the Fosun Collaboration Territory.

11.6.5 Genentech iNeST Collaboration

11.6.5.1 Collaboration Agreement

On September 20, 2016, we entered into a collaboration agreement with Genentech and F. Hoffman-La Roche Ltd, together with all amendments thereto, collectively referred to as the "**Genentech Collaboration Agreement**", to jointly research, develop, manufacture and commercialize certain pharmaceutical products that comprise neoepitope RNAs, or the "**Genentech Collaboration Products**", which include our iNeST development candidates, for any use worldwide. Under the Genentech Collaboration Agreement, we and Genentech agreed to perform joint research under a research plan to further improve our technology platform for the manufacturing of Genentech Collaboration Products. Under the terms of the Genentech Collaboration Agreement, Genentech paid us $310 million in upfront and near-term milestone payments.

We and Genentech must use commercially reasonable efforts to jointly develop one or more Genentech Collaboration Products in accordance with an agreed global development plan, with the costs of such development to be shared equally. We continued certain clinical studies that were initiated prior to the execution of the Genentech Collaboration Agreement at our sole expense. Genentech may access and use any data generated in these clinical studies.

In addition to the clinical studies included in the global development plan, we may propose certain additional clinical studies for indications not included in the global development plan, and if the joint development committee formed by the parties does not elect to include the proposed studies in the global development plan, then we may conduct the study at our sole expense under certain conditions, and subject to certain restrictions. Genentech has the option to select any candidate in such studies for potential further joint development and/or commercialization by Genentech as a Genentech Collaboration Product. In the case that Genentech wishes to pursue the clinical development of a Genentech Collaboration Product in an indication that we are not interested in pursuing, then under certain conditions, we may opt out of the co-funding of such development and Genentech may continue do so at its own costs, except that we are obligated to repay Genentech's development costs in the event that such product subsequently receives regulatory approval.

Genentech has the sole right to commercialize the Genentech Collaboration Products on a worldwide basis, with all profits and losses from such commercialization to be split equally with us. If we exercise our right to opt out of sharing equally in future development costs for any Genentech Collaboration Products, then we will no longer split all such profits and losses for such Genentech Collaboration Products equally with Genentech and will instead receive a royalty on annual worldwide net sales of such Genentech Collaboration Products that are covered by a valid claim included in certain of our patents and certain joint patents that arise out of the collaboration. Furthermore, for certain Genentech Collaboration Products for which we share co-promotion rights with Genentech, we have the option to assume a percentage to be determined of the total sales force in the United States and certain other countries, including Germany and other major European markets. In addition, under certain regulatory and other circumstances, we have the right to independently commercialize Genentech Collaboration Products in indications that the joint development committee declines to pursue and that Genentech does not subsequently elect to commercialize, provided that we market such Genentech Collaboration Products under a separate brand and trademark that is approved by the joint commercialization committee established by the parties as not confusingly similar to the Genentech Collaboration Products being commercialized by Genentech. Our ability to research, develop, co-promote and/or independently commercialize Genentech Collaboration Products may be terminated or limited in the event we undergo a change of control.

We granted to Genentech an exclusive license under certain of our intellectual property, and our interest in any jointly-owned intellectual property developed under this agreement, to research, develop, make, sell and import any pharmaceutical products that comprise neoepitope RNA. Genentech granted to us an exclusive, non-transferable, sublicensable license under certain Genentech intellectual property, our intellectual property exclusively licensed to Genentech, and their interest in any jointly-owned intellectual property developed under this agreement for the performance of our ongoing clinical studies and the exercise of our rights and obligations under the Genentech Collaboration Agreement.

Until the first marketing approval for a Genentech Collaboration Product, we have granted Genentech the first right to negotiate an exclusive license to develop, manufacture and commercialize combination therapies involving pharmaceutical products based on neoepitope RNA and pharmaceutical products based on non-neoepitope RNA for the treatment of cancer in humans.

The Genentech Collaboration Agreement will remain in effect so as long as Genentech Collaboration Products are in development or commercialization, or until the date of the expiration of the last royalty term if BioNTech has exercised its option to opt-out of joint development of Genentech Collaboration Products. If the agreement expires, the licenses granted to Genentech become fully-paid up, royalty-free and irrevocable. Genentech may terminate the Collaboration Agreement if we fail to achieve certain milestone targets or at any time for convenience with or without reason upon 60 days' prior written notice. In the event of any such termination, all rights to the development and commercialization of Genentech Collaboration Products developed under the collaboration would revert to us and Genentech would grant us licenses under its intellectual property to further develop and commercialize Genentech Collaboration Products. We would be required to pay certain royalties to Genentech for such license(s). In addition, either party may terminate the agreement upon the other party's uncured material breach or insolvency.

11.6.5.2 Manufacturing Development and Supply Agreement

Concurrent with the Genentech Collaboration Agreement, we entered into a manufacturing development and supply agreement with Genentech and F. Hoffman-La Roche Ltd, or the "**Genentech Manufacturing Agreement**", which governs the manufacturing, related manufacturing development activities and supply of Genentech Collaboration Products. Pursuant to the Genentech Manufacturing Agreement, we are responsible for clinical manufacturing and supply, for developing and implementing manufacturing processes (including pursuant to specified target turnaround times), and for constructing, commissioning, qualifying and obtaining permits for the clinical facilities. We are permitted to subcontract certain steps in the clinical manufacturing process to our affiliate, BioNTech IMFS.

In addition, we are responsible for developing the commercial manufacturing process, which requires more stringent turnaround times than the clinical manufacturing process. Genentech will generally be responsible for conducting commercial manufacturing. We are obligated to use commercially reasonable efforts to achieve certain predetermined clinical manufacturing capacity commitments.

Under the Genentech Manufacturing Agreement, we and Genentech will jointly develop a manufacturing network plan detailing the location, capacity, scale-out, associated timing and other appropriate details of the commercial manufacturing facilities. We may participate in commercial manufacturing through our right to include as part of the commercial manufacturing network one of our own facilities in the European Union or the United States and one of our own facilities in another region to be agreed upon with Genentech (provided that in each region our facility is not the first facility to be included in the commercial manufacturing network).

11.6.6 Genmab Next-generation Immunomodulator Collaboration

On May 19, 2015, we entered into a license and collaboration agreement with Genmab, which was subsequently amended and supplemented by side letters, to jointly research, develop and commercialize polypeptide-based bispecific antibodies against certain target combinations for the treatment of cancer worldwide, or the "**Genmab Agreement Field**" using certain Genmab technology. In connection with our entry into that license and collaboration agreement, Genmab paid us an upfront fee of $10 million. On July 18, 2022, this agreement was amended and restated by an Amended and Restated License and Collaboration Agreement (which, as amended, is referred to as the "**Genmab Agreement**").

Under the Genmab Agreement, we and Genmab must use commercially reasonable efforts to research and develop clinical candidates, including our next-generation checkpoint immunomodulators, with costs split equally during the research and evaluation phase. Our joint activities in this phase were governed by a research plan, which was subject to annual review and updates, and which specifies the clinical candidates to be developed. This research and evaluation phase expired on September 18, 2022.

We and Genmab must use commercially reasonable efforts to develop candidates selected by the joint research committee, or the "**LCA Products**", through preclinical and clinical development. The preclinical and clinical development of the LCA Products would be performed pursuant to a development plan to be agreed upon by us and Genmab, with costs to be split equally. The joint steering committee may designate a third party as a manufacturer of an LCA Product or of any of its components.

We and Genmab must use commercially reasonable efforts to jointly commercialize all LCA Products and share equally all expenses and profits arising from such commercialization. We and Genmab, on a product-by-product basis and at least 12 months prior to the anticipated start of a pivotal clinical trial for an LCA Product, will jointly designate between the two of us a lead party responsible for establishing the distribution and marketing operations in each geographical region. Each party would be entitled to equally co-commercialize the products pursuant to a separately negotiated global commercialization agreement that the parties agree to negotiate.

Unless otherwise agreed by the joint steering committee established under the agreement, Genmab is responsible for all regulatory actions and shall own all regulatory approvals obtained for the LCA Products. Genmab is obligated to provides regular updates to us on regulatory activities.

Each party grants to the other party a worldwide, co-exclusive, sublicensable, royalty-free license under certain of such first party's intellectual property, including certain patents and know-how, to perform the research under this agreement and to research, develop, make, import, use and sell LCA Products in the Genmab Agreement Field pursuant to the terms of the Genmab Agreement. These licenses shall continue on a country-by-country and product-by-product basis for as long as development or commercialization activities are contemplated under the Genmab Agreement.

During the preclinical and clinical development phase for any LCA Product, engagement in research and development activities in the Genmab Agreement Field unilaterally by a party relating to an LCA Product or its Back-up Candidate or any bispecific antibody which targets the same target combination for which such LCA Product or Back-up Candidate has been developed would require the other party's prior written consent.

Each party has the right to discontinue its participation in the further development and commercialization of an LCA Product at two points: (i) when an IND submission package has been agreed upon by the parties and (ii) when the draft clinical trial report from the first Phase 1/2 clinical trial becomes available. The other party may elect to continue the development and commercialization of the LCA Product or divest its interest in such LCA Product. If the other party elects to pursue development and commercialization of such LCA Product alone as a unilateral product, at its sole cost and subject to pre-defined milestone and royalty payments and certain additional pre-defined terms. If the other party wishes to not pursue such continued development and commercialization on such pre-defined payment and additional terms, then the parties will jointly divest their interest in such LCA Product to a third party, and if such divestiture fails, the parties will cease all development and commercialization of such LCA Product.

The Genmab Agreement will remain in effect until the later of (i) the expiration of the last-to-expire royalty term for any unilateral product or (ii) the time when no LCA Products, joint combination products or proprietary combination products are being developed or commercialized under this agreement. Either party may terminate the agreement in its entirety or on a product-by-product basis with immediate effect upon the other party's uncured material breach or insolvency.

On August 5, 2022, we and Genmab expanded our global strategic collaboration to develop and commercialize novel immunotherapies for the treatment of cancer patients. Under this expansion, we and Genmab will jointly work to research, develop and commercialize novel monospecific antibody candidates for various cancer indications.

Under the expanded collaboration, the companies will jointly develop and commercialize, subject to regulatory approval, monospecific antibodies leveraging Genmab's proprietary HexaBody technology platform. The first monospecific antibody candidate, GEN1053/BNT313, entered clinical trials in late 2022. GEN1053/BNT313 is a CD27 antibody based on the HexaBody technology, specifically engineered to form an antibody hexamer (a formation of six antibodies) upon binding its target on the cell membrane of the T cells. Under the terms of the agreement, the companies will equally share the development costs and potential future profit deriving from GEN1053/BNT313.

11.6.7 OncoC4 Collaboration

On March 17, 2023, we and OncoC4 entered into a license and collaboration agreement, or the "**OncoC4 Agreement**", for the license, development and commercialization of ONC-392 and all other monoclonal anti-CTLA4 antibodies owned or controlled by OncoC4 (referred to as "**OncoC4 Licensed Compounds**") as of the execution date, including development of combinations of such antibody with other products, for use in humans or animals, or the "**OncoC4 Field**".

OncoC4 granted us an exclusive license under ONC-392 and OncoC4's interest in joint intellectual property to exploit OncoC4 Licensed Compounds and any pharmaceutical or biologic product containing OncoC4 Licensed Compound (referred to as "**OncoC4 Licensed Products**") in the OncoC4 Field in the entire world, which we refer to as the "**OncoC4 Territory**". Furthermore, OncoC4 granted us an exclusive option that ended June 30, 2024 to license AI-061, which is a biopharmaceutical composition containing as its sole active ingredients both ONC-392 and an anti-PD-1 antibody. OncoC4 retains all rights to the anti-PD-1 antibody outside of the combination with ONC-392.

We agreed to collaborate on research, development, and commercialization of ONC-392 in the OncoC4 Territory and to use commercially reasonable efforts to conduct development activities of OncoC4 Licensed Compounds and OncoC4 Licensed Products either as a monotherapy or in combination with an anti-PD-(L)1 antibody and/or standard of care product (which we refer to collectively as the "**Mono/PD-1/SOC Combinations**") in accordance with a joint clinical development plan which is governed by a joint steering committee. All costs associated with the joint development responsibilities are shared equally between us and OncoC4.

We are solely responsible for all development activities for the OncoC4 Licensed Compounds and OncoC4 Licensed Products in any other form or combination other than the Mono/PD-1/SOC Combinations (we refer to such other combinations as "**OncoC4 Other Combinations**") at our own expense and in accordance with a research and development plan prepared by us and shared with OncoC4 through the joint steering committee. We agreed to use commercially reasonable efforts to develop an OncoC4 Licensed Product in at least one indication for an OncoC4 Other Combination. We agreed to first offer OncoC4 the opportunity to co-fund any development of a PD-1 Combination prior to pursing such development independently or with a third party.

We agreed to be solely responsible, at our expense, for commercialization of OncoC4 Licensed Products worldwide and to use commercially reasonable efforts to commercialize OncoC4 Licensed Products for each approved indication in certain major markets.

In consideration for the rights granted to us by OncoC4, we made an upfront payment of $200 million, with a portion of the upfront payment to be used to fund OncoC4's share of the joint research and development costs related to ONC-392, and agreed to make potential payments upon the achievement of specified development and regulatory milestones and upon the achievement of specified sales milestones. We have further agreed to pay OncoC4 double digit, tiered royalties on annual net sales of OncoC4 Licensed Products during a certain royalty term starting from launch of product.

The OncoC4 Agreement shall continue until the last-to-expire royalty term in all countries in the OncoC4 Territory for all OncoC4 Licensed Products. Upon the expiration of the royalty term for an OncoC4 Licensed Product in a given country in the OncoC4 Territory, the exclusive license granted to us will become a perpetual, irrevocable, non-exclusive, fully paid-up, and royalty-free license with respect to such OncoC4 Licensed Product in such country. In addition to termination rights granted to each party in the case of the other party's uncured material breach or insolvency, we have the right to terminate the OncoC4 Agreement in its entirety for convenience with prior written notice to OncoC4.

11.6.8 Pfizer COVID-19 Vaccine Collaboration

On April 9, 2020, effective as of March 17, 2020, we entered into a collaboration agreement with Pfizer for the research and development of immunogenic compositions comprising RNA encoding a SARS-CoV-2 polypeptide or fragment thereof for prophylaxis against SARS-CoV-2 in humans, which we refer to as the "**Pfizer Corona Field**". On January 29, 2021, effective as of March 17, 2020, we entered into an amended and restated collaboration agreement with Pfizer for the research, development and commercialization of immunogenic compositions comprising RNA in the Pfizer Corona Field, which we refer to as the Pfizer Agreement.

We and Pfizer agreed to collaborate on research, development and commercialization in the Pfizer Corona Field worldwide (excluding the Fosun Collaboration Territory), which we refer to as the "**Pfizer Collaboration Territory**". The details of such activities are set forth in a research and development plan that is governed by a joint steering committee. Each party bears its own personnel and capital expenditures costs, but the parties will share the costs of all other agreed development activities (including the costs of manufacturing material for use in clinical trials) evenly. Each party will, in good faith, seek funding from government funds, non-governmental organizations and other third-party organizations to support their research and development activities. Under the Pfizer Agreement, Pfizer is leading clinical development of and is seeking regulatory approval for any candidates or products in the United States and we are leading clinical development of and are seeking regulatory approval for any candidates or products in the European Union, and we will agree on a strategy for all other countries in the Pfizer Collaboration Territory on an ongoing basis through the joint steering committees.

BioNTech can solely commercialize the vaccine in Germany and Türkiye (collectively referred to as the "**BioNTech Commercialization Territory**", which is a subset of the Pfizer-Collaboration Territory). We have the option to opt-out of commercializing the vaccine in Germany and/or Türkiye, whereupon such countries will become part of the Pfizer Commercialization Territory of the Pfizer Collaboration Territory.

Pfizer has the right to commercialize any approved COVID-19 vaccine in the rest of the Pfizer Collaboration Territory. On a country-by-country basis in relation to the United Arab Emirates, Southeast Asia, and certain developing countries, if we obtain funding from a third-party organization that obligates us to commercialize an approved vaccine in such country, we are obligated to request from Pfizer in writing a decision as to whether Pfizer wishes to commercialize or distribute such vaccine in such country in accordance with the requirements agreed with the third-party funder. If Pfizer elects not to commercialize the vaccine in such country, then such country shall become a part of the BioNTech Commercialization Territory.

If our collaboration agreement with Fosun expires or is otherwise terminated for any reason, as between us and any international pharmaceutical group headquartered outside of China, we have granted Pfizer a right of first negotiation to expand the Pfizer Commercialization Territory to include the Fosun Collaboration Territory. See section "*11.6.4 Fosun COVID-19 Vaccine Collaboration*" for more information on the Fosun Agreement.

We and Pfizer share responsibilities for manufacturing and supplying our approved COVID-19 vaccines. If there is insufficient supply to satisfy the entire demand for vaccines in the Pfizer Collaboration Territory, we and Pfizer have agreed to determine by mutual consent the allocation of supplies on a fair and equitable basis, subject also to any applicable law, export controls, and taking into account any government supply obligations, or supply obligations included in any agreement reached with a third-party funding organization.

Under the Pfizer Agreement, we have granted Pfizer an exclusive, sublicensable license in the Pfizer Collaboration Territory under certain of our intellectual property, including our patents and know-how, relating to uridine RNA, modified RNA and replicons in the Pfizer Corona Field as well as certain intellectual property in-licensed by us from third parties, to use, research, develop, manufacture, commercialize and otherwise exploit candidates and products selected under the Pfizer Agreement. We undertake to maintain in full effect all intellectual property licenses held by us at the time we entered into the Pfizer Agreement and not to modify or amend any such license in a manner that would adversely affect any of the rights granted to Pfizer under the Pfizer Agreement. We are obligated to notify Pfizer of any breach of our current licenses and may be obligated to take steps to maintain Pfizer's access to any intellectual property licensed under such licenses. Under the Pfizer Agreement, we are obligated to indemnify Pfizer with respect to certain patent infringement claims that Pfizer elects to control.

During the term of the Pfizer Agreement and a certain period thereafter, we and Pfizer have committed not to research, develop, manufacture, commercialize or otherwise exploit immunogenic compositions comprising RNA in the Pfizer Corona Field, or exploit vaccine candidates or products developed under the agreement for any use, other than pursuant to the Pfizer Agreement, provided, however, that Pfizer shall have the right to work as a contract manufacturer for a third party and Pfizer shall not be precluded from acquiring a third party, or being acquired by a third party, that at the time of acquisition is active in the development or commercialization of an immunogenic composition comprising mRNA in the Pfizer Corona Field.

On April 9, 2020, Pfizer also subscribed for $113 million of our ordinary shares under a separate investment agreement. In addition, under the Pfizer Agreement, Pfizer made an upfront payment of $72 million and agreed to make potential payments of up to $563 million upon the achievement of specified regulatory and commercial milestones. We and Pfizer agreed to share development costs equally. We and Pfizer will share the gross profits from commercializing a vaccine evenly, as well as the costs for shipping. The Pfizer Agreement continues for so long as either at least a vaccine is being developed for use in the Pfizer Collaboration Territory or a vaccine is being commercialized anywhere in the Pfizer Collaboration Territory. In addition to termination rights granted to each party in the case of the other party's uncured material breach, Pfizer may terminate the agreement (i) upon our insolvency or (ii) on a country-by-country basis or in its entirety for convenience upon one (1) year's prior written notice provided that any such termination shall not become effective less than two (2) years from the first commercial sale of an approved vaccine.

11.7 Our Intellectual Property

11.7.1 Overview

We pursue a layered intellectual property strategy to protect our various technology platforms and their application to the treatment of serious diseases, such as cancer and infectious diseases including COVID-19. One focus of our intellectual property strategy is to provide protection for our platforms and products as they are developed. We also pursue intellectual property protection for assets that may be used in future development programs, may be of interest to our collaborators, and/or otherwise may prove valuable in the field.

Various aspects of our technology platforms and our product candidates are claimed in patent filings. We also pursue other modalities of intellectual property protection, including trademark and trade secret protection, as appropriate. Many of our intellectual property assets were developed and are owned solely by us, some have been developed via collaboration and are jointly owned, and some have been acquired by acquisition and/or licensed from third parties. We expect that we will continue to make additional patent application filings, and will continue to pursue opportunities to acquire and license additional intellectual property assets, technologies, platforms and/or product candidates, as developments arise or are identified.

Regardless, we cannot be certain that any of the patent filings or other intellectual property rights that we have pursued or obtained will provide protection for any products as commercialized. As further variants of SARS-CoV-2 arise, and its impact and characteristics evolve, the composition, manufacture, and use (including, e.g., dosage regimen) of our COVID-19 vaccine products may be adjusted or modified and our filings may not protect them.

Our future commercial success depends, in part, on our ability to obtain and maintain patent and other proprietary protection for commercially important technology, inventions and know-how related to our business; defend and enforce our patents and other intellectual property; preserve the confidentiality of our trade secrets; and operate without infringing, misappropriating or violating the valid and enforceable patents and other intellectual property rights of third parties. Our ability to stop third parties from making, using, selling, offering to sell or importing our products may depend on the extent to which we have rights under valid and enforceable patents, trade secrets or other intellectual property rights that cover these activities. With respect to both our owned and licensed intellectual property, we cannot be sure that patents will issue with respect to any of the owned or licensed pending patent applications or with respect to any patent applications that we, our co-owners or our licensors may file in the future, nor can we be sure that any of our owned or licensed patents or any patents that may be issued in the future to us or our licensors will be commercially useful in protecting any products that we ultimately attempt to commercialize or any method of making or using such products. Moreover, we may be unable to obtain patent protection for certain of our product candidates generally as well as with respect to certain indications. See section "*1.6 Risks Related to Intellectual Property*".

As of January 1, 2025, our overall owned and in-licensed patent portfolio included more than 480 patent families, each of which includes at least one filing in the United States or Europe, and several of which are pending or granted in multiple jurisdictions. The patent families include at least 405 patent families that are solely or jointly owned by BioNTech, including certain families acquired through our acquisitions and others that we have licensed from a third party.

An issued patent provides its owner (or possibly its licensee) with a right to exclude others from making, using or selling that which is claimed in the patent, for a specified period of time (the „term" of the patent), in the jurisdiction in which the patent is issued. In the United States, and in many other countries, patents have a presumptive term of 20 years from their effective filing date (which is the earliest non-provisional filing date to which the patent claims priority). However, many jurisdictions, including the United States, require the payment of periodic maintenance fees in order for patents to remain in force for the full 20-year term. The United States also has provisions that require a patent term to be shortened if its claims are too similar to another patent owned by the same party that has a shorter term. The United States and certain other jurisdictions also have provisions that permit extension of patent term for patents that claim a drug or drug product, or its approved use, if the patent was issued before clinical trials were completed and certain other requirements were satisfied. In the United States, such extension is called a Patent Term Extension, or "**PTE**", and it is limited to a period of not more than five years, or the total patent term including the PTE cannot exceed 14 years after the date of regulatory approval; only one patent can be extended per product approval. We did not extend any patent for our COVID-19 vaccine (*Comirnaty*) when it was approved by the FDA in the United States in 2021. The United States also offers a different form of patent term extension, known as Patent Term Adjustment, or "**PTA**", whereby a particular patent's term is automatically extended beyond the 20-year date if the U.S. Patent and Trademark Office caused delay during its examination; however, potentially available PTA is reduced by any amount of any delay caused by the patent applicant.

Below, we provide a summary of the contours of our current patent portfolio as it relates to different aspects of relevant technology, including noting ownership and patent terms for filings included in the portfolio that are directed to such aspects. Particularly given our pre-commercial state of development for many product candidates, we cannot be certain that any of the patent filings in our portfolio will provide meaningful protection for products that we do or attempt to commercialize.

11.7.2 Patent Portfolio

The patent portfolios for our most advanced programs are summarized below. Patent prosecution is a lengthy process, during which the scope of the claims initially submitted to the U.S. Patent and Trademark Office and similar authorities for examination can be significantly narrowed by the time they issue, if they issue at all. We expect this could be the case with respect to some of our pending patent applications referred to below.

11.7.2.1 mRNA

The patent portfolio for our mRNA therapeutic platforms and product candidates includes patent filings directed to features of therapeutic mRNA structures, some of which are included in our COVID-19 vaccine and in current development candidates. Our patent portfolio also includes patent filings directed to mRNA formulations (including their production and use), including the lipoplex formulations currently utilized with our FixVac and iNeST platforms, and the lipid nanoparticles currently utilized with our mRNA, RiboMab and RiboCytokine platforms, as well as patent filings directed to mRNA manufacturing, and to uses of mRNA therapeutics. We provide more detail below regarding the patent filings directed to these features.

11.7.2.1.1 mRNA Structure

Our patent portfolio includes patent filings directed to various features of mRNA structure, which may, for example, contribute to increased immunogenicity (e.g., antigen presentation), translation efficiency, and/or stability of mRNA constructs that include them. Such features include, for example, antigen-MHC fusions, 5' cap structures and related features, 3' UTR structures, polyA tails, reduced-uracil content mRNAs, and modified nucleoside RNAs. Filings directed to each of these features, and/or to RNA constructs that include them (singly or in combination), or collectively, the "**mRNA Structure Filings**", have been made in the United States and various other jurisdictions. Some such mRNA Structure Filings are owned solely by BioNTech SE, which are referred to collectively in this section as BioNTech, some jointly by BioNTech and one or more third parties, and some by BioNTech licensors, such as Louisiana

State University and Agricultural and Mechanical College, or "**LSU**", and the terms of the applicable agreement with LSU, are further summarized below in section "*11.7.3 In-Licensing*". We have non-exclusive rights to use certain U.S. and European patent filings owned by University of Pennsylvania and relating to RNA containing modified nucleosides through our sublicense agreements with mRNA RiboTherapeutics, Inc., or "**MRT**", and CellScript, collectively, the "**MRT-CellScript Sublicenses**", and summarized below in section "*11.7.3 In-Licensing*". Issued existing mRNA Structure Filings have, and pending existing mRNA Structure Filings, if issued, would have, 20-year terms that extend into the mid-2020s to the early-2040s.

11.7.2.1.2 mRNA Formulations

Our patent portfolio includes patent filings directed to various formulations for mRNA delivery, some of which are utilized with current development candidates. For example, our portfolio includes patent filings directed to lipoplex formulations and preparations thereof or collectively, the "**mRNA Lipoplex Filings**". Issued mRNA Lipoplex Filing(s) has/have, and pending existing mRNA Lipoplex Filings, if issued, would have, 20-year terms that extend into the mid to late-2030s or early 2040s. Such mRNA Lipoplex Filings are solely owned by BioNTech or jointly owned by BioNTech and TRON.

In addition, our portfolio includes U.S. and other patent filings directed to lipid nanoparticles and polyplex technologies, which are solely owned by BioNTech or jointly owned by BioNTech and TRON, or collectively, the "**mRNA Lipid Nanoparticle/Polyplex Filings**". Issued mRNA Lipid Nanoparticle/Polyplex Filings have, and pending mRNA Lipid Nanoparticle/Polyplex Filings, if issued, would have, 20-year terms that extend into the mid- to late 2030s or early 2040s. Some of such mRNA Lipid Nanoparticle/Polyplex Filings were granted in certain foreign jurisdictions, and currently include U.S. issued patents. The terms of the co-ownership of such patent filings with TRON are summarized below in section "*11.7.3 In-Licensing*".

11.7.2.1.3 mRNA Manufacturing

As discussed below, we utilize trade secret protection for many aspects of our mRNA manufacturing technologies, including as currently utilized for production of certain of our development candidates. In addition, our patent portfolio includes certain patent filings relevant to mRNA manufacturing, or collectively, the "**mRNA Manufacturing Filings**", which we believe may provide commercial value to protect product candidates and/or support collaborations or other licensing arrangements. For example, our mRNA Manufacturing Filings include U.S. and other patent filings relating to certain aspects of mRNA purification and production. These mRNA Manufacturing Filings are either solely owned by BioNTech, or jointly owned by BioNTech and TRON and, if issued, would have 20-year terms that would extend into the mid-2030s to early 2040s; there are patents granted in certain foreign jurisdictions including EP, but no U.S. patent was yet issued.

11.7.2.1.4 mRNA Commercial Products and Product Candidates

Our COVID-19 vaccine (BNT162b2), marketed as *Comirnaty*, is our most advanced mRNA product. Additional COVID-19 vaccine candidates, as well as various dosing regimens and use in patient populations with certain medical conditions are being tested in clinical trials.

11.7.2.1.5 Comirnaty and Other COVID-19 Vaccine mRNA Product Candidates

Both our current and previously-marketed monovalent and bivalent COVID-19 vaccines utilize modified-nucleoside mRNA formulated in lipid nanoparticles.

Our platform patent filings relevant to our COVID-19 vaccines, collectively, the "**BNT162b2 Platform Filings**", include certain mRNA Structure Filings relating to features for increasing translation efficiency and/or stability of mRNA constructs (e.g., certain 3' UTR structures containing a specific sequence element, interrupted polyA tails, and certain 5' cap/cap proximal sequence combinations), including filings that are jointly owned by BioNTech and TRON; also relevant are certain mRNA Manufacturing Filings. Issued BNT162b2 Platform Filings have, and pending BNT162b2 Platform Filings, if issued, would have 20-year terms extending into the late 2020s to the early 2040s. We also have undertaken various patent filings specifically related to the BNT162b2 structure (including as may be tailored based on particular SARS-CoV-2 variants), composition, formulation, packaging, use and/or manufacture, collectively the BNT162b2 Filings, including filings that have arisen through collaboration with third parties such as Pfizer. Such filings relevant to our COVID-19 vaccines, if issued, would have 20-year terms that would extend into the early 2040s.

As noted above, our MRT-CellScript Sublicenses grant us rights to use certain U.S. and European patents and applications relating to mRNA containing modified nucleosides, including as used in BNT162b2. We also have a non-exclusive license from the National Institutes of Health granting us a right to use certain technology described in U.S. and European patent filings that may relate to SARS-CoV-2 spike (S) protein mutations that lock the S protein in an antigenically preferred prefusion conformation; such a variant is utilized in BNT162b2.

Additionally, we have obtained third-party licenses to technologies relating to certain lipids and/or lipid nanoparticles and formulations used in BNT162b2, including a non-exclusive license from Acuitas granting use rights relevant to proprietary lipid nanoparticles and formulations used in BNT162b2.

Additional COVID-19 vaccine mRNA product candidates are being developed and tested in clinical trials, which share with BNT162b2 certain structural elements, and/or features of the composition, formulation, packaging, use and/or method of manufacture. Thus, some or all of the BNT162b2 Platform Filings and/or BNT162b2 Filings, as well as the in-licensed rights discussed above with respect to BNT162b2, may be relevant to certain of these candidates.

Moreover, we are currently studying safety and efficacy of our COVID-19 vaccines and vaccine candidates in various dosing regimens (including booster doses) and/or in different age groups and/or individuals with various medical conditions, and also in combination with other vaccines or therapies. Certain of our patent filings, including certain BNT162b2 Filings, cover such uses being tested in clinical trials.

11.7.2.1.6 Oncology mRNA Product Candidates

Certain mRNA oncology product candidates are also in clinical development and involve various platforms. Some of our most advanced clinical oncology programs involve our *iNeST* immunotherapy product candidates being developed with our collaborator, Genentech. We also have *FixVac* product candidates in clinical trials.

FixVac

Our *FixVac* product candidates share many of the structural elements involved in our *iNeST* product candidates. Thus, some or all of the mRNA Structure Filings and mRNA Lipoplex Filings relevant to our *iNeST* product candidates and discussed below are also relevant to our *FixVac* product candidates. These patent filings, or the "**FixVac Platform Filings**", include mRNA Structure Filings relating to antigen-MHC fusions, certain 5' cap structures, 3' UTR structures containing a specific sequence element, and interrupted polyA tails, which are solely or jointly owned by BioNTech or BioNTech's licensors. Issued *FixVac* Platform Filings have, and pending FixVac Platform Filings, if issued, would have, 20-year terms extending into the mid-2020s to the mid-2030s. While we have pursued or obtained patent protection covering components of *FixVac* product candidates, manufacturing-related methods and/or formulations, we do not currently have any claims in our owned or in-licensed issued patents that cover the overall construct used in our *FixVac* product candidates.

Our patent portfolio further includes U.S. and other patent filings relating to combined uses of our FixVac and iNeST product candidates. Such issued patent filings have, and such pending patent filings, if issued, would have, 20-year terms that extend into 2033, and are jointly owned by BioNTech and TRON.

Our current clinical trials for FixVac product candidates are studying such product candidates in treatment of various cancers. While we do not currently have any claims in our owned or in-licensed issued patents that are directed to use of our FixVac product candidates in the indications of these clinical trials, certain FixVac Platform Filings include specific reference to treatment of these indications, and if issued, would have 20-year terms extending into the mid-2030s.

iNeST

Our patent filings relevant to our iNeST product candidates include mRNA Structure Filings relating to features for increasing antigen presentation (e.g., antigen-MHC fusions) and features for increasing translation efficiency and/or stability of mRNA constructs (e.g., certain 5' cap structures, 3' UTR structures containing a specific sequence element, and polyA tails of a particular length or interrupted polyA tails); mRNA Lipoplex Filings relating to negatively charged lipoplexes (e.g., for spleen targeting); and mRNA Manufacturing Filings, or collectively, the "**iNeST mRNA Platform Filings**". While we have pursued or obtained patent protection covering components of iNeST product candidates, manufacturing-related methods and/or formulations, we do not currently have any claims in our owned or in-licensed issued patents that cover the overall construct used in our iNeST product candidates.

Our patent portfolio further includes U.S. and other filings directed to the process of identifying neoantigens in patient samples and/or predicting those that will be immunoreactive in an iNeST immunotherapy product, or collectively, the "**Neoantigen Filings**". Certain issued Neoantigen Filings have, and certain pending Neoantigen Filings, if issued, would have 20-year terms that extend into the 2030s. Many of the Neoantigen Filings are solely owned by BioNTech, or jointly owned by BioNTech and TRON; our acquisition of Neon Therapeutics, Inc., or "**Neon**", added various Neoantigen Filings, including both BioNTech U.S.-owned and in-licensed filings. BioNTech and TRON jointly own issued EP patent number 2714071, whose claims recite steps relating to neoantigen selection, that were unsuccessfully opposed by multiple third parties. Said third parties have unsuccessfully appealed the decision to reject such opposition and the patent was maintained as granted. In addition, related EP patent number 3473267 with claims reciting steps relating to neoantigen selection for an RNA vaccine encoding a recombinant polyepitopic polypeptide was unsuccessfully opposed by a single third party. Said third party has instigated appeal proceedings against this decision. Related EP patent number 3892295 from the same patent family with claims reciting steps relating to neoantigen selection for an RNA vaccine encoding a recombinant polyepitopic polypeptide is being opposed by a third party; claims in related U.S. cases are granted. If we are unsuccessful in these opposition/appeal proceedings, the patent claims for our iNeST product candidates may be narrowed, or a patent may not issue at all. See section "*1.6 Risks Related to Intellectual Property*".

We are currently studying our iNeST product candidates in several clinical trials. Certain iNeST mRNA Platform Filings and Neoantigen Filings cover treatment of each of these indications. However, we do not currently have any claims in our owned or in-licensed issued patents that are directed to use of iNeST product candidates in the indications of these clinical trials.

RiboMabs and *RiboCytokines*

We own or license a number of patent filings directed to our RiboMab and RiboCytokine programs. Many are owned solely by us, some are jointly owned, and some have been acquired or licensed.

Patent filings relevant to our *RiboMab* and *RiboCytokine* programs include certain mRNA Structure Filings that are also relevant to our iNeST and/or *FixVac* product candidates, including certain patent filings relating to 3' UTR structures containing a specific sequence element, and interrupted polyA tail structures; and patent filings under the MRT-CellScript Sublicenses relating to nucleoside-modified mRNAs as well as certain patent filings we have licensed from Acuitas and Genevant relating to lipid or non-liposomal formulations.

11.7.2.1.7 Infectious Diseases beyond COVID-19

Certain patent filings that might be useful to our infectious disease mRNA vaccines beyond our COVID-19 vaccine program include certain of the mRNA Structure Filings and the mRNA Lipid Nanoparticle/Polyplex Filings as well as certain patent filings under the MRT-CellScript Sublicenses, which include patent filings directed to nucleoside-modified mRNAs. Certain patent filings relating to certain features of self-amplifying RNAs and/or trans-amplifying RNAs may also be relevant, including filings jointly owned by BioNTech SE and TRON; such filings are collectively referred herein as Amplifying RNA Filings. Such Amplifying RNA Filings, if issued, would have 20-year terms that extend into the late-2030s to early-2040s. These Amplifying RNA Filings currently include granted patents in Europe and the United States. We have also undertaken and continue to undertake filings specific to particular product candidates.

We have also licensed technologies relating to certain lipids and/or lipid nanoparticles and formulations that may be useful for certain infectious disease mRNA vaccines.

11.7.2.2 Cell Therapy

11.7.2.2.1 Engineered Cell Therapy

Our engineered cell therapy product class features the use of chimeric antigen receptor (CAR)T- cell or individualized T-cell receptors (TCRs) for oncology therapy. Our patent filings relevant to these platforms and product candidates, or the "**CAR-T/TCR Filings**", are generally solely owned by BioNTech SE or co-owned by BioNTech SE, and TRON. For example, the CAR-T/TCR Filings include patent filings directed to various CAR-T formats and methods of enhancing CAR-T cells by nucleic acid vaccination, as well as patent filings directed to compositions of matter comprising individualized T-cell receptors. The CAR-T/TCR Filings, if issued, would have patent terms that would extend into the mid-2030s to mid-2040s.

Certain CAR-T programs involve CAR-T-cell product candidates that target different members of the claudin family. Our patent portfolio includes certain patent filings specifically relevant to our claudin-specific CAR-T cell product candidates and are jointly owned by BioNTech SE and TRON, or the "**Claudin-Specific CAR-T Cell Filings**". The issued Claudin-Specific CAR-T Cell Filings have, and the pending Claudin-Specific CAR-T Cell Filings, if issued, would have, 20-year terms extending into the mid-2030s. The terms of our co-ownership of such patent filings with TRON are summarized below in section "*11.7.3 In-Licensing*".

11.7.2.2.2 Activated T Cells

Our acquisition of Neon included technologies for using peripheral blood mononuclear cells, or "**PBMCs**", (e.g., collected from apheresis material of patients) as a starting material to induce and/or expand ex vivo functional T cells specific for therapeutically relevant neoantigens.

Our BNT221 program, formerly Neon's NEO-PTC-01 program, is a personalized adoptive T-cell therapy, which uses multiple T-cell populations expanded from an individual patient's PBMCs that together target a set of neoantigens expressed by that patient's tumor.

Patent filings relevant to BNT221, referred to herein as the "**T Cell Induction/Expansion Filings**", are generally solely owned by BioNTech US, or co-owned by BioNTech US and the Netherlands Cancer Institute (NKI). For example, the T Cell Induction/Expansion Filings include patent filings directed to therapeutic T cell compositions and methods of ex vivo induction and/or expansion of antigen-specific T cells. An issued subsisting T-cell Induction/Expansion Filing in the United States has, and pending T Cell Induction/Expansion Filings, if issued, would have, patent terms that extend into the late-2030s to early-2040s.

11.7.2.3 Antibodies

Our antibodies product class features bispecific checkpoint immunomodulators for oncology therapy, which are developed through collaboration with Genmab. Our development candidates include bispecific antibodies that are designed to activate 4-1BB upon simultaneous binding to CD-40 or EpCAM. Our patent portfolio includes certain patent filings relevant to such bispecific antibodies, or the "**Bispecific Checkpoint Modulator Filings**", co-owned by us and Genmab. Such Bispecific Checkpoint Modulator Filings, if issued, would have 20-year terms that would extend into the late 2030s.

Our collaboration with Genmab also includes development of monospecific antibody candidates to address malignant solid tumors. For example, BNT313 is a CD27 antibody based on Genmab's proprietary HexaBody technology platform, specifically engineered to form an antibody hexamer (a formation of six antibodies) upon binding its target on the cell membrane of the T cells. We have also undertaken and continue to undertake filings specific to particular product candidates.

We own patent assets acquired from MabVax Therapeutics Holding, Inc., or the "**MabVax Filings**", that relate to various antibodies, including certain antibodies targeting sialyl Lewis A and ganglioside GD2, as well as nucleic acid encoding them. Issued MabVax Filings have, and the pending MabVax Filings, if issued, would have 20-year terms that extend into the mid-2030s.

Our patent portfolio also includes certain patent filings relevant to the structure of BNT327, a bispecific antibody targeting PD-L1 and VEGF-A, collectively the BNT327 Filings. Such BNT327 Filings, if issued, would have 20-year terms into the early 2040s.

11.7.2.4 Small Molecule Immunomodulators

Our small molecule therapeutics product class features oncology treatment using small molecule product candidates that activate the immune system via TLR7 agonism. Our patent portfolio includes patent filings relevant to these TLR7 agonists. Certain of these filings are directed to substituted imidazoquinolines, and, if issued, would have 20-year terms that would extend into the late 2030s.

In addition to the intellectual property discussed in this section, we have entered into in-licensing and collaboration agreements with third parties with respect to certain intellectual property. Such intellectual property is described in section "*11.6 Third-Party Collaborations*" above and section "*11.7.3 In-Licensing*" below

11.7.3 In-Licensing

Some of our intellectual property assets have been acquired by acquisition and/or in-licensing.

We have pursued a strategy of identifying and in-licensing third-party patents that we believe are complementary to or otherwise interact synergistically with our own intellectual property portfolio. In addition to the agreements described in section "*11.6 Third-Party Collaborations*" above, we have entered into material intellectual property licensing or option arrangements with Acuitas, LSU MRT-CellScript, the NIH, and TRON.

The key terms of these arrangements are summarized below.

11.7.3.1 Acuitas License Agreement

In April 2020, we entered into a non-exclusive license agreement with Acuitas, or the "**Acuitas License Agreement**". Under the Acuitas License Agreement, Acuitas grants us a non-exclusive worldwide license, with the right to sublicense (subject to certain conditions) under Acuitas' LNP technology to develop, manufacture and commercialize licensed products directed to the SARS-CoV-2 surface glycoprotein. We have the option to convert the non-exclusive licenses to exclusive licenses subject to certain additional financial obligations.

Under the Acuitas License Agreement, we must pay Acuitas up to between approximately $1.6 million and $2.45 million in development milestone payments, $2.5 million and $3.75 million in regulatory milestone payments and $2.5 million and $3.75 million in commercial milestone payments upon the occurrence of certain milestone events. We are further required to pay Acuitas a low single-digit tiered percentage royalty on net sales of licensed products, subject to certain potential customary reductions. Our royalty obligations continue under the Acuitas License Agreement on a country-by-country and product-by-product basis until the later of (i) the expiration of the last-to-expire licensed valid patent claim covering such licensed product in such country, (ii) expiration of any data exclusivity, market exclusivity or supplemental protection certificates period for such product in such country, and (iii) certain years following the first commercial sale of such product in such country.

The Acuitas License Agreement will continue on a product-by-product and a country-by-country basis until there are no more payments owed to Acuitas for such product in such country. Upon expiration of the Acuitas License Agreement, the license will become fully paid up and will remain in effect. We have the right to terminate the Acuitas License Agreement for convenience following a certain notice period. Either party may terminate the Acuitas License Agreement in the event of a material breach by the other party following a cure period. Alternatively, instead of exercising our right to terminate in the event of Acuitas' material breach, we may elect to instead continue the license but reduce our milestone and royalty payment obligations to Acuitas by a certain percentage. In the event of termination of the Acuitas License Agreement by us for convenience or by Acuitas for our material breach, the licenses granted under such agreement will terminate, except that we will have the right to sell off any remaining inventories of licensed products for a certain period of time.

11.7.3.2 LSU License Agreement

In May 2015, we entered into a patent license agreement with the Board of Supervisors of the LSU and the University of Warsaw, or "**UW**". The agreement (which we refer to as the "**LSU Agreement**") replaces and supersedes the earlier license agreement between the parties.

Under the LSU Agreement, UW and LSU granted to us an exclusive royalty-bearing license under certain patent rights relating to mRNA cap analogs and the synthesis and use of anti-reverse phosphorothioate analogs of the mRNA cap in the United States, certain jurisdictions in the European Union and other countries. As consideration for the license granted, we are obligated to pay running royalties in the low single digits on all net sales of products utilizing the licensed patents and to pay annual maintenance fees to LSU.

We are obligated to use commercially reasonable efforts to develop one or more marketable products utilizing the licensed patents, upon which we would owe additional milestone payments to LSU.

The LSU Agreement remains in effect until expiration of the licensed patents. We have the right to terminate the LSU Agreement for convenience with 60 days' prior notice, and LSU and UW may terminate for our uncured material breach.

11.7.3.3 CellScript and mRNA Ribotherapeutics License Agreement

BioNTech RNA (now merged into BioNTech SE) entered into the two MRT-CellScript Sublicenses discussed above. Together, the MRT-CellScript Sublicenses grant BioNTech RNA worldwide, non-exclusive sublicenses to research, develop, make, import, use and commercialize products for in vivo uses in humans and non-human animals, including therapeutic and prophylactic applications, and for certain uses in the diagnostic and prognostic field of use and certain laboratory research or screening uses. Under these sublicenses, BioNTech RNA has the right to grant sublicenses to affiliates and third parties.

BioNTech RNA must use reasonable efforts to develop and commercialize products under the sublicenses. Furthermore, BioNTech RNA is obliged to pay MRT and CellScript development milestone payments of up to approximately $26 million as well as royalties in the low to mid-single digits on net sales of licensed products, depending on the field of use.

The agreements continue until the expiration or abandonment of the last licensed patent to expire or be abandoned. BioNTech RNA may terminate the agreement for convenience with respect to all or certain patent rights with 60 days' prior written notice. MRT or CellScript may terminate the respective sublicense agreement for payment default, uncured material breach or the bankruptcy of BioNTech RNA.

11.7.3.4 NIH License Agreement

On May 27, 2020, we and the United States Department of Health and Human Services, as represented by the National Institute of Allergy and Infectious Diseases, or "**NIAID**", of the NIH, entered into a patent license agreement to facilitate the development of a vaccine against COVID-19, or, as amended and restated on December 20, 2024, the "**NIH License Agreement**". Pursuant to the NIH License Agreement, our royalty obligation on net sales (as defined in the NIH License Agreement) of licensed products (as defined in the NIH License Agreement, and which includes our and Pfizer's COVID-19 vaccine) is an amount of up to a low single-digit percentage of net sales of licensed products. The NIH License Agreement also provides a framework for a license for use in combination products (as defined in the NIH License Agreement, and which would include the COVID-19 vaccine used in combination with other active pharmaceutical ingredients).

The NIH License Agreement remains in effect until expiration of the licensed patents. We have the right to terminate the NIH License Agreement for convenience with 60 days' prior notice, and NIAID may terminate for our uncured material breach.

11.7.3.5 TRON Agreements

In 2015, we and our subsidiaries BioNTech RNA (now merged into BioNTech SE), BioNTech Diagnostics GmbH, BioNTech Protein Therapeutics GmbH, BioNTech Cell & Gene Therapies GmbH, Eufets GmbH and JPT Peptide Technologies GmbH entered into a master agreement for research Services with TRON-Translationale Onkologie an der Universitätsmedizin der Johannes Gutenberg-Universität Mainz gemeinnützige GmbH, or "**TRON**". Concurrently with this master agreement for research services, or the "**TRON Research Agreement**", we entered into a license agreement originally with Ganymed Pharmaceuticals AG which was later transferred to its new parent company (herein

referred to as "**Ganymed**"), TRON, Johannes Gutenberg-Universität Mainz and Universitätsmedizin der Johannes Gutenberg-Universität Mainz, or the "**TRON License Agreement**". The TRON Research Agreement and TRON License Agreement together replaced and superseded our 2008 cooperation, purchase and licensing agreement with the University Mainz, or the "**2008 Cooperation Agreement**". In 2015, we and our subsidiaries BioNTech RNA (now merged into BioNTech SE), BioNTech Diagnostics GmbH, BioNTech Protein Therapeutics GmbH, BioNTech Cell & Gene Therapies GmbH, BioNTech Innovative Manufacturing Services GmbH and JPT Peptide Technologies GmbH, entered into a framework collaboration agreement with TRON, or the "**TRON Collaboration Agreement**".

11.7.3.5.1 TRON Research Agreement

Under the TRON Research Agreement, TRON from time to time performs certain services for us under work orders, which may comprise innovative applied research projects, pre-defined research and development or clinical research services. We and TRON meet at regular intervals, but no less than annually, to prepare an overall non-binding project plan, which sets the scope, period and costs for the relevant projects contemplated for that period. Individual work orders set the specific binding terms of each project or service. TRON is obligated to render services in accordance with the scientific standards, all applicable laboratory and legal provisions and with the care customary in the industry.

We are entitled to the exclusive rights to all inventions, methods, specifications, materials, documents, data, know-how and other results (together, the "**Research Results**") developed or discovered by TRON or by us and TRON jointly under the TRON Research Agreement, except to the extent they constitute improvements of the technologies applied by TRON in the relevant projects. Under the TRON Research Agreement, TRON granted us a non-exclusive, royalty-free license to use TRON Improvements if such TRON Improvements are necessary for the continued development and exploitation of the Research Results or the manufacture or marketing of products which contain any of the Research Results and are covered by a patent claiming any of the Research Results.

Under the TRON Research Agreement, TRON's services rendered in the field of applied research are invoiced at cost. For other services, fixed prices are to be set forth in the individual work orders. TRON invoices us monthly and our payments are due no later than 10 days thereafter. Additionally, we are obligated to pay to TRON low single-digit tiered royalties on net sales of any product developed under the TRON Research Agreement that is covered by a patent claiming any of the Research Results.

The TRON Research Agreement limits each party's liability to the other to intentional and grossly negligent actions and, in the case of gross negligence, liability for indirect and consequential damages and lost profits is excluded. We are obligated to indemnify TRON for all product liability claims in connection with the products and for third-party claims asserting that the Research Results violate third-party intellectual property rights.

The TRON Research Agreement has an indefinite term, but may be terminated by either party on six months' notice. If one of our subsidiaries terminates its role in the TRON Research Agreement, the agreement will survive and continue without that subsidiary.

11.7.3.5.2 TRON License Agreement

The TRON License Agreement governs the ownership of and licenses under certain patents, inventions, know-how, technologies and other knowledge (together, the "**Development Results**") filed and created before January 1, 2015 in the course of our collaboration with TRON, Johannes Gutenberg-Universität Mainz and Universitätsmedizin der Johannes Gutenberg-Universität Mainz (collectively, the "**University Parties**") and Ganymed pursuant to the 2008 Cooperation Agreement.

The TRON License Agreement sets forth the parties' rights with respect to the Development Results, mainly depending on which parties have contributed to such Development Results. Ownership of the Development Results and any patents and other intellectual property in certain shares to TRON, on the one hand, and BioNTech and/or Ganymed, on the other hand included therein is allocated. Each party may assign its share in the co-owned Development Results to its affiliates provided that such party provide notice of the transfer and the identity of the new co-owner to the other co-owners. However, in case of an assignment of such share to a third party (except in case of a material asset sale), the assigning party must obligate the assignee to comply with the terms of the TRON License Agreement and the assigning party will remain bound by the obligations of the TRON License Agreement unless the other co-owners have consented to discharge the assigning party from such obligations.

The parties to the TRON License Agreement grant licenses to each other under their shares in the Development Results substantially as follows. Ganymed is exclusively entitled to use the Development Results for certain antibodies and antibody fragments that bind to certain defined targets, or the "**Ganymed Field of Use**". We are exclusively entitled to use the Development Results in any other field of use (including immunological therapeutics, small molecule compounds, small interfering RNA (siRNA)-based therapeutics, micro-proteins, antibody based in vitro (except for those in the Ganymed Field of Use), diagnostics and therapeutics based on long-chain RNA as well as other cell therapy applications, immune cells transgenized with recombinant directed against certain defined targets or chimeric antigen receptors and RNA-based pharmaceuticals). The University Parties may use the Development Results for internal research purposes only. We have an obligation to use reasonable efforts to develop and commercialize products in our field of use worldwide.

Under the TRON License Agreement, we and Ganymed must agree on which party will have the primary role in filing, prosecuting, maintaining and defending jointly owned patents. We and Ganymed each have the exclusive right to enforce the Development Results in our respective fields of use, subject to certain step-in rights of the other parties.

We are obligated to pay to the University Parties low single-digit tiered royalties on net sales on any product that is covered by certain of the patents including in the Development Results. If licenses are granted to third parties, we are obligated to pay to the University Parties a mid-single-digit share of all upfront payments, milestone payments and other remuneration we receive from such third parties in consideration for the license. Regarding upfront payments only, the University Parties' share will be offset against subsequent license fees on net sales. In addition, we are obligated to pay certain development and regulatory milestones up to a low seven-figure amount to Johannes Gutenberg-Universität Mainz.

The TRON License Agreement contains a limitation on liability as between the parties, wherein the parties will only be liable to each other for intentional and grossly negligent actions, and, in the case of gross negligence, liability for indirect and consequential damages and lost profits is excluded. We are obligated to indemnify the University Parties and Ganymed for third-party claims of product liability or violation of applicable law based on our distribution of our products or if we breach the TRON License Agreement or if we or one of our agents acts culpably.

The TRON License Agreement will remain in effect as long as there are any obligations on us or Ganymed to pay license fees. After expiry of the TRON License Agreement, each party will have a perpetual, non-exclusive, royalty-free license to use the Developments Results. The TRON License Agreement may be terminated by any party on six months' notice. The licenses granted between the parties will survive such termination. The TRON License Agreement also grants all parties termination rights for uncured material breaches. If only one party terminates its role in the Agreement, the Agreement will survive and continue between the other parties.

11.7.3.5.3 TRON Collaboration Agreement

Under the TRON Collaboration Agreement, TRON from time to time undertakes certain projects in collaboration with us under separate project specific agreements, comprising innovative non-clinical research and development projects. We and TRON meet regularly to review and update project plans, and no less than annually to agree the budget for the on-going projects for the coming calendar year. Individual project agreements set the specific binding terms of each project. TRON is obligated to perform its obligations in accordance with the scientific standards, all applicable technical laboratory and legal provisions and with the care customary in the non-clinical biotechnology research industry.

Except for the results of a particular research project which has been funded exclusively by TRON, all of the inventions, methods, specifications, materials, documents, data, know-how and other results (together, the "**Collaboration Results**") developed or discovered by TRON or by us and TRON jointly under the TRON Collaboration Agreement are jointly owned. Under the TRON Collaboration Agreement, TRON grants us an exclusive, worldwide, sublicensable license under its interest in the Collaboration Results to research and have researched, develop and have developed, make and have made, use, and otherwise commercialize or have commercialized, and otherwise commercially exploit, products in

a field that is specified in the corresponding project agreement. The field of use is either (a) the prophylaxis, diagnosis and treatment of all indications in humans and animals; or (b) the prophylaxis, diagnosis and treatment of oncological diseases, infectious diseases and rare genetic diseases. We are required to use our reasonable efforts to develop and commercialize products that exploit the Collaboration Results.

Under the TRON Collaboration Agreement, TRON's activities are invoiced at cost. TRON invoices us monthly and our payments are due no later than 10 days thereafter. Additionally, we are obligated to pay to TRON low single-digit tiered royalties on net sales of any product developed under the TRON Collaboration Agreement that is covered by a patent claiming any of the Collaboration Results or, in certain circumstances, by a patentable invention forming part of the Collaboration Results which we elect to maintain as a trade secret. If licenses under Collaboration Results are granted to third parties, we are obligated to pay to TRON a mid-single-digit share of all upfront payments, milestone payments and other remuneration we receive from such third parties in consideration for the license. In addition, we are obligated to pay a one-time only milestone of a low seven-figure amount to TRON the first time annual sales of a product developed under the TRON Collaboration Agreement reach a low nine-figure number.

The TRON Collaboration Agreement limits each party's liability to the other to cases of willful misconduct and gross negligence and, in the case of gross negligence, liability for indirect and consequential damages and lost profits is excluded. We are obligated to indemnify TRON for all product liability claims in connection with the products and for third-party claims asserting that the Collaboration Results violate third-party intellectual property rights.

The TRON Collaboration Agreement came into force with retroactive effect from January 2015 and has an indefinite term, but may be terminated by either party on nine months' notice. If one of our subsidiaries terminates its role in the TRON Collaboration Agreement, the agreement will survive and continue without that subsidiary.

11.7.4 Trademark Portfolio

The BioNTech name, and certain other names used or intended to be used by our business, are protected by trademarks. Our trademark portfolio includes, but is not limited to, *Comirnaty*, *BioNTainer*, *FixVac*, *RiboCytokine*, *RiboMab*, *Recon*, and *Neo-Stim*, including logo versions of some of these trademarks.

Brand names appearing in italics throughout this report, and the BioNTech name, are trademarks owned by BioNTech. All other trademarks are the property of their respective owners.

11.7.5 Trade Secret Protection

Certain of our technologies, including in particular certain proprietary manufacturing processes or technologies and/or neoantigen prediction technologies, are protected as trade secrets.

In addition to patent protection, we rely upon unpatented trade secrets and confidential know-how and continuing technological innovation to develop and maintain our competitive position. We protect certain of our technologies, including, in particular, certain proprietary manufacturing processes and technologies and/or neoantigen prediction technologies, as trade secrets. However, trade secrets and confidential know-how are difficult to protect. We seek to protect our proprietary information, in part, by using confidentiality agreements with any future collaborators, scientific advisors, employees and consultants, and invention assignment agreements with our employees. We also have agreements requiring assignment of inventions with selected consultants, scientific advisors and collaborators. These agreements may not provide meaningful protection. These agreements may also be breached, and we may not have an adequate remedy for any such breach. In addition, our trade secrets and/or confidential know-how may become known or be independently developed by a third party, or misused by any collaborator to whom we disclose such information. Despite any measures taken to protect our intellectual property, unauthorized parties may attempt to copy aspects of our products or to obtain or use information that we regard as proprietary. Although we take steps to protect our proprietary information, third parties may independently develop the same or similar proprietary information or may otherwise gain access to our proprietary information. As a result, we may be unable to meaningfully protect our trade secrets and proprietary information.

11.8 Cyber Security

11.8.1 Risk Management and Strategy

Our cybersecurity approach strives to adequately protect our information, systems, assets, physical locations, and people. From a business perspective, this means protecting key information assets and complying with applicable international and national privacy laws, information security policies and contractual obligations.

Our Information Security Policy, adopted in 2023, defines our information security management objectives and principles, and our Data Privacy Policy, effective since 2021, provides for a consistent level of company-wide data privacy and data protection. In addition, our Information Classification Policy, introduced internally during the year ended December 31, 2023, provides a system for classifying and protecting our physical and digital assets. These policies are applicable to BioNTech SE and its affiliates, including all Supervisory Board and Management Board members, as well as all other officers and employees, and are part of our overall Information Security Management System, or "**ISMS**", that became effective in 2024 as part of the preparation for the ISO 27001 certification, which was completed in the first quarter of 2025.

The ISMS enables us to systematically manage information security through defined processes and structures. This helps to reduce the risks of business interruptions, disclosure of sensitive data or intellectual property, and other damages caused by IT security incidents. Additionally, as an operator of an essential service, we are regulated by the IT Security Act and must comply with legislative requirements, including the implementation of security measures to reduce the information security risks.

We aim to prevent the implementation of overly complicated and time-consuming procedures that may lead to an unnecessary increase in effort. We are striving to align the protection of data and the provision of essential service with our organizational context and economic approach. We aim to create an ISMS that is not limited to documentation but is fully integrated into daily practice.

Our processes for assessing, identifying, and managing material risks from cybersecurity threats are integrated into our overall enterprise risk management system, which was developed with input from internal and external experts.

To achieve and preserve information security, we strive for the orderly planning, implementation, control, and optimization of all activities required for the protection of data privacy and the detection, response and recovery of data privacy risks. We are committed to the continual improvement of our ISMS based on the results of the performance evaluation. We will initially seek certifications for our main manufacturing facility and an R&D site in addition to the cybersecurity organization.

We take responsibility for the transparent communication and proper processing of personal data. This includes the storage, access, retention, and security of all personal data when engaging with patients, employees, customers, business partners, and vendors. We communicate our practices in a data privacy statement on our corporate website. We require the third parties with which we contract to adhere to contractual privacy and security provisions, and we request specific information from major vendors about their practices in protecting data privacy.

When processing personal data, we are responsible for ensuring that we comply with applicable data protection laws. These include the European Union's Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation or GDPR), the German Commercial Code (*Handelsgesetzbuch – HGB*), the German Federal Data Protection Act (*Bundesdatenschutzgesetz – BDSG*), the German IT Security Act 2.0 (*Zweites Gesetz zur Erhöhung der Sicherheit informationstechnischer Systeme (IT-Sicherheitsgesetz 2.0) – IT-SiG 2.0*), the German Federal Office for Information Security Act (*Gesetz über das Bundesamt für Sicherheit in der Informationstechnik – BSIG*), and other privacy and data security laws in the jurisdictions where we operate. In April 2023, we were designated as a part of Germany's critical infrastructure (KRITIS) under the German Federal Office for Information Security Act, which has resulted in heightened reporting and verification obligations. We are in the process of implementing a global data privacy framework that sets out the requirements and standards applicable

to processing personal data. The framework is being designed to foster compliance with the applicable regulations and sets minimum standards for the Company. As part of our global strategy, privacy-related documents, such as informed consent forms for clinical trials, are being standardized company-wide. The forms facilitate the user-friendly implementation of the standards we have established and provide transparency on how and why we process personal data.

In 2024, there were no substantiated complaints concerning material data breaches, including leaks, thefts, or losses of personal data such as patient or customer data. Contracts and confidentiality agreements with clinical trial sites were compliant with relevant regulations. We do not believe that any cybersecurity threats in 2024, including as a result of any previous cybersecurity incidents, have materially affected or are reasonably likely to materially affect us, including our business strategy, results of operations, or financial condition. For a discussion of cybersecurity and data privacy-related risks and uncertainties, see section "*1.7.16 We are subject to stringent privacy laws, information security policies and contractual obligations governing the use, processing, and cross-border transfer of personal information and our data privacy and security practices.*".

11.8.2 Governance

We take a centralized approach to managing cyber and information security to facilitate consistent compliance across entities and locations. Our overarching strategy was developed in 2021 by the Chief Operating Officer, or "**COO**", and Chief Information Security Officer, or "**CISO**", in alignment with the Data Protection Officer and Head of Global Security and Protection, and is regularly updated. The ISMS was implemented in 2024.

The ISMS audit committee, or the "**ISMS Committee**", is comprised of three people from the supervisory board and the CFO. The ISMS Committee supports the ISMS and approves related policies and IT security protection measures. They are informed about the implementation progress and functioning of the ISMS and determine the risk appetite as well as our risk strategy. The progress of the ISMS, along with related key performance indicators, is presented to the ISMS Committee on an annual basis. The ISMS Committee also informs the entire Management Board about the outcome of its review.

Our COO and Management Board member, Sierk Poetting, is responsible for assessing and managing our material risks from cybersecurity threats. His ambit includes reviewing our information security capabilities, reporting data privacy issues to the Management Board, and supporting our Information Security Organization, or "**ISO**", in obtaining the resources it needs. The COO's extensive experience in risk management, operations and corporate governance, with over 11 years of experience in the pharmaceutical industry in particular, are critical to the management of cyber and information security at the Company.

The COO is supported by the CISO, who leads the ISO and is accountable for security strategy, operations, and policy development and implementation. Our CISO, Raimond Jähn, was the department lead of our IT security team starting in 2016, has led the cyber and information security transformation program towards a new operating model since 2021, and was formally designated as CISO by the COO in 2023. Our Head of Cyber and Information Security, Data Protection Officer, and Head of Global Security and Protection each bring in additional expertise.

Data privacy matters fall under the purview of our Chief Legal Officer and Management Board member, James Ryan, who is supported by our Senior Director, Data Privacy. Dr. Ryan's qualifications include close to 20 years of expertise in legal and intellectual property matters, both within the pharmaceutical industry as well as an outside counsel with a focus on strategic life sciences transactions. Together with his deep familiarity with the Company's history, operations, and processes, James Ryan is uniquely positioned to advise on data privacy matters.

For additional information on Sierk Poetting's and James Ryan's experience, see section "*17.2.2 Members of the Management Board*".

11.9 Our Competitive Landscape

We compete in an industry characterized by rapidly advancing technologies, intense competition and a complex intellectual property landscape. We face substantial competition from many different sources, including large and specialty pharmaceutical and biotechnology companies, academic research institutions and governmental agencies and public and private research institutions.

Many of our competitors and potential competitors, either alone or with their collaborators, have greater scientific, research and product development capabilities as well as greater financial, marketing, sales and human resources and experience than we do. In addition, smaller or early-stage companies, including immunotherapy-focused therapeutics companies, may also prove to be significant competitors, particularly through collaborative arrangements with large and established companies. Some of our collaborators, such as Genmab and Pfizer, may also be competitors within the same market or other markets. Accordingly, our competitors may be more successful than us in developing and potentially commercializing technologies and achieving widespread market acceptance. In addition, our competitors may design technologies that are more efficacious, safer or more effectively marketed than ours or have fewer side effects, or may obtain regulatory approvals more quickly than we are able, which could eliminate or reduce our commercial potential. These competitors also compete with us in recruiting and retaining qualified scientific and management personnel and establishing clinical trial sites and patient registration for clinical trials, as well as in acquiring technologies complementary to, or necessary for, our programs.

We anticipate that the key competitive factors affecting our technologies will be efficacy, safety, cost and convenience, ease of distribution, storage and administration, as well as our ability to build a fully-integrated biotechnology company. The availability of reimbursement from government and other third-party payors will also significantly affect the pricing and competitiveness of our products. The timing of market introduction of our products and competitive products will also affect competition among products. We expect the relative speed with which we can develop our products, complete the clinical trials and approval processes, and supply commercial quantities of the products to the market to be important competitive factors. Our competitors also may obtain FDA or other regulatory approval for their products more rapidly than we may obtain approval for ours, which could result in our competitors establishing a strong market position before we are able to enter the market.

Specifically, our marketed monovalent and bivalent COVID-19 vaccines and any other COVID-19 vaccines we and Pfizer develop compete with other COVID-19 vaccines that have been approved or authorized for temporary or emergency use and a number of vaccine manufacturers, academic institutions and other organizations currently have programs to develop COVID-19 vaccine candidates.

We are active worldwide, with our principal markets of revenue generation being the United States and Germany, mainly determined by our collaboration with Pfizer for our COVID-19 vaccines. Our main competitors include Sanofi, AstraZeneca and other global pharmaceutical and biotechnology companies, such as Moderna.

11.10 Property, Plant and Equipment

The following is a summary of our principal owned and leased real estate. We also lease other properties in the ordinary course of business as part of our global operations.

11.10.1 Germany

Mainz:

Our headquarters are located in Mainz, where we principally occupy:

- Approximately 10,780 square meters of laboratory, GMP manufacturing, storage and office space at An der Goldgrube 12, 55131. We have owned the building and the land on which it stands since January 1, 2023.
- Approximately 4,000 square meters of office space at Freiligrathstraße 6, 55131 under a lease that has been extended until December 31, 2027.
- Approximately 8,110 square meters of office and laboratory container space, including ancillary space, at Freiligrathstraße 6, 55131. The lease of the office container space expires on June 30, 2027. We own the laboratory container space.

- Approximately 1,000 square meters of office and GMP manufacturing space under a lease for part of the building located at Kupferbergterrasse 15, 55161 that expires on March 31, 2027.
- A 3,950-square-meter laboratory and office building at Adam-Opel-Strasse 10, 55129, which we own. On the approximately 13,000-square-meter property, there is also an undeveloped area for a planned laboratory and office building with a size of up to 12,000 square meters. Currently, 2,125-square-meter office containers are located in this area. The containers are rented until the end of December 2026.
- An office building, "Haus 4," at Hechtsheimer Straße 2c, with approximately 7,000 square meters of total space. The building is a freehold asset.
- Approximately 42,100 square meters of office space under a lease for two of three building parts at Große Bleiche 54-56, 55131, under a lease that expires on December 31, 2029.

We intend to expand our capacity in Mainz as follows:

- In 2025, we completed construction of a four-story building at An der Goldgrube 10. It includes laboratory space for research and development, offices, storage facilities, a conference center and cafeteria. We plan to move into the new building in January 2026. As a result, we will have an additional 2,400 square meters of laboratory space and 4,050 square meters of office space.
- We also own a plot of land of approximately 8,750 square meters at Hechtsheimer Straße 2b, 55131, where we have constructed a GMP manufacturing facility of approximately 18,000 square meters in total. The start of operations is planned for 2027.

Idar-Oberstein:

- The IMFS facility (consisting of buildings A to E and J) has a total area of approximately 13,470 square meters. This includes approximately 2,660 square meters of storage space, approximately 1,270 square meters of development and QC laboratory space, approximately 1,650 square meters of clean rooms, and approximately 2,540 square meters of office space. We own this facility, including the GMP-certified manufacturing suites.
- We occupy approximately 575 square meters of this space, which is used primarily for storage, under a lease that has an initial expiry date of October 1, 2021, but which we have extended until September 30, 2026. The warehouse is in Tiefenstein.
- We have been renting the warehouse for GMP products since April 2022. The warehouse has an area of 1,156 square meters. The term is 5 years with the option to extend.
- Rental of a plot of land with 2,916 square meters. A container facility was built on it. The office container facility has a size of approximately 1,474 square meters. Both contracts currently run until June 2025. We intend to extend both contracts until December 2029.

Marburg:

Behringwerke:

- Our main manufacturing facility (H028) consists of 10,240 square meters, including 4,589 square meters of GMP space, 2,422 square meters of technical and warehouse space, 540 square meters of laboratory space and 2,690 square meters of office space. Effective January 1, 2025, we have also leased additional 2,977 square meters space on the 1st and 2nd floors (H028), bringing the total leased space to 13,217 square meters. The lease expires on December 31, 2034.
- Our main office building (H001) consists of 4,913 square meters of office space. The lease expires on October 31, 2027.

Görzhausen:

- As part of our *BioNTainer* program (BioNTech Innovation Center/BIC, M102), we occupy approximately 2,040 square meters. Approximately 804 square meters are used as office space and 1,236 square meters as GMP and technical storage space under a lease that expires on December 31, 2031.

- Our Plasmid Production/Miami (Microbial Manufacturing, M537) comprises 3,088 square meters, including 1,021 square meters of usable GMP and laboratory space, 1,065 square meters of usable technical and warehouse space and 448 square meters of usable office space. The lease expires on December 31, 2031.

Berlin:

- At our JPT facility, we occupy approximately 7,500 square meters of laboratories, general technical production space, storage and offices.
- We have been renting an office of approximately 1,700 square meters since April 2023. The contract runs until December 31, 2028, and may be extended.

Munich:

In Munich, we have leased approximately 3,700 square meters in the Werksviertel. The lease is for 60 months with options to extend.

Neuried:

In Neuried:

- We occupy approximately 1,732 square meters of laboratory and office space under a lease which will expire on November 30, 2031.
- We leased additional space in July 2022 of approximately 1,470 square meters of laboratory, office and storage space under a lease which will expire on August 30, 2029.

Fussgoenheim:

In Fussgoenheim, we lease approximately 3,448 square meters of freezer farm space. The term ends on December 31, 2027.

Mutterstadt:

In Mutterstadt, we occupy approximately 5,744 square meters of freezer farm space under a rental agreement. We also lease a further 2,160 square meters of handling space. The term ends on December 31, 2027, with a one-year extension option.

11.10.2 Global locations

11.10.2.1 United States

In Cambridge, Massachusetts, United States, we principally occupy:

- Approximately 2,490 square meters of laboratory and office space under a lease for part of a building located at 40 Erie Street. The term was extended and will expire on September 30, 2028.
- Approximately 4,410 square meters of laboratory and office space under a lease for part of a building located at 75 Sidney Street that has an initial term that expires on January 31, 2032.

In Gaithersburg, Maryland, United States, we principally occupy:

- Approximately 5,476 square meters containing office, laboratory and manufacturing space at 930 / 940 Clopper Road under a lease which will expire on July 31, 2033.
- Approximately 1,000 square meters containing office and laboratory space at 25 West Watkins under a lease which will expire on November 30, 2033.

11.10.2.2 United Kingdom

In Cambridge, United Kingdom, we principally occupy approximately 7,400 square meters of shell and core laboratory and office space under a lease with an initial term until October 13, 2033, including a tenant-only break option at year seven of the term. The building is expected to be in operation during 2026.

11.10.2.3 Austria

In Vienna, Austria, we signed a lease in September 2022 for approximately 1,300 square meters of office and laboratory space for part of the building located at Helmut-Qualtinger-Gasse 2, 1030. The lease commenced on April 1, 2023, with a lease term of eight years and an option to extend.

11.10.2.4 Rwanda

In Kigali, Rwanda, we have leased a plot of land of approximately 35,100 square meters to develop a modular mRNA vaccine factory for the manufacturing of bulk drug substance and bulk drug product.

11.10.2.5 Singapore

In Singapore, we own a production site. The entire area covers approximately 63,300 square meters. There is office space of approximately 6,195 square meters, a production and technical building of approximately 20,000 square meters, and a warehouse of approximately 3,400 square meters.

11.10.2.6 Australia

In Melbourne, Australia, we have leased a plot of land of approximately 26,100 square meters at La Trobe University to develop a freehold modular R&D and manufacturing center.

11.10.2.7 France

In Paris**,** France, our subsidiary InstaDeep signed a lease agreement for approximately 1,200 square meters of office space with an initial term until December 31, 2029.

11.10.2.8 Other

The acquisition of Biotheus, which closed in January 2025, is set to provide us with a significant infrastructure component in Mainland China. The material sites are as follows:

- A freehold manufacturing facility in Nantong, covering an area of approximately 62,000 square meters. While most of the site is currently in a shell and core condition, it is intended to be developed further to support additional capacity.
- A leasehold asset in the form of the current Biotheus headquarters in Zhuhai, which comprises office, lab, and pilot manufacturing space totaling approximately 5,500 square meters. The leases for the building are structured between floors, with terms expiring between 2025 and 2027.

11.11 Environmental, Social, and Governance (ESG)

Since our foundation, we have focused on improving the health of people worldwide. To this end, we utilize the full potential of the immune system to develop drugs for diseases with high or unmet medical needs.

We support the United Nations Sustainable Development Goals (SDGs). Our research and development work makes an important contribution to the United Nations' third Sustainable Development Goal (SDG 3): ensuring healthy lives and promoting well-being for all at all ages. The targets 3.3 (Communicable diseases) and 3.b (Medicine and vaccines) are of particular importance to us. This is in line with our central commitment to global social responsibility. At the heart of our business practices is the goal of ensuring that people around the world benefit from our research and innovations. As part of these efforts, we continue to focus on major unmet public health needs and on fair and equitable access to new medicines, while also allowing us to invest in the development of new therapies and vaccines.

This vision gives grounds for our enhanced responsibility: for our corporate governance, for protecting the environment and the climate, for respecting human rights, and fostering the full potential of our employees to achieve our purposeful goals.

11.11.1 Climate Strategy

Our efforts to mitigate and manage our environmental impact, especially for climate protection, are embedded in our vision to help improve the health of people worldwide. If humanity fails in limiting global warming to 1.5°C compared to pre-industrial levels, serious consequences for people and nature around the world are to be expected. We therefore support the global agreement on climate change ("**Paris Climate Agreement**"), and the UN's 13th Sustainable Development Goal (SDG 13) of taking urgent action to combat the climate crisis and its impacts. BioNTech is addressing the climate crisis by working to minimize the impact of its operations and reduce greenhouse gas (GHG) emissions in operations and throughout the value chain. Based on the requirements of the Science Based Targets Initiative (SBTi), BioNTech set ambitious emission reduction targets in 2022. An absolute reduction of 42% by 2030 compared to the base year of 2021 was set for BioNTech's Scope 1 & 2 greenhouse gas emissions. A "Supplier Engagement Target" was adopted for Scope 3 greenhouse gas emissions and further specified in the course of 2023 in accordance with the requirements of the SBTi: BioNTech is committed to ensuring that 72% of its suppliers by emissions, which includes purchased goods and services, capital goods and upstream transportation and distribution, will have set science-based targets by 2027. The Company's near-term and science-based emissions reduction targets for Scope 1, 2 and 3 were validated by the Science-Based Targets Initiative in 2024. This validation underlines that BioNTech's Scope 1 and 2 climate targets are ambitious and in line with the United Nations Paris Agreement, which aims to limit global warming to 1.5 degrees Celsius above pre-industrial levels.

To achieve these climate targets, BioNTech has started to integrate greenhouse gas emission reduction targets into growth and investment planning, supply chain management, and ongoing operations. In September 2022, the department initially known as "Energy & Sustainability Projects (ESP)" was established under the BioNTech Site Service Unit (BSS). It has since been renamed to "Decarbonization Strategy & Implementation (DSI)" and is responsible for the operational implementation of decarbonization targets for Scope 1 and 2.

In 2023, the BioNTech Management Board approved a multi-year framework budget to provide the DSI department with additional financial scope for decarbonization measures. The budget is used for targeted modernization measures as part of the decarbonization roadmap. As an agile instrument, it supplements the decarbonization measures planned and budgeted for in projects for property conversions. For new buildings, the topic of CO_{2e} emissions has been included in the budget process to achieve sustainability targets and comply with sustainability requirements; since 2024, for example, the expected CO_{2e} change must be specified in applications for construction costs. At the same time, we have continued our efforts to raise awareness among our suppliers to reduce Scope 3 emissions. To this end, dialog with our most important suppliers was initiated in 2023 and continued in 2024 and 2025. This is used to agree memoranda of understanding, which set out the intention of these suppliers to establish science-based emission reduction targets. Since 2023, our Code of Conduct for Suppliers has also included climate protection requirements.

11.11.2 Human Rights Obligations

Based on the Universal Declaration of Human Rights and the fundamental principles of the International Labor Organization (ILO), BioNTech committed itself to basic human rights values for the first time in 2016 and has also been a signatory to the UN Global Compact and its ten principles since 2020. Furthermore, commitments to uphold human rights as outlined in the International Bill of Human Rights (Universal Declaration of Human Rights, International Covenant on Civil and Political Rights, International Covenant on Economic, Social and Cultural Rights, the United Nations Guiding Principles on Business and Human Rights), the fundamental principles of the ILO, and the ten principles of the UN Global Compact are included in corporate guidelines such as the Code of Business Ethics & Integrity and the BioNTech Declaration of Human Rights. Since 2023, we have carried out a comprehensive human rights risk analysis every year, covering our own operations and those of direct suppliers. The analysis is the basis for defining the prioritized human rights topics. As part of this process, BioNTech takes appropriate preventive measures to counter the risks identified.

On January 1, 2023, our Management Board appointed a Human Rights Officer in accordance with the German Act on Corporate Due Diligence to Prevent Human Rights Violations in Supply Chains (*Lieferkettensorgfaltspflichtengesetz*, or "**LkSG**"). Responsibility for human rights management was transferred to the Human Rights Officer, who has received the support of an additional Human Rights Officer since April 2025. This function is responsible for all subsidiaries of the BioNTech Group and reports directly to the Chief Operating Officer (COO), who is the member of the Management Board responsible for human rights issues. The appointment of the Human Rights Officers does not exempt the Management Board from its supervisory and monitoring responsibility for compliance with human rights. Details on BioNTech's human rights risk management in accordance with the LkSG can be found in the BioNTech Declaration of Principles on Respect for Human Rights 2025.

11.11.3 ESG Ratings

As of the date of the Prospectus, BioNTech maintained its "Prime" status from the rating agency Institutional Shareholder Services, ISS ESG (Environmental, Social, Governance) and remained in the benchmark "Top 10%" of all rated companies in the pharmaceutical and biotechnology sector. In addition, BioNTech improved its overall rating from B- to B in the Corporate Rating 2024 on a scale from D- (lowest rating) to A+ (highest rating). ISS expanded its Quality Score in 2024 to include the two categories "Social" and "Environment", in which BioNTech is currently rated 1 and 2 respectively. These values indicate the transparency of a company with a focus on social and environmental issues on a scale of 1 (high transparency) to 10 (low transparency). In addition, BioNTech achieved a 5 in the "Governance" category of the ISS Quality Score on a risk scale of 1 (low risk) to 10 (high risk). The numbers are as of October 2, 2025 for Quality Scores "Environment", "Social" and "Governance" dimension.

BioNTech was included in the S&P Global Sustainability Yearbook 2025 for the first time. Out of 7,690 companies assessed by S&P, only 780 companies across 62 industries were selected for inclusion in the Sustainability Yearbook 2025. To be listed in this Yearbook, companies must score within the top 15% of their industry and must achieve a S&P Corporate Sustainability Assessment (CSA), within 30% of their industry's top-performing company. BioNTech received 51 out of 100 possible points in the 2025 S&P CSA released on July 30, 2025 (2024: 52/100; 2023: 45/100 points; 2022: 32/100 points). Since 2022, BioNTech has been actively engaging in the comprehensive S&P CSA rating process and has been listed as a participating company.

In July 2025, BioNTech received an ESG Risk Rating of 24.1 (as per last update of July 12, 2025; the full rating update was conducted by May 29, 2025 resulting in a score of 25.2) by the rating agency Morningstar Sustainalytics and was assessed to be at medium risk of experiencing material financial impacts from ESG factors. This corresponds to a risk on the third of five risk levels (negligible, low, medium, high, and severe). The rating measures the extent to which the economic value of a company is at risk due to ESG factors. Sustainalytics uses absolute risk categories and quantitative scores from 0 to 40+ to enable a comparable assessment for all companies and sectors evaluated.

11.12 Legal and Administrative Proceedings

We are and may be involved in various legal proceedings, including patent litigation, product liability and other product-related litigation, as well as other legal proceedings that arise from time to time in the ordinary course of business, including, but not limited to, personal injury, consumer, off-label promotion, securities, antitrust, employment law, tax, environmental, and/or other claims or investigations.

Other than with respect to the disputes described in section "*11.12.1 Settled Disputes*" resulting in settlement payments or related reimbursements, the litigation matters described in this section "*11.12 Legal and Administrative Proceedings*" have not had in the previous 12 months to the date of this Prospectus and are not believed to have in the future a material adverse effect on our financial position or profitability. We will continue to monitor the status of these and other claims that may arise. However, we could incur judgments, enter into settlements or revise our expectations regarding the outcome of matters, which could have a material adverse effect on our results of operations and/or our cash flows in the period in which the amounts are accrued or paid. Our assessments, which result from a complex series of judgments about future events and uncertainties, are based on estimates and assumptions that have been deemed reasonable by management, but that may prove to be incomplete or inaccurate, and unanticipated events and circumstances may occur that might cause us to change those estimates and assumptions.

Certain settled and pending matters to which we are a party are discussed below.

For a description of the risks relating to these and other legal proceedings we face and may in the future face and our assessments thereof, see section "*1.6.10 We may be involved in lawsuits or other legal proceedings to protect or enforce our intellectual property or the intellectual property of our licensors, or to defend against third-party claims that we infringe, misappropriate or otherwise violate such third party's intellectual property, each of which could be expensive, time consuming and unsuccessful.*".

11.12.1 Settled Disputes

11.12.1.1 Settlement Agreement with NIH

On December 20, 2024, the Company entered into a settlement agreement with the NIH. Under the terms of the settlement agreement, the Company will, among other things, pay $791.5 million, consisting of $750.0 million as a settlement for claimed royalties during calendar years 2020-2023 and $41.5 million in consideration for the NIH's entry into the amended NIH License Agreement, dated December 20, 2024 to the NIH within 60 days of December 20, 2024. The Company's execution of the settlement agreement does not in any way constitute an admission of liability with respect to any allegation raised by the NIH, all of which the Company expressly denies, and nothing in the Settlement Agreement shall be taken as or construed to be an admission by the Company as evidence supporting any such allegation, any matter of fact or law, any violation of law or any other liability whatsoever.

Upon the receipt of the settlement payment, the NIH has agreed to consider any alleged noncompliance under the amended license agreement to be resolved for the period up to and including January 1, 2024, including any claimed historical royalty payments allegedly owed by the Company prior to January 1, 2024, and agreed to withdraw the notice of default previously issued to the Company in connection with such alleged noncompliance.

Concurrent with entry into the settlement agreement, the Company and the NIH amended the NIH License Agreement, pursuant to which the Company and the NIH agreed that the Company's amended royalty obligation on net sales of licensed products will be an amount of up to a low single-digit percentage on net sales of licensed products (as defined in the NIH License Agreement, and which includes the Company's and Pfizer's COVID-19 vaccine), effective as of January 1, 2024, and which provides a framework for a license for use in combination products, which would include the COVID-19 vaccine used in combination with other active pharmaceutical ingredients.

11.12.1.2 Settlement Agreement with UPenn

On December 23, 2024, the Company had entered into a binding term sheet, or the "**Term Sheet**", with UPenn to provide terms on which the Company would retain license rights under certain UPenn patent rights in order to allow it to continue to pursue development and commercialization of licensed products under a patent sublicense agreement entered into between the Company and Cellscript as of July 19, 2017, or the "**PSA**").

On March 27, 2025, the Company and Penn entered into a series of agreements pursuant to the Term Sheet, including (i) a settlement agreement, pursuant to which the Company shall, among other things, pay up to $467.0 million to Penn, consisting of $400.0 million as royalties for calendar years 2020-2023, up to $15.0 million in funding for a three-year extension of the research term of the Company's and Penn's vaccine alliance, and $52.0 million as a contribution to a research and development investment fund, or the "**Fund**", to be jointly managed by the Company and UPenn; and (ii) a side letter to the PSA to provide for a low single-digit percentage royalty on net sales of licensed products (each as defined in the PSA) for 2024 onwards and provide a framework for a license for use in combination products which would include the COVID-19 vaccine used in combination with other active pharmaceutical ingredients. The payment of $400.0 million as royalties for calendar years 2020-2023 was made in June 2025. The Company and UPenn have also aligned on principal terms on which the Fund will be established and managed.

The Company and Penn additionally entered into amendments to (i) their existing collaboration & license agreement dated October 9, 2018, including the three-year extension of the research term, in connection with which the Company shall provide additional funding of up to $15.0 million as discussed above, and (ii) their existing collaboration & license agreement dated January 18, 2023, each as amended and or/supplemented to date.

The Company's execution of the settlement agreement does not in any way constitute an admission of liability with respect to any allegation raised by UPenn, all of which the Company expressly denies, and nothing in the settlement agreement shall be taken as or construed to be an admission by the Company as evidence supporting any such allegation, any matter of fact or law, any violation of law or any other liability whatsoever.

11.12.1.3 Reimbursement related to the Settlement Agreements with NIH and UPenn

In connection with the settlement agreements with both, the NIH and UPenn, Pfizer has agreed to reimburse the Company in respect of claimed royalties payable for sales of Comirnaty in the period 2020-2023. BioNTech expects to be reimbursed an aggregate of $534.5 million of the claimed royalties by its collaboration partner during 2025 and 2026.

11.12.1.4 Settlement Arrangements with GSK and CureVac

BioNTech SE and its wholly owned subsidiary, BioNTech Manufacturing GmbH (together in this section referred to as BioNTech), were party to disputes with CureVac N.V., CureVac SE and CureVac Manufacturing GmbH (collectively in this section referred to as CureVac) and GlaxoSmithKline Biologicals SA (together with BioNTech, CureVac and Pfizer, in this section, referred to as the Parties) involving intellectual property relating to the Company's and Pfizer's COVID-19 vaccines. On August 7, 2025, the Parties entered into settlement arrangements (the "**GSK/CureVac Settlement Arrangements**") to resolve the pending patent litigation among BioNTech, Pfizer and CureVac in the United States, and set a framework for resolving patent litigation and allegations of patent infringement among BioNTech, Pfizer and CureVac outside the United States (subject to closing of the Offer).

Pursuant to the GSK/CureVac Settlement Arrangements, the pending patent litigation among BioNTech, Pfizer and CureVac in the United States, including all claims relating to alleged infringement of CureVac patents against BioNTech and Pfizer in the United States prior to January 1, 2025, was dismissed. To effectuate the dismissal, the Parties filed a Stipulation and Order with the United States District Court for the Eastern District of Virginia dismissing with prejudice CureVac's action for patent infringement relating to certain CureVac patents (Civil Action No 2:23-cv-222). Additionally, BioNTech was granted a non-exclusive license with a right to sublicense for the manufacture, use, sale, offer for sale in the United States and importing into the United States of mRNA-based vaccines for the prevention, delay of onset, treatment or amelioration in humans of SARS-COV-2 and/or influenza infections that Pfizer or BioNTech develop, manufacture and commercialize (the "**Licensed Products**").

Pursuant to the GSK/CureVac Settlement Arrangements, BioNTech agreed to pay (or cause to be paid) (i) $370 million to GlaxoSmithKline Biologicals SA within five days after the entry of the dismissal order and (ii) $370 million to CureVac within five days of the earlier to occur of (a) the termination of Purchase Agreement and (b) the closing of the Offer. The Company will pay a one percent royalty on U.S. sales of Licensed Products to each of GlaxoSmithKline Biologicals SA and CureVac beginning with effect as of January 1, 2025. Of the $370 million payable to GlaxoSmithKline Biologicals SA, $320 million will be in cash. The remainder is attributed to the value of an amendment to GlaxoSmithKline Biologicals SA's existing agreement with CureVac relating to mRNA influenza, COVID-19 and influenza/COVID-19 combination products, which includes certain reductions in royalties to be paid by GlaxoSmithKline Biologicals SA.

Additionally, upon and subject to the closing of the Offer, (i) the patent litigation between CureVac and BioNTech outside of the United States which are described in section "*11.12.2.1 CureVac Proceedings*" must be dismissed, and all claims released; (ii) BioNTech must receive a non-exclusive license with a right to sublicense for the manufacture, use, sale, offer for sale and importing of Licensed Products worldwide; and (iii) BioNTech must pay $130 million to GlaxoSmithKline Biologicals SA within five days of the later to occur of (a) the entry of a withdrawal of actions by CureVac against BioNTech and (b) January 1, 2026. The Company will pay a one percent royalty on sales of Licensed Products outside of the United States to each of GlaxoSmithKline Biologicals SA and CureVac beginning with effect as of

January 1, 2025. In addition, GlaxoSmithKline Biologicals SA's existing agreement with CureVac will be further amended to reduce certain milestones and royalties payable by GlaxoSmithKline Biologicals SA. The GSK/CureVac Settlement Arrangements do not impact GlaxoSmithKline Biologicals SA's enforcement of its own patents against Pfizer and BioNTech in the United States and in Europe.

Subject to the closing of the Offer, Pfizer has agreed to reimburse BioNTech for $80 million and half of claimed royalties payable to GlaxoSmithKline Biologicals SA from January 1, 2025 onwards on sales of mRNA-based COVID-19 products.

BioNTech's agreement to the GSK/CureVac Settlement Arrangements does not in any way constitute an admission of liability with respect to the disputes covered thereby, which BioNTech expressly denies, and the GSK/CureVac Settlement Arrangements shall not be taken as or construed to be an admission by BioNTech as evidence supporting any such allegation, any matter of fact or law, any violation of law or any other liability whatsoever.

11.12.1.5 Alnylam Settlement Agreement

The Company and its wholly owned subsidiary BioNTech Manufacturing GmbH as well as Pfizer and Pharmacia & Upjohn Co. LLC, which we refer to together as the Pfizer parties, were party to certain patent litigation with Alnylam Pharmaceuticals, Inc. ("**Alnylam**"), relating to alleged infringements by *Comirnaty*. On July 30, 2025, the court entered final judgment of noninfringement of all asserted claims in that matter in favor of BioNTech and the Pfizer parties. On August 29, 2025, Alnylam, we and the Pfizer parties entered into a settlement agreement and covenant not to sue (the "**Alnylam Settlement Agreement**"). Pursuant to the Alnylam Settlement Agreement, Alnylam agreed not to appeal the final judgment and we and Pfizer parties agreed not to seek attorneys' fees or costs. The parties further agreed to certain mutual releases and covenants not to sue.

11.12.2 Pending Proceedings

11.12.2.1 CureVac Proceedings

11.12.2.1.1 Infringement Proceedings – EP'122, DE'961, DE'974, DE'575, and EP'668

In July 2022, CureVac AG (CureVac) filed a lawsuit against us and our wholly owned subsidiaries, BioNTech Manufacturing GmbH and BioNTech Manufacturing Marburg GmbH, in the Düsseldorf Regional Court, alleging *Comirnaty*'s infringement of one European patent, EP1857122B1, or "**EP'122**", and three Utility Models DE202015009961U1, DE202015009974U1, and DE202021003575U1. In August 2022, CureVac AG added European Patent EP3708668B1, or "**EP'668**", to its German lawsuit.

On August 15, 2023, the Düsseldorf Regional Court held a hearing on infringement with respect to all five IP rights. At the hearing, the Court stated it would render its infringement ruling with respect to EP'122 on December 28, 2023. On September 28, 2023, the Court issued orders suspending its infringement rulings with respect to the remaining four IP rights (DE'961, DE'974, DE'575, and EP'668) pending validity decisions in the DE'961, DE'974, and DE'575 cancellation proceedings before the German Patent and Trademark Office and in the EP'668 opposition proceedings before the Opposition Division of the EPO. In the September 28th orders, the Court explained that it was suspending its infringement rulings until validity decisions are reached, while contemporaneously noting concerns regarding the validity of DE'961, DE'974, DE'575, and EP'668. After EP'122 was declared invalid in the first-instance nullity proceedings by the Federal Patent Court on December 19, 2023 (see below), on December 27, 2023, the Düsseldorf Regional Court canceled the December 28, 2023 decision date and stayed the infringement proceedings as to EP'122 until a final appellate decision is rendered as to the validity of EP'122 by the Federal Court of Justice. On June 7, 2024, CureVac AG waived DE'575 and withdrew this utility model from the infringement proceedings. On July 1, 2024, the EPO Opposition Division issued a preliminary opinion noting that it believes EP'668 is likely invalid. The EPO Opposition Division held an oral hearing regarding the validity of EP'668 between March 25-27, 2025. At the conclusion of this hearing, the Opposition Division upheld EP'668 in amended form, but only after finding that the alleged technical effect – increased protein expression – was not achieved across the broad scope of the amended claim. The written decision by the Opposition Division to uphold EP'668 in amended form was issued on July 11, 2025. BioNTech and Pfizer have appealed this decision and the appeal is pending. An oral hearing with respect to infringement of EP'668 was scheduled by the Düsseldorf Regional Court for July 1, 2025, but has been rescheduled for November 6, 2025. On July 3, 2025, GlaxoSmithKline Biologicals SA filed a request seeking to intervene in the EP'668 infringement proceedings. This request to intervene will be heard at the November 6, 2025 hearing.

11.12.2.1.2 Infringement Proceedings – EP'755, DE'123, and DE'130

In July 2023, CureVac filed a second lawsuit against us and our wholly owned subsidiaries, BioNTech Manufacturing GmbH and BioNTech Manufacturing Marburg GmbH, in the Düsseldorf Regional Court, alleging *Comirnaty*'s infringement of one European patent, EP4023755B1, or "**EP'755**", and two Utility Models DE202021004123U1, or "**DE'123**", and DE202021004130U1, or "**DE'130**". On June 7, 2024, CureVac waived DE'123 and withdrew this utility model from the infringement proceedings. The Court has stayed the infringement proceedings with respect to DE'130 pending a validity decision in the co-pending cancellation proceeding before the German Patent and Trademark Office, where an oral hearing has been scheduled for December 8, 2025. On July 24, 2024, the EPO Opposition Division issued a preliminary opinion noting that it believes EP'755 is likely invalid, and set a three-day oral hearing beginning on May 13, 2025. At the conclusion of this hearing, the EPO Opposition Division upheld EP'755 in amended form. BioNTech has appealed this decision and the appeal is pending. A hearing on infringement with respect to EP'755 was to occur in the Düsseldorf Regional Court on July 1, 2025, but this has been rescheduled for November 6, 2025. On July 3, 2025, GlaxoSmithKline Biologicals SA filed a request to intervene in the EP'755 infringement proceedings. This request to intervene will be heard at the November 6, 2025 hearing.

11.12.2.1.3 Nullity Proceedings – EP'122

In September 2022, we filed a nullity action in the Federal Patent Court of Germany seeking a declaration that EP'122 is invalid. In April 2023, the Federal Patent Court of Germany issued a preliminary opinion in the EP'122 nullity action in support of the validity of EP'122. The preliminary opinion does not address any infringement of EP'122. The preliminary opinion is a preliminary assessment by the court of the merits of a claim, and is non-binding. On December 19, 2023, the Federal Patent Court held an oral hearing, after which it nullified EP'122. On April 25, 2024, the Federal Patent Court issued a judgment containing its written reasons for nullifying EP'122. On May 6, 2024, CureVac appealed the judgment, which is currently pending. An oral hearing on this appeal is scheduled for July 2026.

11.12.2.1.4 Cancellation Proceedings – DE'961, DE'974, and DE'575

In November 2022, we filed cancellation actions seeking the cancellation of the three German Utility Models in the German Patent and Trademark Office. On December 20, 2023, the German Patent and Trademark Office issued a preliminary opinion that DE'974 is likely to be cancelled. On January 23, 2024, the German Patent and Trademark Office issued a preliminary opinion that DE'961 is likely to be cancelled. Both preliminary opinions are based on invalidity pursuant to para. 1 (2) no. 5 Utility Model Act. On March 7, 2024, the German Patent and Trademark Office issued a preliminary opinion that DE'575 is likely to be cancelled. On June 6, 2024, CureVac submitted a written statement to the German Patent and Trademark Office waiving DE'575. On June 12, 2024, we withdrew our request for cancellation of DE'575. On June 25 and 26, 2024, the German Patent and Trademark Office heard oral arguments regarding DE'961 and DE'974, and at the conclusion of the hearing on June 26, 2024, confirmed that both DE'961 and DE'974 were cancelled. In November 2024, the German Patent and Trademark Office issued its written decisions cancelling DE'961 and DE'974. CureVac has filed an appeal in both cancellation proceedings, which are currently pending.

11.12.2.1.5 Cancellation Proceedings – DE'123 and DE'130

In November 2023, we filed cancellation actions seeking the cancellation of German Utility Models DE'123 and DE'130 in the German Patent and Trademark Office. On June 6, 2024, CureVac submitted a written statement to the German Patent and Trademark Office waiving DE'123. On June 12, 2024, we withdrew our request for cancellation of DE'123. On December 5, 2024, the German Patent and Trademark Office issued a preliminary opinion that DE'130 is likely to be cancelled. An oral hearing regarding the validity of DE'130 before the German Patent and Trademark Office is scheduled for December 8, 2025.

We believe we have strong defenses against the allegations claimed relative to each of the patents and utility models and intend to vigorously defend ourselves in the proceedings mentioned above. However, our analysis of CureVac's claims is ongoing and complex, and we believe the ultimate outcomes remain substantially uncertain. Taking into account discussions with our external lawyers, we do not consider the probability of an outflow of resources to be sufficient to recognize a provision. In our opinion, these matters constitute contingent liabilities. We and CureVac have from time to time discussed potential options for the resolution of certain of these disputes, and we continue to be actively engaged in such discussions. However, it is currently impractical for us to estimate with sufficient reliability the respective contingent liabilities.

11.12.2.2 Moderna Proceedings

11.12.2.2.1 Germany

In August 2022, Moderna filed a lawsuit against us and Pfizer and our wholly owned subsidiaries, BioNTech Manufacturing GmbH, BioNTech Europe GmbH and BioNTech Manufacturing Marburg GmbH Pfizer Manufacturing Belgium NV, Pfizer Ireland Pharmaceuticals and Pfizer, Inc. in the Düsseldorf Regional Court alleging *Comirnaty*'s infringement of two European patents, 3590949B1, or "**EP'949**", and 3718565B1, or "**EP'565**".

With respect to EP'565, on November 7, 2023, the Opposition Division of the EPO revoked EP'565 after a one-day oral hearing held in the co-pending opposition proceeding, and on December 7, 2023, it issued the written decision revoking EP'565. On February 7, 2024, Moderna appealed the Opposition Division's revocation decision on EP'565, and the appeal is currently pending, with an oral hearing scheduled for January 27, 2026. On September 17, 2025, the EPO's Boards of Appeal issued a preliminary opinion noting that it believes EP'565 is likely invalid.

With respect to EP'949, on December 8, 2023, the Opposition Division issued a preliminary opinion noting that it believes EP'949 is likely invalid. As a result of those developments in the EPO proceedings, the Düsseldorf Regional Court postponed its hearing on infringement with respect to EP'949, originally scheduled for December 12, 2023, to January 21, 2025. On May 16, 2024, the EPO Opposition Division decided that EP'949 is valid, in amended form, and issued its written decision regarding the same on July 8, 2024. BioNTech appealed this decision, and the appeal is currently pending, with an oral hearing scheduled for September 2026. The Düsseldorf Regional Court held an infringement hearing on January 21, 2025, and on March 5, 2025, the Düsseldorf Regional Court issued a first-instance decision declining to stay the infringement proceedings and finding infringement of EP'949 by us and Pfizer. We and Pfizer have appealed the Düsseldorf Regional Court's infringement decision, and the appeal is currently pending. The court has not ruled on the invalidity of EP'949, which will be decided in a next step by the EPO in the opposition appeal proceedings. Moderna has not yet taken steps to enforce the Düsseldorf Regional Court's first-instance decision on infringement.

11.12.2.2.2 United Kingdom

In August 2022, Moderna filed a lawsuit asserting *Comirnaty*'s infringement of EP'949 and EP'565 against us and our wholly owned subsidiaries, BioNTech Manufacturing GmbH, BioNTech Europe GmbH and BioNTech Manufacturing Marburg GmbH, and Pfizer Limited, Pfizer Manufacturing Belgium NV and Pfizer Inc. in the Business and Property Courts of England and Wales, in the U.K. High Court of Justice (the "**U.K. High Court**"). In September 2022, we and Pfizer filed a revocation action in the Business and Property Courts of England and Wales requesting revocation of EP'949 and EP'565.

The U.K. High Court held a trial between April 22, 2024, and May 21, 2024. On July 2, 2024, the U.K. High Court released two judgments. The first judgment concerns the validity of EP'949 and EP'565. In this first judgment, the U.K. High Court found that EP'565 is invalid and therefore not infringed, while EP'949 is valid and infringed. The second judgment concerns whether Moderna's October 2020 commitment not to "enforce [its] COVID-19 related patents against those making vaccines intended to combat the pandemic", or the "**Patent Pledge**", amounted to a consent under U.K. law to carry out any acts that would otherwise amount to patent infringement. With respect to this judgment, the U.K. High Court found that Moderna's Patent Pledge amounted to consent to carry out activities that might otherwise infringe its patents prior to March 2022, but not after March 2022.

The U.K. High Court held a hearing on September 25, 2024, during which the Court granted Pfizer and BioNTech permission to appeal its judgment regarding the validity of EP'949, and declined Moderna's permission to appeal its judgment regarding validity of EP'565. On October 16, 2024, Moderna sought permission from the U.K. Appeals Court to appeal the EP'565 judgment. On November 11, 2024, the U.K. Appeals Court denied Moderna's application to appeal; accordingly, the U.K. designation of EP'565 is finally revoked with no further opportunity to appeal in the U.K. No party sought permission to appeal the U.K. High Court's judgment on the patent pledge.

The UK Court of Appeal held an oral hearing on the appeal of EP'949 on July 10-11, 2025. On August 1, 2025, the UK Court of Appeal issued a judgment agreeing with the UK High Court that EP '949 is valid, and dismissing our appeal. We have applied for permission to appeal this decision to the UK Supreme Court.

11.12.2.2.3 United States

U.S. District Court Litigation

In August 2022, Moderna filed a lawsuit in the U.S. District Court for the District of Massachusetts against us and our wholly owned subsidiaries BioNTech Manufacturing GmbH and BioNTech US Inc. and Pfizer Inc. alleging *Comirnaty*'s infringement of U.S. Patent Nos. 10,898,574; 10,702,600 and 10,933,127 and seeking monetary relief. On April 12, 2024, the U.S. District Court for the District of Massachusetts stayed the litigation pending resolution of the inter partes review of U.S. Patent Nos. 10,702,600 and 10,933,127.

Inter Partes Review

In August 2023, Pfizer and we filed petitions seeking inter partes review of U.S. Patent Nos. 10,702,600 and 10,933,127 before the United States Patent Trial and Appeal Board, or the "**PTAB**". On March 6, 2024, the PTAB issued decisions instituting inter partes review proceedings on all challenged claims of U.S. Patent Nos. 10,702,600 and 10,933,127. An oral hearing on the merits occurred on December 10, 2024. On March 5, 2025, the PTAB found all challenged claims of Moderna's U.S. Patent Nos. 10,933,127 and 10,702,600 to be unpatentable and thus invalid. Moderna appealed this decision on May 6, 2025, and the appeal is currently pending.

11.12.2.2.4 Netherlands

In September 2022, Moderna filed a lawsuit against us and our wholly owned subsidiary BioNTech Manufacturing GmbH and Pfizer B.V., Pfizer Export B.V., C.P. Pharmaceuticals International C.V. and Pfizer Inc. in the District Court of The Hague alleging *Comirnaty*'s infringement of EP'949 and EP'565. The District Court of the Hague held a hearing on October 6, 2023, on infringement and validity with respect to EP'949. On December 6, 2023, the Court found EP'949 to be invalid. On March 5, 2024, Moderna appealed this decision, and the appeal is pending. A hearing on the EP'949 appeal occurred on September 22, 2025, with a decision expected on or around December 9, 2025. The EP'565 case has been stayed pending the outcome of Moderna's appeal of the Opposition Division's revocation of EP'565.

11.12.2.2.5 Ireland

In May 2023, Moderna filed a lawsuit against us and our wholly owned subsidiary BioNTech Manufacturing GmbH, Pfizer Inc., Pfizer Healthcare Ireland, Pfizer Ireland Pharmaceuticals, and C.P. Pharmaceuticals International C.V. alleging *Comirnaty*'s infringement of EP'949 and EP'565 in the High Court of Ireland. On February 26, 2024, the High Court of Ireland stayed the lawsuit pending the final determination of the EPO opposition proceedings for EP'949 and EP'565 (in each case including any appeals).

11.12.2.2.6 Belgium

In May 2023, Moderna filed a lawsuit against us, our wholly owned subsidiary BioNTech Manufacturing GmbH, Pfizer Inc. and Pfizer Manufacturing Belgium alleging *Comirnaty*'s infringement of EP'949 and EP'565 in the Brussels Dutch-speaking Enterprise Court. On May 29, 2024, the parties filed a joint request to stay the proceedings, which was entered by the Enterprise Court.

All of the above proceedings are currently pending.

We believe we have strong defenses against the allegations claimed relative to each of the patents and intend to vigorously defend ourselves in the proceedings mentioned above. However, our analysis of Moderna's claims is ongoing and complex, and we believe the outcome of the suit remains substantially

uncertain. Taking into account discussions with our external lawyers, we do not consider the probability of an outflow of resources to be sufficient to recognize a provision. In our opinion, these matters constitute contingent liabilities. However, it is currently impractical for us to estimate with sufficient reliability the respective contingent liabilities.

11.12.2.3 Arbutus and Genevant Proceedings

In April 2023, Arbutus and Genevant filed a lawsuit against Pfizer and us in the U.S. District Court for the District of New Jersey alleging that Pfizer and we have infringed the following patents owned by Arbutus: U.S. Patent Nos. 9,504,651; 8,492,359; 11,141,378; 11,298,320; and 11,318,098, through the use of Genevant's lipid nanoparticle technology and methods for producing such lipids in *Comirnaty*, and seeking monetary relief. This proceeding is currently pending.

We believe we have strong defenses against the allegations claimed relative to each of the patents and intend to vigorously defend ourselves in the lawsuit mentioned above. However, our analysis of Arbutus and Genevant's claims is ongoing and complex, and we believe the outcome of the suit remains substantially uncertain. Taking into account discussions with our external lawyers, we do not consider the probability of an outflow of resources to be sufficient to recognize a provision. In our opinion, these matters constitute contingent liabilities. However, it is currently impractical for us to estimate with sufficient reliability the respective contingent liabilities.

11.12.2.4 Other Genevant Proceedings

In September 2025, Genevant initiated an arbitration against BioNTech alleging that BioNTech breached the licence and co-development agreement (the "**Genevant License Agreement**") between Genevant and BioNTech dated July 4, 2018 by (a) practising Genevant's technology for purposes related to products outside the Genevant License Agreement and outside prescribed fields of use to research, develop, manufacture and commercialize our COVID-19 vaccine, (b) enabling a third party to wrongfully practise Genevant's technology for purposes outside the scope of the License Agreement to develop, manufacture and commercialise *Comirnaty*; and (c) using Genevant's confidential information to develop, manufacture, and commercialise *Comirnaty* and the alleged wrongful disclosure to third parties for purposes unrelated to the Genevant License Agreement. Genevant seeks certain declaratory and injunctive relief as well as unspecified monetary damages. The proceeding is currently pending.

BioNTech believes it has strong defenses against the allegations claimed and intends to vigorously defend itself in the arbitration. However, BioNTech's analysis of Genevant's claims is ongoing, and BioNTech believes the outcome of the arbitration remains substantially uncertain. Taking into account discussions with its external lawyers, BioNTech does not consider the probability of an outflow of resources to be sufficient to recognize a provision. In BioNTech's opinion, these matters constitute contingent liabilities. However, it is currently impractical for BioNTech to estimate with sufficient reliability the respective contingent liabilities.

11.12.2.5 GlaxoSmithKline Proceedings

11.12.2.5.1 United States

In April 2024, GSK filed a lawsuit against Pfizer and us and our wholly owned subsidiaries BioNTech Manufacturing GmbH and BioNTech US Inc. in the United States District Court for the District of Delaware alleging that the cationic lipid used in *Corminaty* infringes U.S. Patent Nos. 11,638,693; 11,638,694; 11,666,534; 11,766,401; and 11,786,467; and seeking monetary relief. On August 14, 2024, GSK filed an amended complaint to assert infringement of three additional patents, U.S. Patent Nos. 11,759,422; 11,655,475; and 11,851,660. This proceeding is currently pending.

11.12.2.5.2 Ireland

On July 7, 2025, GlaxoSmithKline Biologicals SA filed a lawsuit against our wholly owned subsidiary BioNTech Manufacturing GmbH, Pfizer Ireland Pharmaceuticals Unlimited Company, and Pfizer Healthcare Ireland Unlimited Company, alleging Comirnaty's infringement of European Patent Nos. 2,590,626, 4,066,856, and 4,226,941 in the High Court of Ireland. This proceeding is currently pending.

11.12.2.5.3 Unified Patent Court

On July 23, 2025, GlaxoSmithKline Biologicals SA filed two lawsuits against BioNTech SE, BioNTech Europe GmbH, BioNTech Manufacturing GmbH, and BioNTech Manufacturing Marburg GmbH, as well as 26 Pfizer entities, in the Unified Patent Court (Hague Division). In the first lawsuit, GSK alleges Comirnaty's infringement of European Patent No. 2,590,626, and in the second lawsuit, GSK alleges Comirnaty's infringement of European Patent Nos. 4,066,856 and 4,226,941. This proceeding is currently pending.

11.12.2.5.4 United Kingdom

On September 5, 2025, the Company and Pfizer filed a revocation action against GlaxoSmithKline Biologics SA in the Business and Property Courts of England and Wales, in the U.K. High Court, requesting revocation of European Patent Nos. 2,590,626, 4,066,856, and 4,226,941. On October 7, 2025, GSK filed a defense and counterclaim for infringement against BioNTech SE and BioNTech Manufacturing GmbH, alleging Comirnaty's infringement of European Patent Nos. 2,590,626, 4,066,856, and 4,226,941. This proceeding is currently pending.

We believe we have strong defenses against the allegations claimed relative to each of the patents and intend to vigorously defend ourselves in the lawsuit mentioned above. However, our analysis of GSK's claims is ongoing and complex, and we believe the outcome of the suit remains substantially uncertain. Taking into account discussions with our external lawyers, we do not consider the probability of an outflow of resources to be sufficient to recognize a provision. In our opinion, these matters constitute contingent liabilities. However, it is currently impractical for us to estimate with sufficient reliability the respective contingent liabilities.

11.12.2.6 Promosome Proceedings

In January 2025, Promosome LLC, or "**Promosome**", filed a lawsuit against us and Pfizer in the Unified Patent Court, or UPC, Munich Division, alleging that *Comirnaty* infringes EP 2 401 365 and seeking monetary relief. An oral hearing wherein the UPC will hear the parties' arguments regarding infringement and invalidity has been scheduled for May 2026. This proceeding is currently pending.

We believe we have strong defenses against the allegations claimed relative to the patent and intend to vigorously defend ourselves in the lawsuit mentioned above. However, our analysis of Promosome's claim is ongoing and complex, and we believe the outcome of the suit remains substantially uncertain. Taking into account discussions with our external lawyers, we do not consider the probability of an outflow of resources to be sufficient to recognize a provision. In our opinion, these matters constitute contingent liabilities. However, it is currently impractical for us to estimate with sufficient reliability the respective contingent liability.

11.12.2.7 Ladewig Proceedings

In January 2024, we and certain of our officers and directors were named as defendants in a securities class action complaint captioned Ladewig v. BioNTech SE filed in the U.S. District Court for the Central District of California brought on behalf of a putative class of investors who purchased our securities from March 30, 2022 through October 13, 2023. Plaintiffs allege that we violated Sections 10(b) and 20(a) of the Exchange Act by stating that we were "well positioned" to remain a "market leader" in vaccines for the prevention of COVID-19 and by purportedly overstating demand for *Comirnaty*. Plaintiffs further allege that we failed to adapt our inventory to reflect the emergence of new COVID variants. On July 15, 2024, the case was transferred to the U.S. District Court for the Southern District of New York. We applied for a motion to dismiss the class action complaint on November 18, 2024. On September 30, 2025, the Court dismissed the operative complaint in its entirety. Plaintiffs have until October 30, 2025 to file a notice of appeal.

We believe we have strong defenses against the allegations claimed and intend to vigorously defend ourselves in the lawsuit mentioned above. We cannot reasonably estimate the maximum potential exposure or the range of possible loss for this matter. Taking into account discussions with our external lawyers, we do not consider the probability of an outflow of resources to be sufficient to recognize a provision. In our opinion, these matters constitute contingent liabilities. However, it is currently impractical for us to estimate with sufficient reliability the respective contingent liabilities.

11.13 Material Contracts

11.13.1 Biotheus Acquisition

On November 13, 2024, our subsidiary, BioNTech Collaborations GmbH, entered into an agreement and plan of merger, or the "**Merger Agreement**", with Biotheus, a clinical-stage biotechnology company dedicated to the discovery and development of novel antibodies to address unmet medical needs of patients with oncological or inflammatory diseases. The acquisition supports the global execution of our oncology strategy and provides full global rights to BNT327/PM8002, an investigational PD-L1 x VEGF-A bispecific antibody, with potential to replace current checkpoint inhibitor standard of care treatments for solid tumors.

Following the satisfaction of several customary closing conditions and regulatory approvals as defined in the Merger Agreement, the acquisition closed on January 31, 2025.

Upon closing and under the terms of the agreement, we paid Biotheus shareholders upfront of approximately $850.0 million, predominantly in cash, with a small portion in ADSs, to acquire 100% of the issued share capital of Biotheus, and agreed to pay additional performance-based contingent payments of up to $150.0 million if certain milestones are met.

By closing the acquisition, we gained full rights to Biotheus's pipeline candidates and its in-house bispecific antibody drug conjugate capability. The acquisition has expanded our footprint in China, adding a local research and development hub to conduct clinical trials. In addition, we have gained a biologics manufacturing facility to contribute to our future global manufacturing and supply, and more than 300 Biotheus employees in R&D, manufacturing and enabling functions have joined the BioNTech workforce.

11.13.2 InstaDeep Acquisition

On January 10, 2023, we entered into a share purchase agreement, or "**InstaDeep SPA**", with the shareholders of InstaDeep, a leading global technology company in the field of AI and ML, under which we agreed to acquire 100% of the remaining shares in InstaDeep, excluding the shares already owned by us. The InstaDeep SPA was amended on July 31, 2023 to deal with certain matters arising after its execution.

Following the satisfaction of several customary closing conditions and regulatory approvals as defined in the InstaDeep SPA, the acquisition closed on July 31, 2023.

The total consideration to acquire the remaining InstaDeep shares, excluding the shares already owned by BioNTech, amounts to approximately €500 million in cash, BioNTech shares, and performance-based future milestone payments.

InstaDeep now operates as a U.K.-based global subsidiary and will continue to provide its services to clients around the world in diverse industries, including in the Technology, Transport & Logistics, Industrial and Financial Services sectors. Additionally, the acquisition is enabling the creation of a fully integrated, enterprise-wide capability that leverages AI and ML technologies across our therapeutic platforms and operations.

11.13.3 Other Material Contracts

In addition, we consider the agreements described in sections "*11.6 Third-Party Collaborations*" and "*11.7.3 In-Licensing*" as material contracts. Furthermore, we consider the Purchase Agreement as a material contract (see also sections "*11.12.1.1 Settlement Agreement with NIH*" and "*11.12.1.2 Settlement Agreement with UPenn*").

12 REGULATORY ENVIRONMENT

12.1 Regulatory Overview

Government authorities in the United States at the federal, state and local levels, and in the European Union and other countries and jurisdictions, extensively regulate, among other things, the research, development, testing, manufacture, quality control, approval, packaging, storage, record-keeping, labeling, advertising, promotion, distribution, marketing, post-approval monitoring and reporting and import and export of pharmaceutical products, including biological products. In addition, some jurisdictions regulate the pricing of pharmaceutical products. The processes for obtaining marketing approvals in the United States and in other jurisdictions, along with subsequent compliance with applicable statutes and regulations and other requirements of regulatory authorities, require the expenditure of substantial time and financial resources.

12.2 Regulation and Procedures Governing Approval of Drug and Biological Products in the United States

In the United States, the FDA regulates drugs under the Federal Food, Drug, and Cosmetic Act, or the "**FDCA**", and its implementing regulations and biologics under the FDCA, the Public Health Service Act, or the "**PHSA**", and their implementing regulations. Both drugs and biologics are subject to other federal, state and local statutes and regulations. The process of obtaining regulatory approvals and the subsequent compliance with applicable federal, state and local statutes and regulations requires the expenditure of substantial time and financial resources. Failure to comply with the applicable U.S. requirements at any time during the product development process, approval process or following approval may subject a sponsor or marketing authorization (BLA/NDA) holder to administrative or judicial sanctions. These sanctions could include, among other actions, the FDA's refusal to approve pending applications, withdrawal of an approval, license revocation, clinical hold, untitled or warning letters, voluntary or mandatory product recalls, market withdrawals, product seizures, total or partial suspension of production or distribution, injunctions, fines, refusals of government contracts, restitution, disgorgement and civil or criminal penalties. Any agency or judicial enforcement action could have a material adverse effect on us.

A sponsor seeking approval to market and distribute a new drug or biological product in the United States generally must satisfactorily complete each of the following steps:

- preclinical laboratory tests, animal studies and formulation studies all performed in accordance with applicable regulations, including the FDA's good laboratory practices regulations;
- submission to the FDA of an IND application for human clinical testing, which must become effective before human clinical trials may begin;
- approval by the IRB representing each clinical site before each clinical trial may be initiated;
- performance of adequate and well-controlled human clinical trials to establish the safety, potency and purity of the product candidate for each proposed indication, in accordance with applicable regulations, including GCP;
- preparation and submission to the FDA of a NDA for a drug product, or a BLA for a biological product requesting marketing approval for one or more proposed indications, including submission of detailed information on the manufacture and composition of the product in clinical development, evidence of safety, purity and potency from preclinical testing and clinical trials, and proposed labeling;
- review of the product by an FDA advisory committee, if applicable;
- satisfactory completion of one or more FDA inspections of the manufacturing facility or facilities, including those of third parties, at which the product, or components thereof, are produced to assess compliance with current GMP requirements and to assure that the facilities, methods and controls are adequate to preserve the product's identity, strength, quality and purity;
- satisfactory completion of any FDA audits of the clinical study sites to assure compliance with applicable regulations and GCP, and the integrity of clinical data in support of the NDA or BLA;

- payment of user fees and securing FDA approval of the NDA or BLA; and
- compliance with applicable regulations post approval, including any post-approval requirements, such as the potential requirement to implement a REMS and to conduct any post-approval studies required by the FDA.

The preclinical and clinical testing and approval process requires substantial time, effort and financial resources, and we cannot be certain that any approvals for our product candidates and any future product candidates will be granted on a timely basis, or at all.

12.2.1 Preclinical Studies and Investigational New Drug Application

Before testing any drug or biological product candidate in humans, the product candidate must undergo preclinical testing. Preclinical tests include laboratory evaluations of product chemistry, formulation and stability, as well as animal studies to evaluate the potential for activity and toxicity. The conduct of the preclinical tests and formulation of the compounds for testing must comply with federal regulations and requirements. The results of the preclinical tests, together with manufacturing information, analytical data, any available clinical data or literature and a proposed clinical protocol, are submitted to the FDA as part of an IND application. The IND automatically becomes effective 30 days after receipt by the FDA, unless before that time the FDA raises concerns or questions about the product or conduct of the proposed clinical trial, including concerns that patients will be exposed to unreasonable health risks, and places the trial on a clinical hold. In that case, the IND sponsor and the FDA must resolve any outstanding FDA concerns before the clinical trial can begin.

As a result, submission of the IND may result in the FDA not allowing the trial to commence or not be conducted on the terms originally specified by the sponsor in the IND. If the FDA raises concerns or questions either during this initial 30-day period, or at any time during the IND process, it may choose to impose a partial or complete clinical hold. If the FDA imposes a clinical hold, trials may not recommence without FDA authorization and then only under terms authorized by the FDA. A clinical hold issued by the FDA may therefore delay either a proposed clinical study or cause suspension of an ongoing study, until all outstanding concerns have been adequately addressed and the FDA has notified the company that investigation may proceed. This could cause significant difficulties in completing planned clinical trials in a timely manner.

The FDA may impose clinical holds on a product candidate at any time before or during clinical trials due to safety concerns or non-compliance.

12.2.2 Human Clinical Trials in Support of an NDA or a BLA

Clinical trials involve the administration of the investigational product candidate to healthy volunteers or patients with the disease to be treated under the supervision of qualified principal investigators, generally physicians not employed by or under the trial sponsor's control, in accordance with GCP requirements, which include the requirement that all patients provide their informed consent for their participation. Clinical trials are conducted under study protocols detailing, among other things, the objectives of the study, inclusion and exclusion criteria, the parameters to be used in monitoring safety, dosing procedures and the effectiveness criteria to be evaluated. A protocol for each clinical trial and any subsequent protocol amendments must be submitted to the FDA as part of the IND.

A sponsor who wishes to conduct a clinical trial outside the United States may, but need not, obtain FDA authorization to conduct the clinical trial under an IND. If a foreign clinical trial is not conducted under an IND, the sponsor may submit data from the clinical trial to the FDA in support of the NDA or BLA so long as the clinical trial is well-designed and well-conducted in accordance with GCP, including review and approval by an independent ethics committee, and the FDA is able to validate the study data through an onsite inspection, if necessary.

Further, each clinical trial must be reviewed and approved by an IRB either centrally or individually at each institution at which the clinical trial will be conducted. The IRB will consider, among other things, clinical trial design, patient informed consent, ethical factors and the safety of patients. An IRB must operate in compliance with FDA regulations. The FDA, IRB, or the clinical trial sponsor may suspend or discontinue a clinical trial at any time for various reasons, including a finding that the clinical trial is not being conducted in accordance with FDA requirements or that the patients are being exposed to an unacceptable health risk. Clinical testing also must satisfy extensive GCP rules and the requirements

for informed consent. The IRB also approves the form and content of the informed consent that must be signed by each clinical trial subject or his or her legal representative and receive periodic reports regarding the investigation from the investigators. Additionally, some clinical trials are overseen by an independent group of qualified experts organized by the clinical trial sponsor, known as a data safety monitoring board or committee, or DSMB. This group may recommend continuation of the study as planned, changes in study conduct, or cessation of the study at designated check points based on access to certain data from the study.

Clinical trials typically are conducted in three sequential phases, but the phases may overlap or be combined. Additional studies may be required after approval.

- Phase 1 clinical trials, or "**Phase 1**", are initially conducted in a limited population to test the product candidate for safety, including adverse effects, dose tolerance, absorption, metabolism, distribution, excretion and pharmacodynamics in healthy humans or, on occasion, in patients, such as in the case of some products for severe or life-threatening diseases, especially when the product may be too inherently toxic to ethically administer to healthy volunteers.
- Phase 2 clinical trials, or "**Phase 2**", are generally conducted in a limited patient population to identify possible adverse effects and safety risks, preliminarily evaluate the efficacy of the product candidate for specific targeted indications and determine dose tolerance and optimal dosage. Multiple Phase 2 clinical trials may be conducted by the sponsor to obtain information prior to beginning larger Phase 3 clinical trials. When a drug is intended to treat life-threatening or severely debilitating illnesses, and particularly for rare diseases, the FDA may accept well-controlled Phase 2 clinical trials as adequate to provide sufficient data on the drug's safety and effectiveness to support a decision on its approvability for marketing, in which case Phase 3 clinical trials would not be required.
- Phase 3 clinical trials, or "**Phase 3**", proceed if the Phase 2 clinical trials demonstrate that a certain dose or dose range of the product candidate is potentially effective and has an acceptable safety profile. Phase 3 clinical trials are undertaken within an expanded patient population, often at geographically dispersed clinical trial sites, to gather additional information about safety and effectiveness necessary to evaluate the overall benefit-risk relationship of the product and to provide the basis for product labeling.

In some cases, the FDA may approve an NDA or a BLA for a product candidate but require the sponsor to conduct additional clinical trials to further assess the product candidate's safety and/or effectiveness after approval. Such post-approval trials are typically referred to as Phase 4 clinical trials, or "**Phase 4**". These studies may be used to gain additional experience from the treatment of patients in the intended therapeutic indication and to document a clinical benefit in the case of biologics approved under accelerated approval regulations. If the FDA approves a product while a company has ongoing clinical trials that were not necessary for approval, a company may be able to use the data from these clinical trials to meet all or part of any Phase 4 clinical trial requirement or to request a change in the product labeling. Failure to exhibit due diligence with regard to conducting required Phase 4 clinical trials or to comply with post approval commitments could result in withdrawal of approval for products.

During all phases of clinical development, regulatory agencies require extensive monitoring and auditing of all clinical activities, clinical data and clinical trial investigators. Annual progress reports detailing the results of the clinical trials must be submitted to the FDA. Written IND safety reports must be promptly submitted to the FDA and the investigators for serious and unexpected adverse events, any findings from other trials, tests in laboratory animals or in vitro testing that suggest a significant risk for patients, or any clinically important increase in the rate of a serious suspected adverse reaction over that listed in the protocol or investigator brochure. The sponsor must submit an IND safety report within 15 calendar days after the sponsor determines that the information qualifies for reporting. The sponsor also must notify the FDA of any unexpected fatal or life-threatening suspected adverse reaction within seven calendar days after the sponsor's initial receipt of the information. The FDA or the sponsor or its DSMB may suspend a clinical trial or IND at any time on various grounds, including a finding that the patients are being exposed to an unacceptable health risk. Similarly, an IRB can suspend or terminate approval of a clinical trial at its institution if the clinical trial is not being conducted in accordance with the IRB's requirements or if the new drug candidate or biological product candidate has been associated with unexpected serious harm to patients.

There are also requirements governing the reporting of ongoing clinical trials and completed clinical trial results to public registries. Sponsors of clinical trials of FDA-regulated products, including biologics, are required to register and disclose certain clinical trial information, which is publicly available at www.clinicaltrials.gov. Information related to the product, patient population, phase of investigation, trial sites and investigators, and other aspects of the clinical trial is then made public as part of the registration. Sponsors are also obligated to discuss the results of their clinical trials after completion. Disclosure of the results of these trials can be delayed until the new product or new indication being studied has been approved.

12.2.3 Compliance with GMP Requirements

Before approving an NDA or a BLA, the FDA typically will inspect the facility or facilities where the product is manufactured. The FDA will not approve an application unless it determines that the manufacturing processes and facilities are in full compliance with GMP requirements and adequate to assure consistent production of the product within required specifications. Among other things, the sponsor must develop methods for testing the identity, strength, quality, potency and purity of the final drug or biological product. Additionally, appropriate packaging must be selected and tested, and stability studies must be conducted to demonstrate that the drug or biological product does not undergo unacceptable deterioration over its shelf life. In particular, the PHSA emphasizes the importance of manufacturing control for products like biologics whose attributes cannot be precisely defined.

Manufacturers and others involved in the manufacture and distribution of drugs and biological products must also register their establishments with the FDA and certain state agencies. Both domestic and foreign manufacturing establishments must register and provide additional information to the FDA upon their initial participation in the manufacturing process.

The manufacturing facilities may be subject to periodic announced and unannounced inspections by government authorities to ensure compliance with GMPs and other laws. Manufacturers may have to provide, on request, electronic or physical records regarding their establishments. Delaying, denying, limiting or refusing inspection by the FDA may lead to a product being deemed to be adulterated.

12.2.4 Review and Approval of an NDA or a BLA

The results of product candidate development, preclinical testing and clinical trials, including negative or ambiguous results as well as positive findings, are submitted to the FDA as part of an NDA or a BLA requesting a license to market the product. These applications must contain extensive manufacturing information and detailed information on the composition of the product and proposed labeling. The FDA adjusts the Prescription Drug User Fee Act, or "**PDUFA**", user fees on an annual basis. Fee waivers or reductions are available in certain circumstances, including a waiver of the application fee for the first application filed by a small business. Additionally, no user fees are assessed on NDAs or BLAs for products designated as orphan drugs, unless the product also includes a non-orphan indication.

The FDA has 60 days after submission of the application to conduct an initial review to determine whether the NDA or BLA is sufficient to accept for filing based on the agency's threshold determination that it is substantially complete so as to permit substantive review. Once the submission has been accepted for filing, the FDA begins an in-depth review of the application. Under the goals and policies agreed to by the FDA under PDUFA, the FDA aims to complete its initial review of a standard application and respond to the sponsor within ten months of the 60-day filing date, and for a priority review application within six months. The FDA does not always meet its PDUFA goal dates for standard and priority NDA or BLA applications, and its review goals are subject to change from time to time. The review process may often be significantly extended by FDA requests for additional information or clarification. The review process and the PDUFA goal date may also be extended by three months if the FDA requests or if the sponsor otherwise provides additional information or clarification regarding information already provided in the submission within the last three months before the PDUFA goal date.

The FDA reviews NDA and BLA applications to determine, among other things, whether the proposed product is safe and potent, and/or effective, for its intended use, and has an acceptable purity profile, and whether the product is being manufactured in accordance with GMP requirements to assure and preserve the product's identity, safety, strength, quality, potency and purity. On the basis of the FDA's evaluation of the application and accompanying information, including the results of the inspection of the manufacturing facilities and any FDA audits of clinical trial sites to assure compliance with GCPs,

the FDA may issue an approval letter or a complete response letter. An approval letter authorizes commercial marketing of the product with specific prescribing information for specific indications. Under the FDCA, the FDA may approve an NDA if it determines that the product is safe and effective for its intended use, the benefits of the drug outweigh any risks, and the methods used in manufacturing the drug and the controls used to maintain the drug's quality are adequate to preserve the drug's identity, strength, quality and purity. Under the PHSA, the FDA may approve a BLA if it determines that the product is safe, pure and potent and the facility where the product will be manufactured meets standards designed to ensure that it continues to be safe, pure and potent. If the application is not approved, the FDA may issue a complete response letter, which will contain the conditions that must be met in order to secure final approval of the application, and when possible will outline recommended actions the sponsor might take to obtain approval of the application. If a complete response letter is issued, the sponsor may either resubmit the NDA or BLA, addressing all of the deficiencies identified in the letter, or withdraw the application.

Sponsors that receive a complete response letter who elect to address the deficiencies may submit to the FDA information that represents a complete response to the issues identified by the FDA in the response letter. Such resubmissions are classified under PDUFA as either Class 1 or Class 2, based on the information submitted by a sponsor in response to an action letter. Under the goals and policies agreed to by the FDA under PDUFA, the FDA aims to review and act on a Class 1 resubmission with two months of receipt and, with respect to a Class 2 resubmission, within six months of receipt. The FDA will not approve an application until issues identified in the complete response letter have been addressed.

The FDA may also refer an application to an Advisory Committee for review, evaluation and recommendation as to whether the application should be approved and under what conditions. In particular, the FDA may refer applications for novel drug or biological products or drug or biological products that present difficult questions of safety or efficacy to an advisory committee. Typically, an Advisory Committee is a panel of independent experts, including clinicians and other scientific experts. The FDA is not bound by the recommendations of an Advisory Committee, but it considers such recommendations carefully when making decisions.

If the FDA approves a new product, it may limit the approved indications for use of the product, or limit the approval to specific dosages. It may also require that certain contraindications, warnings or precautions be included in the product labeling. In addition, the FDA may call for post-approval studies, including Phase 4 clinical trials, to further assess the product's safety after approval. The FDA may also require testing and surveillance programs to monitor the product after commercialization, or impose other conditions, including distribution restrictions or other risk management mechanisms, including risk evaluation and mitigation strategies, or REMS, to help ensure that the benefits of the product outweigh the potential risks. REMS can include medication guides, communication plans for healthcare professionals, and elements to assure safe use, or "**ETASU**". ETASU can include, but are not limited to, special training or certification for prescribing or dispensing, dispensing only under certain circumstances, special monitoring and the use of patent registries. If the FDA concludes a REMS is needed, the sponsor of the NDA or BLA must submit a proposed REMS; the FDA will not approve the NDA or BLA without a REMS, if required. The FDA may prevent or limit further marketing of a product based on the results of post-marketing studies or surveillance programs. After approval, many types of changes to the approved product, such as adding new indications, manufacturing changes and additional labeling claims, are subject to further testing requirements and FDA review and approval.

12.2.5 Fast Track, Breakthrough Therapy and Priority Review Designations

The FDA may designate certain products for expedited review if they are intended to address an unmet medical need in the treatment of a serious or life-threatening disease or condition. These programs include fast track designation, breakthrough therapy designation and priority review designation.

The FDA may designate a product for fast track review if it is intended, whether alone or in combination with one or more other products, for the treatment of a serious or life-threatening disease or condition, and it demonstrates the potential to address unmet medical needs for such disease or condition. Fast track designation applies to the combination of the product and the specific indication for which it is being studied. The sponsor of a new drug or biologic may request that the FDA designate the drug or biologic as a fast track product at any time during the clinical development of the product. For fast track products, sponsors may have greater interactions with the FDA and the FDA may initiate review of

sections of a fast track product's application before the application is complete. This rolling review may be available if the FDA determines, after preliminary evaluation of clinical data submitted by the sponsor, that a fast track product may be effective. The sponsor must also provide, and the FDA must approve, a schedule for the submission of the remaining information and the sponsor must pay applicable user fees. However, the FDA's time period goal for reviewing a fast track application does not begin until the last section of the application is submitted. Fast track designation may be withdrawn by the FDA if the FDA believes that the designation is no longer supported by data emerging in the clinical trial process.

In 2012, Congress enacted the Food and Drug Administration Safety and Innovation Act, or the "**FDASIA**". This law established a new regulatory scheme allowing for expedited review of products designated as "breakthrough therapies". A product may be designated as a breakthrough therapy if it is intended, either alone or in combination with one or more other products, to treat a serious or life-threatening disease or condition and preliminary clinical evidence indicates that the product may demonstrate substantial improvement over existing therapies on one or more clinically significant endpoints, such as substantial treatment effects observed early in clinical development. The FDA may take certain actions with respect to breakthrough therapies, including holding additional meetings with the sponsor throughout the development process; providing timely advice to the product sponsor regarding development and approval; involving more senior staff in the review process; assigning a cross-disciplinary project lead for the review team; and taking other steps to facilitate the design of clinical trials in an efficient manner.

The FDA may designate a product for priority review if it is a product that treats a serious condition and, if approved, would provide a significant improvement in safety or effectiveness. The FDA determines, on a case-by-case basis, whether the proposed product represents a significant improvement when compared with other available therapies. Significant improvement may be illustrated by evidence of increased effectiveness in the treatment of a condition, elimination or substantial reduction of a treatment-limiting product reaction, documented enhancement of patient compliance that may lead to improvement in serious outcomes and evidence of safety and effectiveness in a new subpopulation. A priority designation is intended to direct overall attention and resources to the evaluation of such applications, and to shorten the FDA's goal for taking action on a marketing application to six months (compared to 10 months under standard review).

Fast track designation, priority review and breakthrough therapy designation may expedite the development or approval process, but do not change the standards for approval.

12.2.6 Accelerated Approval Pathway

The FDA may grant accelerated approval to a product for a serious or life-threatening condition that provides meaningful therapeutic advantage to patients over existing treatments based upon a determination that the product has an effect on a surrogate endpoint that is reasonably likely to predict clinical benefit. The FDA may also grant accelerated approval for such a condition when the product has an effect on an intermediate clinical endpoint that can be measured earlier than an effect on irreversible morbidity or mortality, or "**IMM**", and that is reasonably likely to predict an effect on IMM or other clinical benefit, taking into account the severity, rarity or prevalence of the condition and the availability or lack of alternative treatments. Products granted accelerated approval must meet the same statutory standards for safety and effectiveness as those granted traditional approval.

For the purposes of accelerated approval, a surrogate endpoint is a marker, such as a laboratory measurement, radiographic image, physical sign or other measure that is thought to predict clinical benefit, but is not itself a measure of clinical benefit. Surrogate endpoints can often be measured more easily or more rapidly than clinical endpoints. An intermediate clinical endpoint is a measurement of a therapeutic effect that is considered reasonably likely to predict the clinical benefit of a product, such as an effect on IMM. The FDA has stated that although it has limited experience with accelerated approvals based on intermediate clinical endpoints, such endpoints generally may support accelerated approval where the therapeutic effect measured by the endpoint is not itself a clinical benefit and basis for traditional approval, if there is a basis for concluding that the therapeutic effect is reasonably likely to predict the ultimate clinical benefit of a product.

The accelerated approval pathway is most often used in settings in which the course of a disease is long and an extended period of time is required to measure the intended clinical benefit of a product. Thus, accelerated approval has been used extensively in the development and approval of products for treatment of a variety of cancers in which the goal of therapy is generally to improve survival or decrease morbidity and the duration of the typical disease course requires lengthy and sometimes large trials to demonstrate a clinical or survival benefit.

The accelerated approval pathway is usually contingent on a sponsor's agreement to conduct, in a diligent manner, additional post-approval confirmatory studies to verify and describe the product's clinical benefit. As a result, a product candidate approved on this basis is subject to rigorous post-marketing compliance requirements, including the completion of Phase 4 or post-approval clinical trials to confirm the effect on the clinical endpoint. Failure to conduct required post-approval studies, or to confirm a clinical benefit during post-marketing studies, may lead the FDA to withdraw the product from the market under expedited withdrawal procedures applicable to products approved under accelerated approval. All promotional materials for product candidates approved under accelerated regulations are subject to prior review by the FDA.

Accelerated approval pathways are available for regenerative medicine therapies that meet certain conditions. Regenerative medicine therapies include cell therapies (both allogeneic and autologous), therapeutic tissue engineering products, human cell and tissue products, and combination products using any such therapies or products, except those regulated under section 361 of the PHSA. Human gene therapies, including genetically modified cells, that lead to a sustained effect on cells or tissues, may also meet the definition of a regenerative medicine therapy, as may xenogeneic cell products.

Regenerative medicine therapies designed to treat, modify, reverse or cure serious conditions are eligible for FDA's expedited programs, including fast track designation, breakthrough therapy designation, priority review and accelerated approval, if they meet the criteria for such programs. They may also be eligible for Regenerative Medicine Advanced Therapy Designation, or "**RMAT designation**".

An investigational drug is eligible for RMAT designation if it meets the definition of regenerative medicine therapy, it is intended to treat, modify, reverse or cure a serious condition, and preliminary clinical evidence indicates that the regenerative medicine therapy has the potential to address unmet medical needs for such condition. An unmet medical need is a condition whose treatment or diagnosis is not addressed adequately by available therapy.

RMAT designation confers all the benefits of the fast track and breakthrough therapy designation programs, including early interactions with the FDA. The FDA reviews each application on a case-by-case basis to determine whether the clinical evidence is sufficient to support RMAT designation, considering factors such as the rigor of data collection, the consistency and persuasiveness of the outcomes, the number of patients, and the severity, rarity or prevalence of the condition, among other factors. The FDA may decline to grant RMAT designation if it finds the clinical evidence insufficient.

RMAT designation may expedite the development or approval process, but it does not change the standards for approval.

12.2.7 Emergency Use Authorizations

The Secretary of Health and Human Services has the authority to authorize unapproved medical products, including vaccines, to be marketed in the context of an actual or potential emergency that has been designated by government officials. The COVID-19 pandemic was designated such a national emergency. After an emergency has been announced, the Secretary of Health and Human Services may authorize the issuance of, and the FDA Commissioner may issue, Emergency Use Authorizations, or EUAs, for the use of specific products based on criteria established by statute, including that the product at issue may be effective in diagnosing, treating, or preventing serious or life-threatening diseases when there are no adequate, approved, and available alternatives. An EUA is subject to additional conditions and restrictions and is product-specific. An EUA terminates when the emergency determination underlying the EUA terminates or full approval is obtained. An EUA is not a long-term alternative to obtaining FDA approval, licensure, or clearance for a product. FDA may revoke an EUA where it is determined that the underlying health emergency no longer exists or warrants such authorization, so it is not possible to predict how long an EUA may remain in place.

12.2.8 Post-Approval Regulation

If regulatory approval for marketing of a product or for a new indication for an existing product is obtained, the sponsor will be required to comply with rigorous and extensive post-approval regulatory requirements as well as any post-approval requirements that the FDA has imposed on the particular product as part of the approval process. The sponsor will be required, among other things, to report certain adverse reactions and manufacturing problems, or certain other events to the FDA, provide updated safety and efficacy information and comply with requirements concerning advertising and promotional and labeling. Manufacturers and certain of their subcontractors are required to register their establishments with the FDA and certain state agencies, and are subject to periodic unannounced inspections by the FDA and certain state agencies for compliance with ongoing regulatory requirements, including GMP regulations, which impose certain procedural and documentation requirements upon manufacturers. Accordingly, the BLA holder and its third-party manufacturers must continue to expend time, money and effort in the areas of production and quality control to maintain compliance with GMP regulations and other regulatory requirements. In addition, changes to the manufacturing process or facility generally require prior FDA approval before being implemented, and other types of changes to the approved product, such as adding new indications and additional labeling claims, are also subject to further FDA review and approval.

Once an approval is granted, the FDA may withdraw the approval if compliance with regulatory requirements and standards is not maintained or if problems occur after the product reaches the market. Later discovery of previously unknown problems with a product, including adverse events of unanticipated severity or frequency, or with manufacturing processes, or failure to comply with regulatory requirements, may result in revisions to the approved labeling to add new safety information; imposition of post-market study requirements or clinical trial requirements to assess new safety risks; or imposition of distribution restrictions or other restrictions under a REMS program. Other potential consequences include, among other things:

- restrictions on the marketing or manufacturing of the product, complete withdrawal of the product from the market or product recalls;
- fines, untitled letters or warning letters or holds on post-approval clinical trials;
- adverse publicity, including FDA statements regarding the safety of products;
- refusal of the FDA to approve pending applications or supplements to approved applications, or suspension or revocation of product license approvals;
- product seizure or detention, or refusal to permit the import or export of products; or
- injunctions, fines, debarment, disgorgement of profits or the imposition of civil or criminal penalties.

The FDA strictly regulates marketing, labeling, advertising and promotion of products that are placed on the market. Pharmaceutical products may be promoted only for the approved indications and in accordance with the provisions of the approved label. The FDA and other agencies actively enforce the laws and regulations prohibiting the promotion of off-label uses, and a company that is found to have improperly promoted off-label uses may be subject to significant liability.

12.2.9 Orphan Drug Designation

Orphan drug designation in the United States is designed to encourage sponsors to develop products intended for rare diseases or conditions. In the United States, a rare disease or condition is statutorily defined as a disease or condition that affects fewer than 200,000 individuals in the United States or that affects more than 200,000 individuals in the United States but for which there is no reasonable expectation that the cost of developing and making available the product for the disease or condition will be recovered from sales of the product in the United States.

Orphan drug designation qualifies a company for certain financial incentives, including tax advantages and, if the product receives the first FDA approval for the indication for which it has orphan designation, orphan market exclusivity for seven years following the date of the product's marketing approval which runs concurrently with any other exclusivity. An application for designation as an orphan product can be made any time prior to the filing of an application for approval to market the product. Once a product receives orphan drug designation from the Office of Orphan Products Development at the FDA, the product must then go through the review and approval process like any other product.

In addition, a sponsor of a product that is otherwise the same product as an already approved orphan drug may seek and obtain orphan drug designation for the subsequent product for the same rare disease or condition if it can present a plausible hypothesis that its product may be clinically superior to the first product. More than one sponsor may receive orphan drug designation for the same product for the same rare disease or condition, but each sponsor seeking orphan drug designation must file a complete request for designation.

The period of exclusivity begins on the date that the marketing application is approved by the FDA and applies only to the indication for which the product has been designated. The FDA may approve a second application for the same product for a different use or a second application for a clinically superior version of the product for the same use. The FDA cannot, however, approve the same product made by another manufacturer for the same indication during the orphan market exclusivity period unless it has the consent of the sponsor, the manufacturer makes a showing of clinical superiority over the product with orphan exclusivity, or the sponsor is unable to provide sufficient quantities.

Orphan product designation does not convey any advantage in or shorten the duration of the regulatory review and approval process.

12.2.10 Pediatric Studies and Exclusivity

Under the Pediatric Research Equity Act of 2003, an NDA or a BLA or supplement thereto must contain data that are adequate to assess the safety and effectiveness of the product for the claimed indications in all relevant pediatric subpopulations, and to support dosing and administration for each pediatric subpopulation for which the product is safe and effective. Sponsors who are planning to submit a marketing application for a drug or biological product that includes a new active ingredient, new indication, new dosage form, new dosing regimen or new route of administration must also submit pediatric study plans prior to the assessment data, and no later than 60 calendar days following an end-of-Phase 2 meeting with the FDA or, if there is no such meeting, as early as practicable before the initiation of the Phase 3 or Phase 2/3 study. Pediatric study plans must contain an outline of the proposed pediatric study or studies the sponsor plans to conduct, including study objectives and design, any deferral or waiver requests and other information required by regulation. The sponsor, the FDA, and the FDA's internal review committee must then review the information submitted, consult with each other and agree upon a final plan. The FDA or the sponsor may request an amendment to the plan at any time.

The FDA may, on its own initiative or at the request of the sponsor, grant deferrals for submission of some or all pediatric data until after approval of the product for use in adults, or full or partial waivers from the pediatric data requirements. Additional requirements and procedures relating to deferral requests and requests for extension of deferrals are contained in FDASIA. Unless otherwise required by regulation, the pediatric data requirements do not apply to products with orphan designation.

Pediatric exclusivity is another type of non-patent marketing exclusivity in the United States and, if granted, provides for the attachment of an additional six months of marketing protection to the term of any existing regulatory exclusivity, including the non-patent and orphan exclusivity. This six-month exclusivity may be granted if an NDA or a BLA sponsor submits pediatric data that fairly respond to a written request from the FDA for such data. The data do not need to show the product to be effective in the pediatric population studied; rather, if the clinical trial is deemed to fairly respond to the FDA's request, the additional protection is granted. If reports of requested pediatric studies are submitted to and accepted by the FDA within the statutory time limits, whatever statutory or regulatory periods of exclusivity or patent protection cover the product are extended by six months. This is not a patent term extension, but it effectively extends the regulatory period during which the FDA cannot approve another application.

12.2.11 Biosimilars and Reference Product Exclusivity

The ACA, signed into law in 2010, includes a subtitle called the Biologics Price Competition and Innovation Act of 2009, which created an abbreviated approval pathway for biological products that are biosimilar to or interchangeable with an FDA-approved reference biological product. To date, a number of biosimilars have been licensed under the BPCIA, and numerous biosimilars have been approved in Europe.

Under the BPCIA, an application for a biosimilar product may not be submitted to the FDA until four years following the date that the reference product was first licensed by the FDA. In addition, the approval of a biosimilar product may not be made effective by the FDA until twelve years from the date on which the reference product was first licensed. During this twelve-year period of exclusivity, another company may still market a competing version of the reference product if the FDA approves a full BLA for the competing product containing that sponsor's own preclinical data and data from adequate and well-controlled clinical trials to demonstrate the safety, purity and potency of its product. The BPCIA also created certain exclusivity periods for biosimilars approved as interchangeable products. At this juncture, it is unclear whether products deemed "interchangeable" by the FDA will, in fact, be readily substituted by pharmacies, which are governed by state pharmacy law.

The FDA has issued several guidance documents outlining an approach to review and approval of biosimilars. Biosimilarity, which requires that there be no clinically meaningful differences between the biological product and the reference product in terms of safety, purity and potency, can be shown through analytical studies, animal studies, and a clinical study or studies. Interchangeability requires that a product is biosimilar to the reference product and the product must demonstrate that it can be expected to produce the same clinical results as the reference product in any given patient and, for products that are administered multiple times to an individual, the biologic and the reference biologic may be alternated or switched after one has been previously administered without increasing safety risks or risks of diminished efficacy relative to exclusive use of the reference biologic. Complexities associated with the larger, and often more complex, structures of biological products, as well as the processes by which such products are manufactured, pose significant hurdles to implementation of the abbreviated approval pathway that are still being worked out by the FDA.

The BPCIA is complex and continues to be interpreted and implemented by the FDA. In addition, recent government proposals have sought to reduce the twelve-year reference product exclusivity period. Other aspects of the BPCIA, some of which may impact the BPCIA exclusivity provisions, have also been the subject of recent litigation. As a result, the ultimate implementation and impact of the BPCIA is subject to significant uncertainty.

12.3 Regulation and Procedures Governing Approval of Medicinal Products in the European Union

The process governing approval of medicinal products, including biological medicinal products and advanced therapy medicinal products, or ATMPs, which comprise gene therapy products, somatic cell therapy products and tissue-engineered products, in the European Union generally follows the same lines as in the United States. It entails satisfactory completion of pharmaceutical development, nonclinical and clinical studies to establish the safety and efficacy of the medicinal product for each proposed indication. Moreover, an applicant must also demonstrate the ability to manufacture the product to a suitable quality.

12.3.1 Clinical Trial Approval

Under the Clinical Trials Regulation (EU) No 536/2014, clinical trials in the European Union must be conducted in accordance with European Union and national regulations and the International Conference on Harmonization guidelines on GCP. Additional GCP guidelines from the EU Commission, with a focus on traceability, apply to clinical trials of ATMPs. If the sponsor of the clinical trial is not established within the European Union, it must appoint an entity within the European Union to act as its legal representative. Sponsors submit one online application via a single online platform known as the Clinical Trials Information System for approval to run a clinical trial in several European countries, making it more efficient to carry out such multinational trials. It provides for strictly defined deadlines for the assessment of clinical trial applications. This means that one national authority takes the lead in reviewing the application and the other national authorities have only a limited involvement, although the clinical trial approval is still granted by each national competent authority. Any substantial changes to the trial protocol or other information submitted with the clinical trial applications must be notified to or approved by the relevant competent authorities and ethics committees.

The clinical trial application must be accompanied by a copy of the trial protocol and an investigational medicinal product dossier with supporting information prescribed by applicable legislation as further detailed in applicable guidance documents. Moreover, the sponsor must take out a clinical trial insurance policy, and in most European Union countries the sponsor is liable to provide 'no fault' compensation to any study subject injured in the clinical trial.

The sponsor of a clinical trial must register the clinical trial in advance, and information related to the product, patient population, phase of investigation, study sites and investigators, and other aspects of the clinical trial will be made public as part of the registration. The results of the clinical trial must be submitted to the competent authorities and, with the exception of non-pediatric Phase 1 trials, will be made public at the latest within twelve months after the end of the trial.

During the development of a medicinal product, the European Medicines Agency, or EMA, and national medicines regulators within the European Union provide the opportunity for dialogue and guidance on the development program. At the EMA level, this is usually done in the form of scientific advice, which is given by the Scientific Advice Working Party of the CHMP. A fee is incurred with each scientific advice procedure. Advice from the EMA is typically provided based on questions concerning, for example, quality (chemistry, manufacturing and controls testing), nonclinical testing and clinical studies, and pharmacovigilance plans and risk-management programs. Advice is not legally binding with regard to any future marketing authorization application of the product concerned.

12.3.2 Marketing Authorization

To obtain a marketing authorization for a product under the European Union regulatory system, a sponsor must submit a MAA, either under the centralized procedure administered by the EMA or one of the procedures administered by competent authorities in European Union member states (decentralized procedure, mutual recognition procedure, or if the product is to be approved in only one member state, the national procedure).

All application procedures require an application in the common technical document format, which includes the submission of detailed information about the manufacturing and quality of the product, and nonclinical and clinical trial information. There is an increasing trend in the European Union toward greater transparency and, while certain of the manufacturing or quality information is currently generally protected as commercially confidential information, the EMA and national regulatory authorities are now liable to disclose much of the nonclinical and clinical information in marketing authorization dossiers, including the full clinical study reports, in response to freedom of information requests after the marketing authorization has been granted. In October 2014, the EMA adopted a policy under which clinical study reports would be posted on the agency's website following the grant, denial or withdrawal of a MAA, subject to procedures for limited redactions and protection against unfair commercial use. The operation of this policy has been suspended in recent years due to priorities. However, it continues to apply the policy to COVID-19 vaccines and therapeutics. A similar transparency requirement is contained in the Clinical Trials Regulation (EU) No 536/2014.

A marketing authorization may be granted only to a sponsor established in the European Union. Regulation (EC) No. 1901/2006 on medicinal products for pediatric use provides that prior to obtaining a marketing authorization in the European Union in the centralized procedure, a sponsor must demonstrate compliance with all measures included in an EMA-approved Pediatric Investigation Plan covering all subsets of the pediatric population, unless the EMA has granted a product-specific waiver, class waiver or deferral for one or more of the measures included in the Pediatric Investigation Plan.

The centralized procedure provides for the grant of a single marketing authorization by the EU Commission that is valid for all European Union and European Economic Area member states. Pursuant to Regulation (EC) No. 726/2004, the centralized procedure is compulsory for specific products, including for medicines (including vaccines) produced by certain biotechnological processes, products designated as orphan medicinal products, advanced therapy medicinal products and products with a new active substance indicated for the treatment of certain diseases, including products for the treatment of cancer. For products with a new active substance indicated for the treatment of other diseases and products that are highly innovative or for which a centralized process is in the interest of patients, the centralized procedure is optional.

Under the centralized procedure, the CHMP established at the EMA is responsible for conducting the assessment of a product to define its risk/benefit profile. Under the centralized procedure, the maximum timeframe for the evaluation of an MAA is 210 days, excluding clock stops when additional information or written or oral explanation is to be provided by the applicant in response to questions from the CHMP.

Accelerated evaluation may be granted by the CHMP in exceptional cases, when a medicinal product is of major interest from the point of view of public health determined by three cumulative criteria: (i) the seriousness of the disease (e.g., heavy disabling or life-threatening diseases) to be treated, (ii) the absence or insufficiency of an appropriate alternative therapeutic approach, and (iii) anticipation of high therapeutic benefit.

If the CHMP accepts such a request, the time limit of 210 days will be reduced to 150 days, but it is possible that the CHMP may revert to the standard time limit for the centralized procedure if it determines that it is no longer appropriate to conduct an accelerated assessment. The Committee for Advanced Therapies, or "**CAT**", is responsible in conjunction with the CHMP for the evaluation of ATMPs. The CAT is primarily responsible for the scientific evaluation of ATMPs and prepares a draft opinion on the quality, safety and efficacy of each ATMP for which a MAA is submitted. The CAT's opinion is then taken into account by the CHMP when giving its final recommendation regarding the authorization of a product in view of the balance of benefits and risks identified. Although the CAT's draft opinion is submitted to the CHMP for final approval, the CHMP may depart from the draft opinion if it provides detailed scientific justification. The CHMP and CAT are also responsible for providing guidelines on ATMPs and have published numerous guidelines, including specific guidelines on gene therapies and cell therapies. These guidelines, which are not legally binding, provide additional guidance on the factors that the EMA will consider in relation to the development and evaluation of ATMPs and include, inter alia, the preclinical studies required to characterize ATMPs, the manufacturing and control information that should be submitted in a MAA; and post-approval measures required to monitor patients and evaluate the long term efficacy and potential adverse reactions of ATMPs.

The EU Commission may grant a "marketing authorization under exceptional circumstances". Such authorization is intended for products for which the applicant can demonstrate that it is unable to provide comprehensive data on the efficacy and safety under normal conditions of use, because the indications for which the product in question is intended are encountered so rarely that the applicant cannot reasonably be expected to provide comprehensive evidence, or in the present state of scientific knowledge, comprehensive information cannot be provided, or it would be contrary to generally accepted principles of medical ethics to collect such information. Consequently, marketing authorization under exceptional circumstances may be granted subject to certain specific obligations, which may include the following:

- the applicant must complete an identified program of studies within a time period specified by the competent authority, the results of which form the basis of a reassessment of the benefit/risk profile;
- the medicinal product in question may be supplied on medical prescription only and may in certain cases be administered only under strict medical supervision, possibly in a hospital, and in the case of a radio-pharmaceutical, by an authorized person; and
- the package leaflet and any medical information must draw the attention of the medical practitioner to the fact that the particulars available concerning the medicinal product in question are as yet inadequate in certain specified respects.

A marketing authorization under exceptional circumstances is subject to annual review to reassess the risk-benefit balance in an annual re-assessment procedure. Continuation of the authorization is linked to the annual reassessment and a negative assessment could potentially result in the marketing authorization being suspended or revoked. The renewal of the marketing authorization of a medicinal product under exceptional circumstances follows the same rules as a "normal" marketing authorization. After five years, the marketing authorization will then be renewed under exceptional circumstances for an unlimited period, unless the EMA decides, on justified grounds, to proceed with one additional five-year renewal.

The EU Commission may also grant a "conditional marketing authorization" prior to obtaining the comprehensive clinical data required for an application for a full marketing authorization. Such conditional marketing authorizations may be granted for product candidates (including medicines designated as orphan medicinal products and vaccines) if the CHMP finds that all the following requirements are met:

- the benefit-risk balance of the product is positive;
- it is likely that the applicant will be able to provide comprehensive data;

- unmet medical needs will be fulfilled; and
- the benefit to public health of the medicinal product's immediate availability on the market outweighs the risks due to need for further data.

A conditional marketing authorization will contain specific obligations to be fulfilled by the marketing authorization holder, including obligations with respect to the completion of ongoing or new studies, manufacturing information and with respect to the collection of pharmacovigilance data. Conditional marketing authorizations are valid for one year, and may be renewed annually, if the risk-benefit balance remains positive, and after an assessment of the need for additional or modified conditions and/or specific obligations. The timelines for the centralized procedure described above also apply with respect to the review by the CHMP of applications for a conditional marketing authorization. Once comprehensive data on the medicinal product have been obtained, the marketing authorization may be converted into a standard marketing authorization which is no longer subject to specific obligations. Initially, this is valid for five years, but can be renewed for unlimited validity.

During the COVID-19 pandemic, the EMA followed a "rolling review" process for COVID-19 vaccines, which is an ad hoc procedure by which data is assessed as it becomes available with the aim of granting a conditional marketing authorization.

The European Union medicines rules expressly permit the member states to adopt national legislation prohibiting or restricting the sale, supply or use of any medicinal products containing, consisting of or derived from a specific type of human or animal cell, such as embryonic stem cells.

12.3.3 Periods of Authorization and Renewals

A marketing authorization is valid for five years, in principle, and it may be renewed after five years on the basis of a reevaluation of the risk benefit balance by the EMA or by the competent authority of the authorizing member states. To that end, the marketing authorization holder must provide the EMA or the competent authority with a consolidated version of the file in respect of quality, safety and efficacy, including all variations introduced since the marketing authorization was granted, at least six months before the marketing authorization ceases to be valid. Once renewed, the marketing authorization is valid for an unlimited period, unless the EU Commission or the competent authority decides, on justified grounds relating to pharmacovigilance, to proceed with one additional five-year renewal period. Any authorization that is not followed by the placement of the product on the European Union market (in the case of the centralized procedure) or on the market of the authorizing member state within three years after authorization ceases to be valid (referred to as the "sunset" clause).

12.3.4 Emergency Use Distribution

The European Union medicines rules, as implemented into the national laws of the EU member states, permit national authorities to authorize temporarily the distribution of an unapproved medicinal product in certain emergency situations, including suspected or confirmed spread of pathogenic agents. Such an emergency use distribution, or "**EUD**" (sometimes referred to as a "temporary exemption", i.e., a temporary exemption from the requirement to obtain a marketing authorization), would apply for the duration of the emergency only and would be limited to the member state in which it has been issued. When considering whether to grant an EUD, the relevant member state decides, which data it requires for the grant of the EUD. COVID-19 vaccines to date have followed the centralized procedure, which was previously combined with a rolling review of data with a view to granting conditional marketing authorizations.

12.3.5 Regulatory Requirements after Marketing Authorization

Following approval, the holder of the marketing authorization is required to comply with a range of requirements applicable to the manufacturing, marketing, promotion and sale of the medicinal product. These include compliance with the European Union's stringent pharmacovigilance or safety reporting rules, pursuant to which post-authorization studies and additional monitoring obligations can be imposed. The holder of a marketing authorization must establish and maintain a pharmacovigilance system and appoint an individual qualified person for pharmacovigilance who is responsible for oversight of that system. Key obligations include expedited reporting of suspected serious adverse reactions and submission of periodic safety update reports, or "**PSURs**". All new MAAs must include a risk management plan, or "**RMP**", describing the risk management system that the company will put in place

and documenting measures to prevent or minimize the risks associated with the product. The regulatory authorities may also impose specific obligations as a condition of the marketing authorization. Such risk-minimization measures or post-authorization obligations may include additional safety monitoring, more frequent submission of PSURs, or the conduct of additional clinical trials or post-authorization safety or efficacy studies. RMPs and PSURs are routinely available to third parties requesting access, subject to limited redactions.

In addition, the manufacturing of authorized products, for which a separate manufacturer's license is mandatory, must also be conducted in strict compliance with the EMA's GMP requirements and comparable requirements of other regulatory bodies in the European Union, which mandate the methods, facilities and controls used in the manufacturing, processing and packing of products to assure their safety and identity. Specifically, medicinal products may only be manufactured in the European Union, or imported into the European Union from another country, by the holder of a manufacturing/import authorization from the competent national authority. The manufacturer or importer must have a qualified person who is responsible for certifying that each batch of product has been manufactured in accordance with European Union standards of good manufacturing practice, or GMP, before releasing the product for commercial distribution in the European Union or for use in a clinical trial. Manufacturing facilities are subject to periodic inspections by the competent authorities for compliance with GMP.

Finally, the marketing and promotion of authorized products, including industry-sponsored continuing medical education and advertising directed toward the prescribers of products and/or the general public, are strictly regulated in the European Union. In principle, all advertising and promotional activities for the product must be consistent with the approved summary of product characteristics, and therefore all off-label promotion is prohibited. Direct-to-consumer advertising of prescription medicines (including vaccines) is also prohibited in the European Union. Although general requirements for advertising and promotion of medicinal products are established under Directive 2001/83/EC, as amended, the details and the enforcement of these rules are governed by regulations in each member state and can differ from one country to another.

The enforcement actions and consequences for non-compliance with the EU legislation are similar to those listed above for the United States. For centrally approved products in the EU, there is the possibility of fines for regulatory non-compliance with certain of the legal requirements, including in relation to obligations regarding placing the product on the market, safety monitoring and pediatric compliance.

12.3.6 Human Cells and Tissues

Human cells and tissues that are intended for human applications but that do not fall within the scope of rules governing medicinal products or medical devices are not subject to premarket review and approval, nor do they require extensive preclinical and clinical testing. However, there are European Union rules governing the donation, procurement, testing and storage of human cells and tissues intended for human application, whether or not they are ATMPs. These rules also cover the processing, preservation and distribution of human cell and tissues that are not ATMPs. Establishments that conduct such activities must be licensed and are subject to inspection by regulatory authorities. Such establishments must implement appropriate quality systems and maintain appropriate records to ensure that cells and tissues can be traced from the donor to the recipient and vice versa. There are also requirements to report serious adverse events and reactions linked to the quality and safety of cells and tissues. More detailed rules may exist at the national level.

12.3.7 Named Patient Supplies and Compassionate Use Programs

The European Union medicines rules allow individual member states to permit the supply of a medicinal product without a marketing authorization to fulfill special needs, where the product is supplied in response to a bona fide unsolicited order, formulated in accordance with the specifications of a healthcare professional and for use by an individual patient under his direct personal responsibility. This may in certain countries also apply to products manufactured in a country outside the European Union and imported to treat specific patients or small groups of patients.

Some member state laws also provide for compassionate use on a "cohort" basis, subject to review and approval of the cohort program based on the local laws in the member state.

12.3.8 Orphan Drug Designation and Exclusivity

Regulation (EC) No. 141/2000 and Regulation (EC) No. 847/2000 provide that a product can be designated as an orphan drug by the EU Commission if its sponsor can establish: that the product is intended for the diagnosis, prevention or treatment of (i) a life-threatening or chronically debilitating condition affecting not more than five in 10,000 persons in the European Union when the application is made, or (ii) a life-threatening, seriously debilitating or serious and chronic condition in the European Union and that without incentives it is unlikely that the marketing of the product in the European Union would generate sufficient return to justify the necessary investment. For either of these conditions, the sponsor must demonstrate that there exists no satisfactory method of diagnosis, prevention or treatment of the condition in question that has been authorized in the European Union or, if such method exists, the product has to be of significant benefit compared to products available for the condition.

An orphan drug designation provides a number of benefits, including fee reductions, regulatory assistance and the possibility to apply for a centralized European Union marketing authorization. Marketing authorization for an orphan drug leads to a ten-year period of orphan market exclusivity. During this orphan market exclusivity period, neither the EMA nor the EU Commission or the member states can accept an application or grant a marketing authorization for a "similar medicinal product". A "similar medicinal product" is defined as a medicinal product containing a similar active substance or substances as contained in a currently authorized orphan medicinal product, and which is intended for the same therapeutic indication. The market exclusivity period for the authorized therapeutic indication may, however, be reduced to six years if, at the end of the fifth year, it is established that the product no longer meets the criteria for orphan drug designation.

12.3.9 European Data Collection and Data Protection Laws

We are required to comply with strict data protection and privacy legislation in the jurisdictions in which we operate, including the General Data Protection Regulation (EU) 2016/679, or GDPR. The GDPR governs our collection and use of personal data in the European Union relating to individuals (e.g., patients). The GDPR imposes several requirements on organizations that process such data, including: to observe core data processing principles; to comply with various accountability measures; to provide more detailed information to individuals about data processing activities; to establish a legal basis to process personal data (including enhanced consent requirements); to maintain the integrity, security and confidentiality of personal data; and to report personal data breaches. The GDPR also restricts the transfer of personal data outside of the European Economic Area (e.g., to the United States and other countries that are not deemed to provide adequate protection under their domestic laws). The GDPR may impose additional responsibility and liability in relation to personal data that we process, and require us to put in place additional mechanisms ensuring compliance with the new data protection rules. This may be onerous and adversely affect our business, financial condition, results of operations and prospects. Failure to comply with the requirements of the GDPR and related national data protection laws of European Union member states may result in a variety of enforcement measures, including significant fines and other administrative measures. The GDPR has introduced substantial fines for breaches of the data protection rules, increased powers for regulators, enhanced rights for individuals, and new rules on judicial remedies and collective redress. We may be subject to claims by third parties, such as patients or regulatory bodies, that we or our employees or independent contractors inadvertently or otherwise breached GDPR and related data protection rules. Litigation may be necessary to defend against these claims. There is no guarantee of success in defending these claims, and if we do not prevail, we could be required to pay substantial fines and/or damages and could suffer significant reputational harm. Even if we are successful, litigation could result in substantial cost and be a distraction to management and other employees.

12.4 Coverage, Pricing and Reimbursement

Significant uncertainty exists as to the coverage and reimbursement status of any product candidates for which we may obtain regulatory approval. Even if our product candidates are approved for marketing, sales of such product candidates will depend, in part, on the extent to which third-party payors, including government health programs in the United States (such as Medicare and Medicaid), commercial health insurers and managed care organizations, provide coverage and establish adequate reimbursement levels for such product candidates. In the United States, the member states of the European Union and markets in other countries, patients who are prescribed treatments for their conditions and providers performing the prescribed services generally rely on third-party payors to reimburse all or part of the

associated healthcare costs. Reimbursement rules and levels are not harmonized in the European Union and therefore differ from member state to member state. Patients are unlikely to use any product candidates we may develop unless coverage is provided and reimbursement is adequate to cover a significant portion of the cost of such product candidates. The process for determining whether a payor will provide coverage for a product may be separate from the process for setting the price or reimbursement rate that the payor will pay for the product once coverage is approved. Third-party payors are increasingly challenging the price and examining the medical necessity and cost-effectiveness of medical products and services and imposing controls to manage costs.

In order to secure coverage and reimbursement for any product that might be approved for sale, a company may need to conduct expensive pharmacoeconomic studies in order to demonstrate the medical necessity and cost-effectiveness of the product, and the cost of these studies would be in addition to the costs required to obtain FDA or other comparable marketing approvals. Even after pharmacoeconomic studies are conducted, product candidates may not be considered medically necessary or cost effective. A decision by a third-party payor not to cover any product candidates we may develop could reduce physician utilization of such product candidates once approved and have a material adverse effect on our sales, results of operations and financial condition. Additionally, a payor's decision to provide coverage for a product does not imply that an adequate reimbursement rate will be approved. For example, the payor may require co-payments that patients find unacceptably high. Further, one payor's determination to provide coverage for a product does not assure that such coverage will continue or that other payors will also provide coverage and reimbursement for the product, and the level of coverage and reimbursement can differ significantly from payor to payor. Third-party reimbursement and coverage may not be adequate to enable us to maintain price levels sufficient to realize an appropriate return on our investment in product development. The insurance coverage and reimbursement status of newly approved products for orphan diseases is particularly uncertain, and failure to obtain or maintain adequate coverage and reimbursement for any such product candidates could limit a company's ability to generate revenue.

The containment of healthcare costs also has become a priority of U.S. federal and state and other non-U.S. governments as well as other third-party payors such as statutory health insurance funds, and the prices of pharmaceuticals have been a focus in this effort. Governments have shown significant interest in implementing cost-containment programs, including price controls, restrictions on reimbursement and requirements for substitution of generic products. Adoption of price controls and cost-containment measures, and adoption of more restrictive policies in jurisdictions with existing controls and measures, could further limit a company's revenue from the sale of any approved products. Coverage policies and third-party reimbursement rates may change at any time. Even if favorable coverage and reimbursement status is attained for one or more products for which a company or its collaborators receive marketing approval, less favorable coverage policies and reimbursement rates may be implemented or coverage may be ended in the future.

Outside the United States, we will face challenges in ensuring and obtaining adequate coverage and payment for any product candidates we may develop. Pricing of prescription pharmaceuticals is subject to governmental control in many countries, including in particular the member states of the European Union. Pricing negotiations with governmental authorities or other third-party payors such as statutory health insurance funds can extend well beyond the receipt of regulatory marketing approval for a product and may require us to conduct a clinical trial or non-interventional study that compares the cost effectiveness of any product candidates we may develop to other available therapies. The conduct of such a clinical trial or study could be expensive and result in delays in our commercialization efforts.

In the European Union, pricing and reimbursement schemes vary widely from country to country. Some countries provide that products may be marketed only after a reimbursement price has been agreed. Some countries may require the completion of additional studies that compare the cost effectiveness of a particular product candidate to currently available therapies (so called health technology assessments) in order to obtain reimbursement or pricing approval. The European Union recently adopted Regulation (EU) 2021/2282 on health technology assessment, which provides a framework for member states to cooperate on health technology assessments at the EU level. The Regulation is directly applicable in all EU member states which is in a phased period of applicability since January 12, 2025, although pricing will still be determined nationally. Moreover, at the national level, European Union member states may restrict the range of products for which their national health insurance systems provide reimbursement and to control the prices of medicinal products for human use. Member states may approve a specific

price for a product or may instead adopt a system of direct or indirect controls on the profitability of the company placing the product on the market. Other member states allow companies to fix their own prices for products, but monitor and control prescription volumes and issue guidance to physicians to limit prescriptions. Recently, many countries in the European Union have increased the amount of discounts required on pharmaceuticals and these efforts could continue as countries attempt to manage healthcare expenditures, especially in light of the severe fiscal and debt crises experienced by many countries in the European Union. The downward pressure on health care costs in general, particularly prescription products, has become intense. As a result, increasingly high barriers are being erected to the entry of new products in the marketplace. Political, economic and regulatory developments may further complicate pricing negotiations, and pricing negotiations may continue after reimbursement has been obtained. Reference pricing used by various European Union member states and parallel trade (arbitrage between low-priced and high-priced member states) can further reduce prices. Special pricing and reimbursement rules may apply to orphan drugs. Inclusion of orphan drugs in reimbursement systems tend to focus on the medical usefulness, need, quality and economic benefits to patients and the healthcare system as for any product. Acceptance of any medicinal product for reimbursement may come with cost, use and often volume restrictions, which again can vary by country. In addition, results-based rules of reimbursement may apply. There can be no assurance that any country that has price controls or reimbursement limitations for pharmaceutical products will allow favorable reimbursement and pricing arrangements for any of our products, if approved in those countries.

For COVID-19 vaccine candidates in the European Union, no pricing and reimbursement or health technology assessments discussions have taken place with the respective health insurances and competent bodies at a national member state level. Currently, COVID-19 vaccine candidates are supplied in the European Union based on vaccine supply agreements with the EU Commission that is acting on behalf and in the name of the member states of the European Union.

12.5 United Kingdom

On June 23, 2016, in a national referendum, a majority of the electorate voted in favor of the United Kingdom leaving the European Union (commonly referred to as “Brexit”). On March 29, 2017, the United Kingdom Government formally notified the European Union of its intention to withdraw from the Union pursuant to Article 50 of the Treaty on the European Union. The United Kingdom formally left the European Union on January 31, 2020, with all applicable EU law, including the regulation of medicinal products, applying to and in the United Kingdom for a transitional period, which has now expired. The United Kingdom and the European Union have reached agreement on the terms of their future relationship in the Trade and Cooperation Agreement, or the “**TCA**”, which formally entered into force on May 1, 2021. While the TCA governs tariff and quota free trade between the United Kingdom and the European Union markets, it does not provide for regulatory alignment. The regulatory framework for medicinal products in the U.K. is predominantly derived from EU law. The U.K. currently offers different routes to obtain a marketing authorization: (a) a national application route with a 150-day assessment timeline, excluding clock stops or (b) an international recognition route by which a company relies on a positive CHMP opinion or an approval granted by another reference regulator, including the FDA and the Japanese PDMA. The international recognition procedure takes 60 days with no clock stops for simpler applications that were approved by the reference regulator within the past two years and 110 days with the possibility of a clock stop for all other eligible applications.

Domestic United Kingdom law provided that all existing European Union law in force on December 31, 2020 was retained in U.K. national law, subject to certain revisions that became necessary as a result of Brexit.

However, the Retained EU Law (Revocation and Reform) Act 2023 came into force on January 1, 2024. This revoked some retained EU laws (although not any relating to medicines regulation). All other retained EU laws have been renamed as “assimilated laws” and are no longer subject to the EU principles of interpretation. Thus, while at least initially the United Kingdom and the European Union laws relating to medicines are largely aligned, there is the potential for further divergence in the future.

Under the terms of the Northern Ireland Protocol to the Withdrawal Agreement, European Union law governing medicinal products continued to apply to and in Northern Ireland resulting in the potential for separate marketing authorizations in Great Britain and Northern Ireland. In March 2023, the Northern Ireland Protocol was adjusted by the Windsor Framework, which is another post-Brexit agreement

between the EU and the U.K. The Windsor Framework aims to make it easier to move certain goods, including medicines, from Great Britain to Northern Ireland. Beginning January 1, 2025, medicines for supply in the U.K. are now authorized U.K.-wide by the Medicines and Healthcare products Regulatory Agency (MHRA) only and companies can no longer apply for, or maintain, separate licenses for Great Britain and Northern Ireland to market new medicines. Other key changes introduced by the Windsor Framework include removing the requirements of the EU Falsified Medicines Directive (FMD) from products intended for Northern Ireland and a requirement that all medicines placed on the U.K. market be labeled "U.K. Only".

12.6 Greater China

12.6.1 Mainland China

Similar to the United States and the European Union, Mainland China has rules governing the approval for development and commercialization of drugs, including specialized rules for vaccines. China's drug law and regulations require that the National Medical Products Administration's, or "**NMPA's**", Center for Drug Evaluation approve a clinical trial application prior to initiating a study to support the safety and effectiveness of a drug, including a therapeutic or preventive biologic (i.e., a vaccine). This clinical trial application generally takes approximately 60 business days but may be expedited in the case of innovative drugs studied at certain approved sites in China.

Once approved, vaccine clinical trials must be conducted at sites that are qualified disease prevention and control, or "**CDC**", institutions and grade III hospitals, and the implementation of the trial must be in accordance with China's general drug and specialized vaccine good clinical practice regulations and related guidelines. Other drug trials must be conducted at designated hospital sites in accordance with China's general drug good clinical practice rules. Furthermore, prior to the commencement of the clinical trial in China each site's ethics committee must approve the trial, and the National Health Commission must approve the use of human samples containing genetic material and related genetic data. The human genetic resources, or "**HGR**", approval requires a joint approval or record-filing application by the Chinese and foreign parties, setting forth the parties that will handle data and samples, the type and amount of samples that will be utilized during the study, the tests/analysis run, and the plans for storage or destruction, and potentially the intellectual property sharing arrangement among the parties, among other items. If the research is exploratory (i.e., not tied to a program designed to obtain registration in China), patentable IP arising from the use of the HGR samples and data must be jointly owned by the Chinese and foreign parties. Once approved, the HGR approval/filing may require updates and amendments and additional procedures to transfer data to foreign parties that are not on the approval. A final report is due at the end of the study.

Once a clinical trial in China is complete and/or foreign data is assembled, a company may submit an application for a marketing authorization, or MA, of the drug. This procedure will include submission of clinical data, manufacturing information and test results, among other items, and may include an onsite pre-market verification by the NMPA. This application may be considered more quickly if the applicant qualifies for admission to various expedited programs, including breakthrough designation for drugs that are new to the world in some respect, treat life threatening or quality of life altering diseases and either have no comparator on the market or represent a significant clinical advantage over existing approved therapies. Conditional approval procedures permit approval of a drug based on earlier stage data, but subject continued marketing to the fulfillment of post-market conditions with a designation period of time, such as the completion of additional studies. Therapeutic biologics and small molecule drugs follow similar steps to approval for development and marketing. These steps are similar for drugs that are imported and those that are produced domestically in China. However, domestically produced drugs must be produced at a facility that also obtains a drug manufacturing license based, in part, on a pre-marketing good manufacturing practice inspection.

At both the clinical trial and MA stages, applicants for imported drugs must list a regulatory agent on the application. The agent must be an entity in China. The imported drug MA holder must also make a filing to a provincial level government appointing a responsible person, which is an entity that assists the marketing authorization holder, or "**MAH**", with fulfilling its post-market drug regulatory obligations in China. The responsible person of the MAH is jointly liable with the MAH for these drug regulatory obligations.

Once approved, vaccines may be procured by the CDC through platforms organized by the provincial governments. Vaccines in China must be sold and directly distributed by domestic manufacturers or general distributors appointed to represent overseas makers to municipal level CDCs, which handle allocation and distribution to points of vaccination in China. Distribution of other drugs occurs through procurement processes for sales at public hospitals and sales to private hospitals or pharmacies. Distributors of all drugs must possess a MA for the drug they are distributing or a drug distribution license.

As is the case with all drugs, once on the market, MAHs will also have post-market obligations, including fulfillment of post-marketing commitments. In the case of vaccines, MAHs must pay compensation for injuries caused adverse events following inoculation, or "**AEFIs**", if the vaccine is not one required as part of the National Inoculation Program, or "**NIP**". The government bears the cost of NIP vaccines and related AEFIs. All drug MAHs are subject to other post-market obligations for drug marketing authorization holders, including recalls, annual reporting, and inspections. All drug MAs must be renewed every five years, and supplemental applications, notifications, or reports may need to be submitted for major, moderate and minor changes, respectively, to the original registration (e.g., significant manufacturing changes).

Advertisements of prescription drugs, including vaccines, must be pre-approved and may only be placed in approved medical journals. Other forms of "academic promotion" may be performed by medical representatives who are authorized in writing by MAHs (or their agents) and their information filed on government designated websites. Currently, medical representatives are permitted to provide information about the drug to health care professionals (in accordance with certain procedural rules) and collect feedback as to drug safety, although a proposed revision to this rule may further restrict the activities of the medical representatives.

12.6.2 Hong Kong SAR and Macau SAR

Mainland China's drug regulatory system does not apply in Hong Kong SAR or Macau SAR. These administrative regions are governed by separate laws on the development, approval, manufacturing, distribution and advertising and promotion of drugs, including vaccines. Similar rules restricting advertising and promotional content and, in the case of Macau SAR, government approved advertisements, also apply.

12.7 Türkiye

Other countries such as Türkiye and those in the Middle East have regulatory review processes and data requirements for medicinal products, including vaccines, similar to those described for the European Union. The regulatory licensing process in these countries may include local marketing authorization requirements, manufacturing/testing facility inspections, testing of drug product upon importation and other domestic requirements. Some countries, such as Türkiye, have introduced specific emergency authorization regimes for COVID-19 vaccines.

12.8 Rest of the World Regulation

The requirements governing the conduct of clinical trials, product (including vaccine) licensing, pricing, and reimbursement vary from country to country in markets outside the European Union and the United States. In many markets, clinical trials must be conducted in accordance with Good Clinical Practice and applicable regulatory requirements. Ethical standards typically follow the Declaration of Helsinki principles. In response to the COVID-19 pandemic, some markets have granted or are considering the grant of emergency use authorizations for vaccine candidates instead of the otherwise available regulatory approval pathways. Supply of the COVID-19 vaccine to a number of countries outside of the United States and the European Union is similarly governed by vaccine supply agreements with local governments.

In Africa, there is limited harmonization of the regulation of drug and biological products across the continent, and the functionality and regulatory capacity of national medicines regulatory authorities varies between jurisdictions. For example, many regulators lack the technical expertise to independently assess marketing authorization applications and instead have adopted "reliance" procedures, whereby authorization by a foreign stringent regulatory authority or registration as a WHO pre-qualified product

may be a condition for approval. The African Union, or "**AU**", has issued several harmonization initiatives for medicines, including adopting the AU Model Law on Medical Products Regulation in 2016 and establishing the African Medicines Agency, or "**AMA**", in 2019. The AMA's responsibilities will include evaluating medicines for the treatment of priority diseases, among other harmonization-related responsibilities, but has yet to issue any regulatory guidelines or procedures to date.

Failure to adhere to regulatory requirements may lead to, among others, fines, suspension or withdrawal of regulatory authorizations or approvals, product recalls, seizure of products, restrictions or suspensions of operations, or criminal prosecution.

12.9 Healthcare Law and Regulation

Healthcare providers and third-party payors play a primary role in the recommendation and prescription of pharmaceutical products that are granted marketing approval. Our current and future arrangements with providers, researchers, consultants, third-party payors and customers are subject to broadly applicable federal and state fraud and abuse, anti-kickback, false claims, transparency and patient privacy laws and regulations and other healthcare laws and regulations that may constrain our business and/or financial arrangements. Restrictions under applicable federal and state healthcare laws and regulations in the United States and elsewhere include, without limitation, the following:

- the U.S. federal Anti-Kickback Statute, which prohibits, among other things, persons and entities from knowingly and willfully soliciting, receiving, offering or paying remuneration, directly or indirectly, in-cash or in kind, to induce or reward either the referral of an individual for, or the purchase, order or recommendation of, any good or service, for which payment may be made, in whole or in part, under a federal healthcare program such as Medicare and Medicaid. A person or entity does not need to have actual knowledge of the statute or a specific intent to violate it in order to have committed a violation. Moreover, the government may assert that a claim that includes items or services resulting from a violation of the federal Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the civil False Claims Act;
- the U.S. federal civil and criminal false claims laws, including the civil False Claims Act, and civil monetary penalties laws, which prohibit individuals or entities from, among other things, knowingly presenting, or causing to be presented, to the federal government, claims for payment that are false, fictitious, or fraudulent or knowingly making, using, or causing to be made or used a false record or statement to avoid, decrease, or conceal an obligation to pay money to the federal government;
- HIPAA, which created additional U.S. federal criminal laws that prohibit, among other things, knowingly and willfully executing, or attempting to execute, a scheme to defraud any healthcare benefit program or making false statements relating to healthcare matters. Similar to the federal Anti-Kickback Statute, a person or entity does not need to have actual knowledge of the statute or a specific intent to violate it in order to have committed a violation;
- HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act, and their respective implementing regulations, including the Final Omnibus Rule published in January 2013, which impose obligations, including mandatory contractual terms, with respect to safeguarding the privacy, security and transmission of individually identifiable health information without the appropriate authorization by entities subject to the law, such as healthcare providers, health plans and healthcare clearinghouses and their respective business associates;
- the U.S. federal transparency requirements, known as the federal Physician Payments Sunshine Act, under the ACA, which requires certain manufacturers of drugs, devices, biologics and medical supplies to report annually to the CMS, within the U.S. Department of Health and Human Services, information related to payments and other transfers of value made by that entity to physicians and teaching hospitals, as well as ownership and investment interests held by physicians and their immediate family members;
- U.S. federal consumer protection and unfair competition laws, which broadly regulate marketplace activities and activities that potentially harm consumers;

- U.S. federal government price reporting laws, which require us to calculate and report complex pricing metrics to government programs and which may be used in the calculation of reimbursement and/or discounts on marketed products;
- the Foreign Corrupt Practices Act, a U.S. law which regulates certain financial relationships with foreign government officials (which could include, for example, certain medical professionals);
- analogous laws and regulations in U.S. states and other jurisdictions, such as U.S. state anti-kickback and false claims laws, which may apply to healthcare items or services that are reimbursed by non-governmental third-party payors, including private insurers; and
- U.K., EU and Member State anti-bribery laws, laws governing interactions with healthcare professionals and transparency laws requiring the public disclosure of payments to healthcare professionals and healthcare organizations.

Some U.S. state laws require pharmaceutical companies to comply with the pharmaceutical industry's voluntary compliance guidelines and the relevant compliance guidance promulgated by the federal government in addition to requiring pharmaceutical manufacturers to report information related to payments to physicians and other health care providers or marketing expenditures and pricing information. Laws in U.S. states and other jurisdictions also govern the privacy and security of health information in some circumstances, many of which differ from each other in significant ways and often are not preempted by HIPAA, thus complicating compliance efforts.

The scope and enforcement of each of these laws is uncertain and subject to rapid change in the current environment of healthcare reform, especially in light of the lack of applicable precedent and regulations. U.S. federal and state enforcement bodies have recently increased their scrutiny of interactions between healthcare companies and healthcare providers, which has led to a number of investigations, prosecutions, convictions and settlements in the healthcare industry. European regulators are also increasing their scrutiny of interactions between healthcare companies and healthcare providers as national transparency laws are adopted in more EU member states, including most recently Italy.

Violations of these laws can subject us to criminal, civil and administrative sanctions including monetary penalties, damages, fines, disgorgement, individual imprisonment and exclusion from participation in government funded healthcare programs, such as Medicare and Medicaid in the U.S., additional reporting requirements and oversight if we become subject to a corporate integrity agreement or similar agreement to resolve allegations of non-compliance with these laws, reputational harm, and we may be required to curtail or restructure our operations. If any of the physicians or other healthcare providers or entities with whom we expect to do business is found to be not in compliance with applicable laws, they may be subject to similar actions, penalties, and sanctions. Ensuring business arrangements comply with applicable healthcare laws, as well as responding to possible investigations by government authorities, can be time- and resource-consuming and can divert a company's attention from the business. Moreover, we expect that there will continue to be federal, state and foreign laws and regulations, proposed and implemented, that could impact our future operations and business.

12.10 Current and Future Healthcare Reform Legislation

In the United States and other jurisdictions, there have been a number of legislative and regulatory changes and proposed changes regarding the healthcare system that could prevent or delay marketing approval of our product candidates, restrict or regulate post-approval activities, and affect our ability to profitably sell any product candidates for which we obtain marketing approval. We expect that current laws, as well as other healthcare reform measures that may be adopted in the future, may result in more rigorous coverage criteria and in additional downward pressure on the price that we, or any collaborators, may receive for any approved products. The United States presidential administration may seek to pursue different or additional approaches to drug pricing and reimbursement or could seek additional legislation affecting drug pricing, either of which could affect future profitability. For example, the new administration issued two executive orders that may affect pharmaceutical pricing, including by seeking to achieve "most-favored-nation" pricing under which US prices would not exceed those in "comparably developed" nations, and seeking to facilitate commercial importation of drugs into the US from Canada by persons other than the manufacturer.

Additionally, other federal health reform measures have been proposed and adopted in the United States since the ACA was enacted:

- The American Taxpayer Relief Act of 2012, among other things, reduced Medicare payments to several providers, and increased the statute of limitations period for the government to recover overpayments to providers from three to five years.
- The Middle Class Tax Relief and Job Creation Act of 2012 required that CMS reduce the Medicare clinical laboratory fee schedule by 2% in 2013, which served as a base for 2014 and subsequent years. In addition, effective January 1, 2014, CMS also began bundling the Medicare payments for certain laboratory tests ordered while a patient received services in a hospital outpatient setting.

Further, there has been heightened governmental scrutiny in the United States and elsewhere over the manner in which manufacturers set prices for their marketed products, which have resulted in several recent Congressional inquiries and proposed bills designed to, among other things, bring more transparency to product pricing, review the relationship between pricing and manufacturer patient programs, and reform government program reimbursement methodologies for products. In addition, the U.S. federal government, state legislatures, and other governments have shown significant interest in implementing cost containment programs, including price-controls, restrictions on reimbursement, and requirements for substitution of generic products for branded prescription drugs to limit the growth of government-paid health care costs. For example, the U.S. federal government has passed legislation requiring pharmaceutical manufacturers to provide rebates and discounts to certain entities and governmental payors to participate in federal healthcare programs. Individual states in the United States have also become increasingly aggressive in passing legislation and implementing regulations designed to control pharmaceutical and biological product pricing, including price or patient reimbursement constraints, discounts, restrictions on certain product access and marketing cost disclosure and transparency measures, and, in some cases, designed to encourage importation, from other countries and bulk purchasing. States may also seek federal approval of importation plans permitting the commercial importation of drugs from Canada following the federal approval of such a plan in the State of Florida.

In the EU, the EU Commission in April 2023 published a proposal for a revision of the EU pharmaceutical legislation. The proposed legislation includes, among other things, significant changes to the periods of regulatory data exclusivity for new products and orphan exclusivity, and imposes enhanced supply obligations on companies. Trialogue negotiations between the EU Commission, Parliament and Council commenced in June 2025 and the legislation is unlikely to make it through to adoption before 2026 at the earliest. Transitional and implementation periods are then likely to be lengthy, and the phasing in of the new rules risks creating additional uncertainty.

12.11 Packaging and Distribution in the United States and Other Jurisdictions

If our products are made available to authorized users of the Federal Supply Schedule of the General Services Administration, additional laws and requirements apply in the United States (and similar laws may apply in other jurisdictions). Products must meet applicable child-resistant packaging requirements under the U.S. Poison Prevention Packaging Act. Manufacturing, sales, promotion and other activities also are potentially subject to federal and state consumer protection and unfair competition laws.

The distribution of pharmaceutical products is subject to additional requirements and regulations, including extensive record-keeping, licensing, storage and security requirements intended to prevent the unauthorized sale of pharmaceutical products.

The failure to comply with any of these laws or regulatory requirements subjects firms to possible legal or regulatory action. Depending on the circumstances, failure to meet applicable regulatory requirements can result in criminal prosecution, fines or other penalties, injunctions, exclusion from federal healthcare programs, requests for recall, seizure of products, total or partial suspension of production, denial or withdrawal of product approvals, or refusal to allow a firm to enter into supply contracts, including government contracts. Any action against us for violation of these laws, even if we successfully defend against it, could cause us to incur significant legal expenses and divert our management’s attention from the operation of our business. Prohibitions or restrictions on sales or withdrawal of future products marketed by us could materially affect our business in an adverse way.

Changes in regulations, statutes, or the interpretation of existing regulations could impact our business in the future by requiring, for example, (i) changes to our manufacturing arrangements, (ii) additions or modifications to product labeling, (iii) the recall or discontinuation of our products or (iv) additional record-keeping requirements. If any such changes were to be imposed, they could adversely affect the operation of our business.

12.12 Other Environmental, Health and Safety Laws and Regulations

In the United States, the European Union and other jurisdictions, we may be subject to numerous environmental, health and safety laws and regulations, including those governing laboratory procedures and the handling, use, storage, treatment and disposal of hazardous materials and wastes. From time to time and in the future, our operations may involve the use of hazardous and flammable materials, including chemicals and biological materials, and may also produce hazardous waste products. Even if we contract with third parties for the disposal of these materials and waste products, we cannot completely eliminate the risk of contamination or injury resulting from these materials. In the event of contamination or injury resulting from the use or disposal of our hazardous materials, we could be held liable for any resulting damages, and any liability could exceed our resources. We also could incur significant costs associated with civil or criminal fines and penalties for failure to comply with such laws and regulations.

We maintain workers' compensation employers' liability insurance to cover us for costs and expenses we may incur due to injuries to our employees, but this insurance may not provide adequate coverage against potential liabilities.

In addition, we may incur substantial costs in order to comply with current or future environmental, health and safety laws and regulations. Current or future environmental laws and regulations may impair our research, development or production efforts. In addition, failure to comply with these laws and regulations may result in substantial fines, penalties or other sanctions.

12.13 Regulation of Artificial Intelligence Systems and Models

Government authorities in the United States at the federal, state and local levels have been actively engaged in advancing policy frameworks, guidance documents, discussion papers, standards, and proposed legislation regarding the development and use of AI by life sciences companies and, where applicable, applying existing regulatory frameworks (e.g., FDA regulations) to particular uses of AI. Likewise, the EU and other countries and jurisdictions extensively regulate (or intend to extensively regulate) the development and use of AI systems and models. The processes for monitoring emerging regulatory frameworks, evaluating how current and emerging requirements for AI apply to our business, along with subsequent compliance with applicable requirements and best practices, require the expenditure of substantial time and financial resources.

A biotech company could use AI in a number of different contexts. For example, it may use AI in the medicines lifecycle for drug discovery, for non-clinical research and development, for data analysis in clinical trials and analysis of real world data, for precision medicine (e.g., clinical decision support), for supporting clinical trial design or assessing patient eligibility for clinical trials, for drafting medicinal product information documents, in the manufacturing of medicinal products and in machinery, or to assist with post-authorization safety monitoring, among other potential uses. If the AI is intended to perform a regulated activity (such as related to drug manufacturing, release testing, or producing clinical/diagnostic outputs) or otherwise be used in operations that are the subject of scrutiny by health authorities, the use of AI could trigger health authority oversight and, in some cases, application of existing laws and regulations relevant to healthcare, pharmaceuticals, and/or medical devices or sector-agnostic AI laws and regulations.

Outside the drug development and commercialization context, a biotech company may use AI for other operational reasons. For example, a company may have plans to use automated personnel recruitment tools, deploy facial recognition technology to ensure security of its services, use customer service chatbots, or allow its employees to use generative AI or general-purpose AI tools to increase the efficiencies of administrative tasks.

A company will need to identify how it uses AI in its business operations, and identify the relevant applicable regulatory regime that applies to ensure compliance. Failure to adhere to (or remain up to date with evolving) regulatory requirements may lead to compliance actions, penalties and other risks.

12.13.1 United States

In the United States, Congress, the White House, various federal agencies, and states have advanced proposed AI legislation, policy frameworks, guidance documents, whitepapers, and governing principles to address the use of AI, including when used in healthcare and life sciences. Of particular relevance to biotech companies, the FDA has been adapting and applying existing regulatory frameworks to account for AI and has issued guidance, discussion papers, and frameworks outlining FDA's approach to regulation and oversight of health-related uses of AI. To date, FDA has not issued a new regulatory framework specific to AI; rather, it has been applying its existing regulations for drug and biologic discovery, development, clinical testing and manufacturing to companies utilizing AI in these processes, such that companies seeking to incorporate AI into processes that are subject to FDA oversight need to demonstrate compliance with the existing regulations for drug and biologic sponsors. In this context, FDA issued two discussion papers on the use of AI in drug manufacturing (March 2023) and the development of drug and biological products (May 2023), and hosted a related public workshop in August 2024. Following feedback on the discussion papers and the workshop, in January 2025, FDA issued its first draft guidance document regarding uses of AI in drug development and other parts of the drug lifecycle, entitled "Considerations for the Use of Artificial Intelligence to Support Regulatory Decision-Making for Drug and Biological Products". AI to support regulatory decision-making, within the scope of the draft guidance, includes AI intended to support regulatory determinations made by FDA (e.g., with respect to safety or effectiveness of a drug in a New Drug Application) and to support actions taken by sponsors in conformance with FDA's regulatory authority (e.g., current good manufacturing practices, post-marketing requirements, and INDs). The draft guidance proposes a seven-step risk-based framework for assessing the risk and credibility of AI models intended to support regulatory decision-making to determine whether the AI model is adequate for a specific use, and describes the associated documentation FDA may expect to review in an application or during an inspection.

FDA also actively regulates some health-related AI as "software as a medical device", or "**SaMD**", under FDA's existing medical device frameworks and has issued guidance describing specific regulatory considerations that may apply to AI-based SaMD. Most recently, FDA issued draft guidance in January 2025 on lifecycle management and marketing submission recommendations for AI-enabled device software functions, and hosted its inaugural Digital Health Advisory Committee meeting in November 2024 to discuss total product lifecycle considerations for generative AI-enabled devices.

Additionally, at the executive level, the Trump Administration revoked a Biden Administration Executive Order on the Safe, Secure, and Trustworthy Development of Artificial Intelligence that Order contained a number of directives that would have impacted the life sciences sector, including directives to HHS to establish an AI "Task Force" responsible for issuing guidance on a number of AI topics (such as long-term safety and real-world performance monitoring, predictive and generative AI, equity principles, and privacy and security standards), develop a strategy for regulating the use of AI in drug development processes, develop an "AI assurance policy" to evaluate the performance of AI-enabled healthcare tools, and establish a common framework for capturing clinical errors resulting from AI deployed in healthcare settings. The Trump Administration issued a new Executive Order in January 2025 on Removing Barriers to American Leadership in Artificial Intelligence that established a policy of "global AI dominance" and directed entities to suspend, revise, or rescind any actions taken under the Biden Administration Executive Order that are inconsistent with this policy.

Members of Congress also have introduced a number of bills on AI regulation and frameworks for regulating AI. For example, the Bipartisan House AI Task Force released an AI report in December 2024 and the Bipartisan Senate AI Working Group released a roadmap for AI policy in May 2024, both of which included sections on policy recommendations for AI in health care. Senator Bill Cassidy (R-LA), who now chairs the Senate Health, Education, Labor, and Pensions Committee, also released a whitepaper on the "Framework for the Future of AI" in September 2023 that disfavored a "one-size-fits-all" approach to AI regulation and instead called for a flexible approach that takes into account the context of use and leverages existing frameworks.

U.S. state legislatures also have actively pursued AI legislation. For example, the Colorado AI Act imposes requirements for developers and deployers of certain high-risk AI systems, and other laws will require notice or disclosures for certain uses of generative AI or other AI systems. In addition to proposed and passed legislation, regulators have sought to apply existing legal authorities to AI systems, including in the life sciences sector. For example, the California Attorney General issued a legal advisory providing guidance to healthcare providers, vendors, investors, and other healthcare entities that develop, sell, and use AI systems and similar technologies. The advisory advised entities on their obligations under existing California law and described certain health-related uses of AI or marketing practices that might be unlawful.

We continue to monitor developments in the regulation of AI in drug and biologic development and commercialization, or for more general business practices, and to assess the applicability of these evolving frameworks and policies as well as existing legal frameworks that apply to our uses of AI. If we fail to meet regulator expectations or comply with applicable requirements, that could impact our ability to utilize AI-related processes or information in our development of product candidates or could subject us to delays, penalties or other risks.

12.13.2 European Union

The EU Artificial Intelligence Act, or the "**EU AI Act**", entered into force on August 1, 2024. It establishes rules governing certain AI systems and general-purpose AI models that apply across the EU. It applies to various actors along the AI value chain, including "providers" and "deployers" of AI systems classified as "high-risk", "providers" of general-purpose AI models, and "providers" of general-purpose AI models with "systemic risk". It also prohibits certain AI practices and imposes transparency requirements in relation to certain AI systems and general-purpose AI models.

The EU AI Act sets out a transition period of two years (by August 2026) for most provisions, with the following exceptions: (i) the provisions relating to prohibited AI practices and AI literacy apply after six months (by February 2025); (ii) the provisions relating to general-purpose AI models and the AI Act's governance framework apply after one year (by August 2025); and (iii) the provisions relating to high-risk AI systems that are used as safety components of products or are themselves products regulated by certain EU harmonization legislation (e.g., machinery, medical devices) requiring third-party conformity assessments apply after three years (by August 2027).

The EU AI Act applies to providers, located in or outside the EU, that place on the market or put into service AI systems in the EU, or that place on the market general-purpose AI models in the EU. It also applies to deployers of AI systems located or established in the EU, and to providers or deployers located or established outside the EU where the output of the system is used in the EU. Whether a biotech company incurs obligations under the EU AI Act depends on whether it develops, offers, or uses any AI systems or general-purpose AI models; whether it qualifies as a "provider", "deployer", or other regulated actor; and the jurisdiction where the system is put into service, where the system or model is placed on the market, or where the output of a system is used.

Providers and deployers of "high-risk AI systems" will need to comply with numerous obligations that apply to such systems. The obligations for providers and deployers differ, with the majority of obligations falling to providers. The EU AI Act also contemplates circumstances where a deployer or other third-party must assume the obligations of the provider, e.g., where the third-party makes a substantial modification to a high-risk AI system that has already been placed on the market or put into service, but where the modified system remains high risk. The EU AI Act sets out an exhaustive list of "high-risk AI systems" in Annexes I and III. The categories of such systems that might be relevant to offerings of biotech companies include products that require a notified body conformity assessment under the EU Medical Devices Regulation 2017/745 or EU In Vitro Diagnostic Medical Devices Regulation 2017/746.

The EU AI Act imposes a separate set of obligations on providers of "general-purpose AI models" and an additional set of obligations on providers of "general-purpose AI models with systemic risk". The EU Commission will designate general-purpose AI models that have "high-impact capabilities" as models with "systemic risk". Providers of general-purpose AI models—with or without "systemic risk"— must comply with certain obligations, including to draw up technical documentation about the general-purpose AI model, implement a copyright policy to comply with EU copyright laws, and make available a summary of the content used to train the model. Additional obligations apply to providers of general-purpose AI models with systemic risk, including, for example, to perform model evaluation (such as adversarial testing) and to report serious incidents to the EU Commission's AI Office. Whether these obligations apply to a biotech company will depend on whether it develops any general-purpose AI models (or have them developed on its behalf) and places them on the market in the EU. If so, it will need to comply with the obligations that apply to all general-purpose AI models and assess whether any of these models could qualify as general-purpose AI models with systemic risk, which would require it to comply with additional obligations.

Of particular relevance to the biotech industry, the EMA has published a reflection paper on the use of AI (September 2024), which is aimed at biopharmaceutical companies intending to use AI in the lifecycle of their medicines, including for drug discovery, design, and development. It also covers the use of medical devices with AI/ML technology that are used to generate data or other evidence to support an EU marketing authorization for a medicine (i.e., used within the context of clinical trials or combined with the use of a medicine). The EMA's view of "high patient risk" or "high regulatory impact" that AI can have differs from the classifications used in the EU AI Act. This requires biotech companies to assess whether the use of AI could affect patient safety ("high patient risk") or impact regulatory decision-making ("high regulatory impact") for the purpose of the EU medicines rules. This means that potentially, non-high-risk AI under the EU AI Act could still be relevant to the EMA if it impacts patient safety or evidence generation for a medicine subject to regulatory approval. The EMA guidance puts the onus on marketing authorization applicants/marketing authorization holders to ensure AI used during the medicines lifecycle is compliant with the medicines rules. If a biotech company intends to use AI in the context of its medicines it will need to carry out a regulatory impact and risk analysis and potentially discuss use cases with the EMA, including when there is no clearly written guidance available.

Failure to adhere to (or remain up to date with evolving) EU regulatory requirements may lead to delays, compliance risks, and penalties.

12.13.3 Rest of World

Outside the United States and EU, the requirements governing the use and deployment of AI may vary from country to country, though health regulators have taken some steps toward international harmonization on AI best practices. For example, FDA, U.K. MHRA, and Health Canada have issued joint guiding principles on topics such as good machine learning practices and transparency for ML-enabled devices. A company will need to identify how it uses AI in its business operations, and identify the relevant applicable regulatory regime that applies to ensure compliance. Failure to adhere to (or remain up to date with evolving) regulatory requirements may lead to delays, compliance risks, and penalties.

12.14 German Foreign Investment Screening Regime

Due to the type of our business, the German foreign investment screening regime applies to the Group. Specifically, the German Foreign Trade and Payments Ordinance (*Außenwirtschaftsverordnung*) requires the notification of acquisitions involving German companies that operate "critical infrastructure" within the meaning of the Ordinance on the Designation of Critical Infrastructure pursuant to the BSI Act (*Verordnung zur Bestimmung Kritischer Infrastrukturen nach dem BSI-Gesetz*).

As a result, non-EU/non-EFTA investors intending to directly or indirectly acquire 10% or more of the voting rights in the Company or already hold voting rights in the Company and will acquire further voting rights reaching or exceeding 20%, 25%, 40%, 50% or 75% of the voting rights in the Company must notify the BMWE about the planned acquisition. As this requirement also applies to indirect acquisitions, all non-EU/non-EFTA investors upstream of a direct acquirer or holder of voting rights in the Company are relevant for the purpose of the foreign investment screening procedure, provided that such investor holds at least 10% of the voting rights in the respective investment vehicle. Additionally, all other investment vehicles downstream of the respective investment vehicle, in which the non-EU/non-EFTA investor holds or acquires at least 10% of the voting rights, must also hold or acquire at least 10% of the voting rights in the next downstream investment vehicle, down to the direct acquirer or holder of voting rights in the Company. The direct acquirer or holder of voting rights in the Company must hold at least 10% of the Company's voting rights. For such voting right threshold, the voting rights of third parties with whom the non-EU/non-EFTA investor has concluded an agreement on the joint exercise of voting rights are attributable to that investor.

The notification to the BMWE must describe the acquisition, the acquirer, and the domestic target company, and outline the fields of business in which the acquirer and the domestic target company are active. Subsequently, the BMWE assesses whether the acquisition likely adversely affects the public order or security of Germany, other member states of the EU or project or programmes of Union interest within the meaning of Article 8 of Regulation (EU) 2019/452 of the European Parliament and of the Council of 19 March 2019 establishing a framework for the screening of foreign direct investments into the Union. The extent of the assessment depends not only on the Company's activities, but also on the

identity and institutional and organizational setup of the acquirer. If the BMWE determines that there are likely adverse effects, the acquisition might be subject to restrictions or prohibited. Clearance by the BMWE qualifies as a closing condition for all over-the-counter transactions. Therefore, the direct or indirect acquisition of at least 10% of the voting rights in the Company by a non-EU/non-EFTA investor can only be completed after the BMWE has cleared the acquisition.

If the acquisition has been made via the stock exchange, the acquirer is prohibited from exercising the voting rights he has obtained via the acquisition until the transaction has been cleared or is deemed cleared. If the BMWE does not clear the transaction, it may order a sell-down of the voting rights acquired via the stock exchange or a transfer to a trustee within a certain period of time and/or prohibit the exercise of voting rights until such time as the acquisition is finally reversed.

13 TRANSACTIONS AND LEGAL RELATIONSHIPS WITH RELATED PARTIES

13.1 Overview

In accordance with IAS (International Accounting Standard) 24 “Related Party Disclosures”, related parties include those entities with whom the Company forms an affiliated group or in which it holds an interest that enables it to either exercise a significant influence over the business policy of the associate or joint control over the business policy of the joint venture, as well as the principal shareholders in the Company, including their affiliates. In addition, related parties also include the members of the Management Board and the Supervisory Board and close members of their families, as well as those entities over which the members of the Management Board or their close family members are able to exercise a significant influence or in which they hold a significant share of voting rights.

Set forth below are transactions with related parties for the years 2024, 2023 and 2022 as well as for the current financial year 2025 until the date of the Prospectus.

13.2 Transactions with Related Parties

ATHOS KG, Holzkirchen, Germany is the sole shareholder of AT Impf GmbH, Munich, Germany and beneficial owner of our ordinary shares. ATHOS KG via AT Impf GmbH has *de facto* control over BioNTech based on its substantial shareholding, which may enable it to exercise the majority of voting rights to pass resolutions in uncontested shareholders’ meeting of the Company.

In addition, members of the Management Board and the Supervisory Board as well as their close family members have been identified as related parties.

Further information regarding related party transactions during the six months ended June 30, 2025 can be found in Note 11 to our Q2 Unaudited Interim Condensed Consolidated Financial Statements. In addition, further information regarding related party transactions during years ended December 31, 2024, December 31, 2023 and December 31, 2022 can be found in Note 21, Note 21 and Note 20 to our respective Audited Consolidated Financial Statements.

13.2.1 Transactions with Key Management Personnel

Our key management personnel have been defined as the members of the Management Board and the Supervisory Board. Key management personnel compensation is comprised of the following for the periods indicated:

	Years ended December 31,		
	2024	2023	2022
(in millions €)	(audited)		
Management Board	13.0	8.3	15.0
Fixed compensation	4.0	3.9	2.9
Fringe benefits	0.2	—	—
Short-term incentive – first installment	0.8	0.7	0.6
Short-term incentive – second installment[2]	0.6	1.0	0.7
Other variable compensation[3]	1.3	0.8	0.1
Share-based payments (incl. long-term incentive)[4]	6.1	1.9	10.7
Supervisory Board	0.9	0.6	0.5
Total compensation of key management personnel	**13.9**	**8.9**	**15.5**

(1) During the year ended December 31, 2024, Sean Marett retired from the Management Board with effect as of July 1, 2024. Therefore, his compensation until his departure date is presented on a pro-rata basis in this table. The following compensation pursuant to his separation agreement subsequent to his departure date and thus as former Management Board member are not included in this table: a severance payment of €275,000, an additional payment of €39,000 in respect of the 2024 STI, a grant of 5,760 phantom options in respect of the 2024 LTI and a payment of €477,030 in relation to his 12-months consultancy agreement.

(2) The fair value of the second installment of the short-term incentive compensation which has been classified as a cash-settled share-based payment arrangement was determined pursuant to the regulations of IFRS 2 *Share-based Payment*. This table shows the pro-rata share of personnel expenses for the respective financial year, which are recognized over the award's vesting period beginning as of the service commencement date (date when entering or renewing service agreements) until each separate determination date and are remeasured until settlement date.

(3) Represents for the financial year 2024 the cash payment related to the one-time signing bonus granted to Annemarie Hanekamp as part of her appointment to the Management Board, designed to compensate her for lower bonus payments that she would receive as part of her compensation package with BioNTech and to recognize and appreciate her move to BioNTech. For 2023, the amount represents the one-time signing cash payment related to James Ryan's appointment to the Management Board to provided compensation in lieu of participation in the LTI 2023 program and the one-time special cash payment related to Jens Holstein to honour his contribution to BioNTech's extraordinary financial performance. For 2022, the amount includes a one-time signing and retention cash payment agreed when renewing the service agreement agreed with Sean Marett in 2022.

(4) The fair value of the share-based payments was determined pursuant to the regulations of IFRS 2 *Share-based Payment*. This table shows the pro-rata share of personnel expenses resulting from stock-based compensation for the respective financial year. During the years ended December 31, 2024, 2023 and 2022, the amounts included expenses derived from a one-time signing bonus granted to Jens Holstein as of his appointment to the Management Board in the form of 4,246 phantom shares as well as expenses derived from the one-time signing bonus granted to Annemarie Hanekamp as of her appointment to the Management Board in the form of shares in the amount of €500,000.

The amounts disclosed in the table are the amounts recognized as an expense during the respective period.

Management Board members participate in the Company's ESOP program. Out of the 5,152,410 option rights granted to the Company's Management Board under the ESOP 2018 program, 4,921,630 options were exercised during the year ended December 31, 2022. The remaining 230,780 option rights were exercised by Sean Marett in May 2023. During the year ended December 31, 2024, our Chief Executive Officer Prof. Ugur Sahin, M.D., exercised all 4,374,963 options granted under his CEO grant 2019 and members of the Management Board, who participated in the LTI 2020 board program, exercised 209,128 options in August 2024 while 38,968 options are outstanding as of December 31, 2024.

During the year 2025 until the date of the Prospectus, 1,163 restricted stock units (RSUs) granted to James Ryan under the LTI 2020 Employee program were settled until June 5, 2025. 636 ADSs were transferred to his custody account from this settlement. During the year 2025 until the date of the Prospectus, the members of the Management Board and the Supervisory Board continued to receive their compensation as set out in section "*17.5 Compensation of the Members of the Management Board and the Supervisory Board*".

13.2.2 Transactions with Shareholders

The total amount of transactions with ATHOS KG or entities controlled by it was as follows for the periods indicated:

	Years ended December 31,		
(in millions €)	2024	2023	2022
	(audited)		
Purchases of various goods and services from entities controlled by ATHOS KG	0.2	0.3	0.3
Purchases of property and other assets from entities controlled by ATHOS KG	—	—	62.5
Total	**0.2**	**0.3**	**62.8**

The amounts disclosed in the table are the amounts recognized as an expense during the period.

On December 22, 2022, we entered into a purchase agreement with Santo Service GmbH, pursuant to which we acquired the real estate property An der Goldgrube 12 and the existing laboratory and office building including any movable assets for a total consideration of €62.5 million. The purchase price was paid during the year ended December 31, 2022. Santo Service GmbH is wholly owned by AT Impf GmbH, that is controlled by ATHOS KG.

The outstanding balances of transactions with ATHOS KG or entities controlled by them were as follows as of the dates indicated:

	December 31,		
	2024	2023	2022
(in millions €)	(audited)		
ATHOS KG	—	0.4	—
Total	—	**0.4**	—

None of the balances are secured and no bad debt expense has been recognized in respect of amounts owed by related parties.

A number of individuals in key positions can control or exercise significant influence over BioNTech SE. There were no business relationships with individuals in key positions during the year ended December 31, 2024.

The total amount of transactions with ATHOS KG or entities controlled by them had no significant impact on our Q2 Unaudited Interim Condensed Consolidated Financial Statements and until the date of the Prospectus, compared to the details for the year ended December 31, 2024.

14 GENERAL INFORMATION ON THE COMPANY AND THE GROUP

14.1 Formation and Incorporation; Legal Form; Legal and Commercial Name; Registered Seat

The Company was incorporated as a German stock corporation (*Aktiengesellschaft*) with the legal name Petersberg 91. V AG under the laws of Germany on June 2, 2008. The Company changed its name to BioNTech AG on November 10, 2008. Effective as of March 8, 2019, the date on which the change of legal form and company was registered with the commercial register (*Handelsregister*) of the local court (*Amtsgericht*) of Mainz, Germany, the Company converted to a Societas Europaea with the legal name BioNTech SE. The principal legislation under which the Company operates and its ordinary registered shares are issued are the SE Regulation, the German Law on the Implementation of Council Regulation (EC) No 2157/2001 of October 8, 2001 on the Statute for a European company (SE) (*Gesetz zur Ausführung der Verordnung (EG) NR. 2157/2001 des Rates vom 8. Oktober 2001 über das Statut der Europäischen Gesellschaft (SE) (SE-Ausführungsgesetz – SEAG)*) and the German Stock Corporation Act (Aktiengesetz), in each case as amended.

The Company is registered with the commercial register (*Handelsregister*) of the local court (*Amtsgericht*) of Mainz, Germany, under number HRB 48720. Its statutory seat is in Mainz, Germany, and its registered office is An der Goldgrube 12, 55131 Mainz, Germany, telephone: +49 6131 9084-0, website address: www.biontech.com. Information contained on, or that can be accessed through, this website is not incorporated by reference in the Prospectus and does not form part of the Prospectus.

BioNTech SE's Legal Entity Identifier (LEI) is 894500UZJ5LG1F8J1U58.

The Company and its subsidiaries appear in business dealings predominantly as "BioNTech".

14.2 Financial Year and Duration of the Company

The Company's financial year begins on January 1 and ends on December 31 of each calendar year. The duration of the Company is unlimited.

14.3 Corporate Purpose of the Company

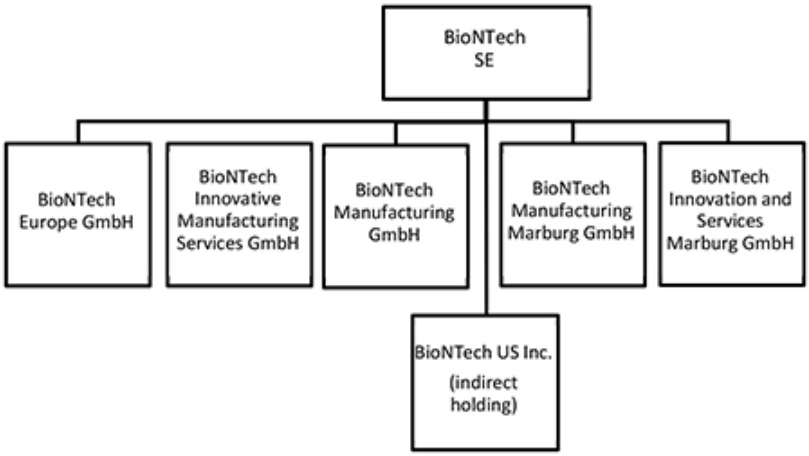
Pursuant to § 2 of the Articles of Association, the purpose of the Company is the research and development, manufacture and marketing of immunological and RNA-based drugs and test methods for the diagnosis, prevention and treatment of cancer, infectious diseases and other serious diseases.

The Company may undertake all transactions and actions that are expedient for serving the Company's purpose. It is also authorized to establish and acquire other companies and to invest in other companies, as well as to manage such companies or to limit itself to the administration of the investment.

14.4 Group Structure and Significant Subsidiaries

The Company is the parent company of the BioNTech Group and functions as the main operating entity of the Group and performs a variety of significant processes and additionally serves as a holding company.

The chart below shows the Company and its significant consolidated subsidiaries as of the date of the Prospectus (for each subsidiary, the participation is 100% of the share capital and voting rights):



The table below provides an overview of the significant subsidiaries of the Company:

Corporate name and corporate seat	Main line of business	Direct or indirect shareholding
BioNTech Manufacturing GmbH, Mainz, Germany	Manufacturing and R&D activities	100%
BioNTech Europe GmbH, Mainz, Germany	Distribution (until financial year 2024) / internal service provider (from financial year 2024)	100%
BioNTech Innovative Manufacturing Services GmbH, Idar Oberstein, Germany	Manufacturing and R&D activities	100%
BioNTech Manufacturing Marburg GmbH, Marburg, Germany	Manufacturing and R&D activities	100%
BioNTech Innovation and Services Marburg GmbH, Marburg, Germany	Internal service provider	100%
BioNTech US Inc., Cambridge, USA	R&D activities	100%

None of the significant subsidiaries of the Company has been assigned a Legal Entity Identifier (LEI).

14.5 Auditor

The Company appointed EY GmbH & Co. KG Wirtschaftsprüfungsgesellschaft (formerly Ernst & Young GmbH Wirtschaftsprüfungsgesellschaft), Stuttgart, Germany, or "**EY**", Cologne office, Börsenplatz 1, 50667 Cologne, Germany, as its statutory auditor of (i) the German-language annual financial statements of the Company as of and for the year ended December 31, 2024 and (ii) the German-language consolidated financial statements of the Company as of and for the years ended December 31, 2024, December 31, 2023 and December 31, 2022. The German-language annual financial statements of the Company as of and for the year ended December 31, 2024 have been prepared in accordance with German generally accepted accounting principles of the HGB. The German-language consolidated financial statements of the Company as of and for the years ended December 31, 2022 and December 31, 2023 have been prepared in accordance with International Financial Reporting Standards as adopted by the EU and the additional requirements of German commercial law pursuant to Section 315e para. 3 in conjunction with para. 1 HGB. The German-language consolidated financial statements of the Company as of and for the year ended December 31, 2024 have been prepared in accordance with IFRS Accounting Standards as issued by the International Accounting Standards Board (IASB) and adopted by the EU and the additional requirements of German commercial law pursuant to Section 315e para. 3 in conjunction with para. 1 HGB. In each case, EY conducted its audits

in accordance with Section 317 HGB and German generally accepted standards for financial statement audits, which are promulgated by the Institute of Public Auditors in Germany (*Institut der Wirtschaftsprüfer, IDW*), and issued German-language unqualified independent auditor's reports (*uneingeschränkte Bestätigungsvermerke des unabhängigen Abschlussprüfers*).

EY is appointed as the statutory auditor of (i) the German-language annual financial statements of the Company as of and for the year ending December 31, 2025 to be prepared in accordance with the German generally accepted accounting principles of the HGB and (ii) the German-language consolidated financial statements of the Company as of and for the year ending December 31, 2025 to be prepared in accordance with IFRS Accounting Standards as issued by the International Accounting Standards Board (IASB) and adopted by the EU and the additional requirements of German commercial law pursuant to Section 315e para. 3 in conjunction with para. 1 HGB.

EY is a member of the German Chamber of Public Accountants (*Wirtschaftsprüferkammer*), Rauchstraße 26, 10787 Berlin, Germany.

14.6 Announcements

Pursuant to the Company's Articles of Association, announcements of the Company are to be published exclusively in the German Federal Gazette (*Bundesanzeiger*).

Pursuant to Article 21 of the Prospectus Regulation, this Prospectus, as well as any supplements thereto, will be published on our website https://investors.biontech.de/investors-media under the "Investors — CureVac Tender Offer — CureVac Tender Offer Materials for EEA and Swiss Investors" section.

15 SHAREHOLDER STRUCTURE

The following table presents, to the best of the Company's knowledge, information regarding the beneficial ownership of its ordinary shares for:

- each person, or group of affiliated persons, known by the Company to own beneficially 5% or more of our outstanding shares;
- each member of the Supervisory Board;
- each member of the Management Board; and
- all members of the Supervisory Board and Management Board as a group.

The number of ordinary shares beneficially owned by each entity, person, and member of the Supervisory Board and the Management Board is determined in accordance with the rules of the SEC, and the information is not necessarily indicative of beneficial ownership for any other purpose. Under such rules, beneficial ownership includes any ordinary shares over which the individual has sole or shared voting power or investment power as well as any ordinary shares that the individual has the right to acquire within 60 days of the most recent practicable date, October 17, 2025, through the exercise of any option, warrant or other right. Except as otherwise indicated, and subject to applicable community property laws, the persons named in the following table have sole voting and investment power with respect to all ordinary shares held by that person. All of our ordinary shares and ADSs representing our ordinary shares vote on an equal basis.

The percentage of currently outstanding ordinary shares is computed on the basis of 240,455,450 ordinary shares outstanding. This amount excludes 8,096,750 shares held in treasury. Amounts presented in this section include ordinary shares held in the form of ADSs.

Following completion of the Offer, the shareholder structure of the Company will be as shown below, assuming issuance of 15,061,575, 12,049,725 and 10,042,601 of ordinary shares held through Offer ADSs issued to CureVac Shareholders following completion of the Offer.

Name of Beneficial Owner	Prior to the Offer		Percentage Beneficially Owned Following Completion of the Offer at Exchange Ratio of:		
	No. of Shares Beneficially owned	Percentage Beneficially Owned	0.06476	0.05181	0.04318
5% shareholders:					
AT Impf GmbH[1]	101,279,878	42.1%	39.7%	40.1%	40.4%
Medine GmbH [2]	40,131,958	16.7%	15.7%	15.9%	16.0%
All 5% shareholders, as a group	**141,411,836**	**58.8%**	**55.3%**	**56.0%**	**56.5%**
Members of the Supervisory Board and the Management Board:					
Prof. Ugur Sahin, M.D. [3]	41,421,644	17.2%	16.2%	16.4%	16.5%
Annemarie Hanekamp	—	—	—	—	—
Ramón Zapata-Gomez	—	—	—	—	—
Sierk Poetting, Ph.D.[4]	692,539	(9)	(9)	(9)	(9)
Ryan Richardson (former member)[5]	23,048	(9)	(9)	(9)	(9)
James Ryan, Ph.D.	1,426	(9)	(9)	(9)	(9)
Prof. Özlem Türeci, M.D.	184,998	(9)	(9)	(9)	(9)
Helmut Jeggle [6]	1,125,967	(9)	(9)	(9)	(9)
Ulrich Wandschneider, Ph.D.[7]	1,480	(9)	(9)	(9)	(9)
Baroness Nicola Blackwood	—	—	—	—	—
Prof. Anja Morawietz, Ph.D.[8]	240	(9)	(9)	(9)	(9)
Michael Motschmann	—	—	—	—	—
Prof. Rudolf Staudigl, Ph.D.	400	(9)	(9)	(9)	(9)
All members of the Supervisory Board and Management Board, as a group	**43,451,742**	**18.1%**	**17.0%**	**17.2%**	**17.3%**
Other existing shareholders of the Company prior to the Offer	**95,723,830**	**39.8%**	**37.5%**	**37.9%**	**38.2%**
CureVac Shareholders as a group following completion of the Offer[10]	—	—	**5.9%**	**4.8%**	**4.0%**

(1) Consists of 101,279,878 ordinary shares held by AT Impf GmbH. The sole shareholder of AT Impf GmbH is ATHOS KG, and, as a result, ATHOS KG is deemed to be the beneficial owner of the securities held by AT Impf GmbH. Thomas Maier is a general partner (*Komplementär*) of ATHOS KG and may be deemed to be beneficial owners of the securities held by AT Impf GmbH. Mr. Maier disclaims beneficial ownership of such shares except to the extent of their pecuniary interest therein.

(2) The sole shareholder of Medine GmbH is Prof. Ugur Sahin, M.D. and, as a result, Ugur Sahin is deemed to be the beneficial owner of the securities held by Medine GmbH. Consists of 39,111,390 ordinary shares held by Medine GmbH and 1,020,568 ordinary shares held by a former colleague, over which shares Prof. Sahin retains voting power pursuant to a written arrangement. Pursuant to this arrangement, Prof. Sahin retains voting power, but not dispositive power, over such shares, and accordingly Medine GmbH and Prof. Sahin each may be deemed beneficially to own such shares.

(3) Consists of the shares described in footnote 2 above, plus 1,289,686 ordinary shares held directly by Ugur Sahin. He is the sole shareholder of Medine GmbH.

(4) Consists of (a) 549,387 ordinary shares held by Tofino GmbH (Sierk Poetting is sole shareholder of Tofino GmbH), (b) 141,514 ordinary shares held directly by Sierk Poetting and (c) 1,638 ordinary shares held by his immediate family. Mr. Poetting disclaims beneficial ownership of the 1,638 ordinary shares held by his immediate family except to the extent of his pecuniary interest therein.

(5) Mr. Richardson stepped down from his positions on September 30, 2025.

(6) Consists of (a) 332,316 ordinary shares held directly by Helmut Jeggle and (b) 793,651 ordinary shares held by Salvia GmbH.

(7) Consists of 1,480 ordinary shares held by beebusy Capital GmbH. Ulrich Wandschneider is sole shareholder of beebusy Capital GmbH.

(8) Consists of (a) 200 ordinary shares held directly by Anja Morawietz and (b) 40 ordinary shares held by her immediate family.

(9) Less than one percent.

(10) Assuming 232,575,292 CureVac Shares are held by one shareholder and tendered in the Offer, CureVac Shareholders do not hold any BioNTech ADSs and no existing shareholder of the Company holds CureVac Shares which are contributed to the Company in connection with the Offer.

The Company's share capital consists of ordinary shares, some of which are traded in the United States by means of American Depositary Shares (ADSs), each representing one ordinary share. Each ordinary share of the Company confers the right to one vote at the Company's shareholders' meeting. Voting rights are the same for all of the Company's shareholders. The depositary, The Bank of New York Mellon, is the holder of the ordinary shares underlying the ADSs. Based on the limited information available to us and the depositary, we generally cannot determine with certainty the number of U.S. shareholders or how many shares such shareholders own.

Pursuant to the deposit agreement governing the ADSs, the Company may instruct the ADSs' depositary to vote the shares that underly ADSs on uncontested agenda items for that portion of shares for which the depositary has not received specific voting instructions from the beneficial owners of ADSs. In prior shareholders' meetings of the Company, there were no contested agenda items, and AT Impf GmbH's (or, indirectly, ATHOS KG's) shareholding did not confer to it a majority of the votes cast at such meetings. Based solely on uncontested prior shareholders' meetings, if all Company-instructed votes were excluded from the voting tabulation, AT Impf GmbH (or, indirectly, ATHOS KG) would have voted a majority of the votes cast at such meetings and may therefore be considered to have *de facto* control over the Company.

16 INFORMATION ON THE SHARE CAPITAL OF THE COMPANY AND APPLICABLE REGULATIONS

The following overview presents information regarding the Company's share capital as well as certain provisions of the Company's Articles of Association and of German law.

16.1 Share Capital

As of the date of the Prospectus, the Company's share capital registered in the commercial register (*Handelsregister*) amounts to €248,552,200 and is divided into 248,552,200 ordinary registered shares (*Namensaktien*). All shares are ordinary shares with no par value (*Stückaktien ohne Nennbetrag*) with a notional amount attributable to each ordinary share of €1.00. Each issued ordinary registered share is fully paid.

16.2 Form, Certification and Transferability of Shares

The form and contents of the Company's share certificates, collective share certificates and global share certificates are determined by the Management Board. A shareholder's right to certification of its shares is excluded, to the extent permitted by law and to the extent that certification is not required by the stock exchange on which the shares or rights or certificates representing them are admitted to trading. The Company is permitted to issue collective share certificates and global share certificates that represent multiple or all of its shares.

The Company's shares are freely transferable under German law.

16.3 Changes in Our Share Capital During the Last Three Financial Years

The Company's share capital as registered with the commercial register (*Handelsregister*) amounts to €248,552,200. Since January 1, 2022, the Company's share capital has changed as follows:

- On March 24, 2022, the share capital as registered with the commercial register (*Handelsregister*) was increased to €246,807,808 by issuing 497,727 ordinary shares; and
- on May 20, 2022, the share capital as registered with the commercial register (*Handelsregister*) was increased to €248,552,200 by issuing 1,744,392 ordinary shares.

As of the date of the Prospectus, the Company held 8,096,750 ordinary shares in treasury (including through ADSs held in treasury). The Company applies the par value method to repurchases of outstanding American Depositary Shares. Accordingly, the nominal value of acquired treasury shares is deducted from share capital and shown in the separate item 'treasury shares' in the Company's Audited Annual Financial Statements and amounts to €8,096,750 as of the date of the Prospectus. Any premium paid in excess of the nominal value of a repurchased ADS is deducted from the capital reserve.

16.4 Future Changes to the Share Capital

16.4.1 Authorized Capital

The general meeting of a European stock corporation (*Societas Europaea*) governed by German law can authorize the Management Board, with the consent of the Supervisory Board, to issue shares in a specified aggregate nominal amount of up to 50% of the issued share capital of such company at the time the resolution becomes effective. The shareholders' authorization becomes effective upon registration in the commercial register (*Handelsregister*) and is valid for a maximum period of five years.

Under § 4(5) of the Articles of Association, the Management Board is authorized, with the approval of the Supervisory Board, to increase the Company's share capital on one or more occasions in the period up to May 15, 2030, by a total of up to €124,276,100 by issuing up to 124,276,100 new no-par value registered shares in return for cash and/or non-cash contributions. The Management Board is authorized, with the approval of the Supervisory Board, to determine the further content of the share rights and the conditions of the share issue.

Shareholders must generally be granted subscription rights. The shares may also be acquired by one or more credit institutions, securities institutions or other companies within the meaning of Section 186 para. 5 sentence 1 German Stock Corporation Act (*Aktiengesetz*) determined by the Management Board with the obligation to offer them to the Company's shareholders for subscription (indirect subscription right).

However, the Management Board is authorized, with the approval of the Supervisory Board, to exclude shareholders' subscription rights for one or more capital increases as part of the authorized capital 2025,

a) to exclude fractional amounts from the subscription right;

b) in the event of a capital increase against cash contributions, if the issue price of the new shares is not significantly lower than the market price; the market price is also deemed to be the price of one American Depositary Share of the Company listed on the Nasdaq stock exchange, multiplied by the number of ADSs representing one share. The total number of shares issued in exercise of this authorization to exclude subscription rights may not exceed 10% of the share capital, neither at the time this authorization becomes effective nor – if this value is lower – at the time this authorization is exercised. Shares or ADSs issued or sold during the term of this authorization in direct or analogous application of Section 186 para. 3 sentence 4 German Stock Corporation Act (*Aktiengesetz*) with the exclusion of subscription rights are to be counted towards this limit of 10% of the share capital. Furthermore, shares or ADSs issued or to be issued to service bonds with option and/or conversion rights or option and/or conversion obligations shall be counted towards this limit of 10% of the share capital, provided that the bonds are issued during the term of this authorization in corresponding application of Section 186 para. 3 sentence 4 German Stock Corporation Act (*Aktiengesetz*) with the exclusion of subscription rights. The above issue limitation applies to ADSs, provided that the number of ADSs is to be divided by the number of ADSs representing one share;

c) in the event of a capital increase against contributions in kind, in particular for the issuance of shares as part of business combinations and the acquisition of companies, parts of companies and interests in companies or other assets or claims to the acquisition of assets including receivables from the Company and its group companies as well as license or industrial property rights;

d) to service option or conversion rights or obligations arising from bonds issued or to be issued by the Company and/or companies in which the Company directly or indirectly holds a majority interest;

e) to the extent necessary to grant holders or creditors of bonds with option or conversion rights or obligations issued or to be issued by the Company and/or companies in which the Company holds a direct or indirect majority interest a subscription right to new shares to the extent to which they would be entitled after exercising the option or conversion rights or after fulfilling the option or conversion obligations;

f) to implement a scrip dividend, whereby shareholders are offered the option of contributing their dividend entitlement (in whole or in part) to the Company as a contribution in kind in return for the issuance of new shares; and

g) if the new shares are issued as part of an incentive program and/or as share-based compensation to members of the Company's Management Board, members of the management of companies affiliated with the Company within the meaning of Sections 15 et seq. German Stock Corporation Act (*Aktiengesetz*) or employees of the Company or of companies affiliated with the Company within the meaning of Sections 15 et seq. German Stock Corporation Act (*Aktiengesetz*); restrictions relating to the shares issued may be agreed. If shares are to be issued to members of the Management Board, the Supervisory Board of the Company decides on the allocation in accordance with the allocation of responsibilities under stock corporation law.

The total number of new shares issued from the authorized capital 2025 with the exclusion of subscription rights may not exceed 10% of the share capital, neither at the time this authorization becomes effective nor – if this value is lower – at the time it is exercised. The aforementioned 10% limit shall include (i) those shares or ADSs that are issued or sold during the term of this authorization on the basis of other authorizations with the exclusion of subscription rights, with the exception of treasury shares or ADSs used in accordance with para. c) (iv), (v) or (vi) of the resolution on agenda item 10 of the Company's annual general meeting on May 17, 2024, also in conjunction with para. f) of the resolution on agenda item 11 of the Company's annual general meeting on May 17, 2024, as well as (ii)

those shares that are issued or are to be issued from conditional capital to service bonds with option and/or conversion rights or option and/or conversion obligations, provided that the bonds are issued during the term of this authorization under exclusion of subscription rights. The above issue limitation applies to ADSs with the proviso that the number of ADSs is to be divided by the number of ADSs representing one share.

For the Share Capital Increases and the Shares Issuances relating to the creation of the new ordinary shares that will underly the Offer ADSs constituting the Offer Consideration, see section "*3.1.2.9 Acceptance for Exchange of CureVac Shares; Delivery of BioNTech ADSs; Capital Increases*".

16.4.2 Conditional Capital

Pursuant to § 4(6) of the Articles of Association, the Company's share capital is conditionally increased by €4,943,452 through issuance of new registered shares with no par value, or "**Conditional Capital ESOP 2027/2019**" (*Bedingtes Kapital ESOP 2017/2019*). The Conditional Capital ESOP 2017/2019 may only be used to issue shares to the holders of option rights granted under the authorization for the Conditional Capital ESOP 2017/2019, or the "**Authorization 2017/2019**".

The conditional capital increase will only be implemented to the extent that stock options under the Authorization 2017/2019 are exercised and such stock options are not serviced by providing treasury shares or through cash payments. Any new shares issued under the Conditional Capital ESOP 2017/2019 pursuant to § 4(6) of the Articles of Association shall be entitled to dividends from the beginning of the previous financial year in case they are created by the exercise of subscription rights until the start of the annual general meeting of the Company and otherwise from the beginning of the financial year in which they are created as a result of the exercise of the stock options.

Pursuant to § 4(7) of the Articles of Association, the share capital is conditionally increased by €24,855,220 through issuance of new registered shares with no par value, or "**Conditional Capital WSV 2024**" (*Bedingtes Kapital WSV 2024*). The conditional capital may only be used until May 16, 2029 to issue shares to the holders or creditors of option rights or conversion rights or those under an obligation to convert under warrant-linked or convertible bonds avail of their option rights or conversion rights or where they are under an obligation to convert, to the extent they satisfy their obligation to convert, or to the extent that the Company exercises a right to choose to grant shares, in whole or in part instead of paying a monetary amount due, and to the extent cash compensation is not granted in each relevant case or treasury shares or shares of another stock-listed company or other forms of fulfilment are not utilized for servicing.

Any new shares issued under the Conditional Capital WSV 2024 pursuant to § 4(7) of the Articles of Association shall carry an entitlement to dividends from the beginning of the financial year in which they are created; however, as far as the law permits, the Management Board can confer dividend rights for new shares in derogation of the foregoing and also in deviation from Section 60 para. 2 of the German Stock Corporation Act (*Aktiengesetz*) for a financial year that has already expired.

Pursuant to § 4(8) of the Articles of Association, the share capital is conditionally increased by €1,300,000 through issuance of new, registered shares with no par value, or "**Conditional Capital ESOP 2021**" (*Bedingtes Kapital ESOP 2021*). The Conditional Capital ESOP 2021 serves exclusively to grant rights to the holders of stock options issued by the Company in accordance with the authorization granted by the annual general meeting on June 22, 2021 under agenda item 7 para d) also as amended by the resolution of the Company's annual general meeting on May 17, 2024 under agenda items 12 and 13, or the "**Authorization 2021**".

The conditional capital increase will only be implemented to the extent that stock options under the ESOP are exercised by the holders of the stock options issued by the Company on the basis of the Authorization 2021 and such stock options are not settled by the Company with treasury shares or through cash payments. Any new shares issued under the Conditional Capital ESOP 2021 pursuant to § 4(8) of our Articles of Association shall participate in profits from the beginning of the preceding financial year in case they are created by the exercise of subscription rights until the start of the annual general meeting of the Company and otherwise from the beginning of the financial year in which they are created as a result of the exercise of the stock options.

Pursuant to § 4(9) of the BioNTech articles (*Satzung*), our share capital is conditionally increased by €6,213,805 through issuance of new, registered shares with no par value, or "**Conditional Capital ESOP 2024**" (*Bedingtes Kapital ESOP 2024*). The Conditional Capital ESOP 2024 serves exclusively to grant rights to the holders of stock options issued by us in accordance with the authorization granted by the Annual General Meeting on May 17, 2024, under agenda item 13 letter (f), or the "**Authorization 2024**".

The conditional capital increase will only be implemented to the extent that stock options under our ESOP are exercised by the holders of the stock options issued by us on the basis of Authorization 2024 and such stock options are not settled by us through cash payments or with treasury shares in another listed company or other forms of fulfilment. Any new shares issued under the Conditional Capital ESOP 2024 pursuant to § 4(9) of the BioNTech articles (*Satzung*) shall participate in profits from the beginning of the preceding financial year in case they are created by the exercise of subscription rights until the start of our Annual General Meeting and otherwise from the beginning of the financial year in which they are created as a result of the exercise of the stock options.

16.5 Pre-Emptive Rights

German law generally provides shareholders with preemptive rights when new shares, convertible bonds, bonds with warrants, profit participation rights or participating bonds are issued. This requirement, however, may also be satisfied by way of a credit institution subscribing for the securities and then offering them to the shareholders for purchase (*mittelbares Bezugsrecht*).

Further, it is possible for a shareholder resolution approved by three-quarters of the share capital voting on the resolution to exclude preemptive rights both where the general meeting itself resolves that the new securities are to be issued and in relation to the authorized capital, i.e., an authorization for the Management Board, with the consent of the Supervisory Board, to resolve on the issuance of new securities; provided, however, that in each case, the exclusion or the authorization to exclude preemptive rights, respectively, must be justified by specific facts, in accordance with established case law of the German Federal Court of Justice (*BGH*). The German Federal Court of Justice (*BGH*) considers the exclusion of subscription rights justified if it (i) serves a purpose in the company's interests, (ii) is suitable for attaining such purpose, and (iii) is necessary and appropriate. Additionally, the Management Board must submit a written report to the shareholders' meeting in which it presents the reasons for the exclusion of the subscription rights.

16.6 Shareholders' Meetings and Voting Rights

Pursuant to the Company's Articles of Association, shareholders' meetings may be held in person or virtually at the Company's seat or in any municipality in Germany with more than 500,000 inhabitants. Generally, shareholders' meetings are convened by the Management Board, or the Supervisory Board. Shareholders representing in the aggregate at least five percent of the Company's ordinary shares may, subject to certain formal prerequisites, request that a shareholders' meeting be convened. Shareholders representing in the aggregate at least five percent of the Company's ordinary shares or owning shares with an aggregate nominal value of at least €500,000 may request the addition of one or several items to the agenda of any shareholders' meeting. Shareholders' meetings may be summoned either via publication in the German Federal Gazette (*Bundesanzeiger*) or via mail or email, in each case generally at least 30 days before the meeting.

Shareholders may participate and vote in the shareholders' meeting if they are registered as a shareholder with the Company's share register. A shareholder who wishes to attend the shareholders' meeting, either in person or by proxy, which may also be appointed by the Company (*Stimmrechtsvertreter*), must register for the meeting, which registration must occur no later than six days before the meeting (or at a later date, if so determined by the Management Board).

Each share carries one vote at a shareholders' meeting. Resolutions are, in accordance with the Company's Articles of Association, generally taken by simple majority of the votes cast. However, under applicable German and European law, a number of resolutions must be passed by either a three-quarter majority of the votes cast or a three-quarter majority of the share capital represented at the meeting. The fact that in these cases the quorum is determined in relation to the share capital or shares present (as opposed to, for example, all shares eligible to vote) means that holders of a minority of the Company's shares could potentially control the outcome of resolutions.

16.7 Claims against Directors and Shareholders' Derivative Actions

Under German law, generally, the company, rather than its shareholders, is the proper claimant in an action with respect to a wrong committed against the company, or in cases where there is an irregularity in the company's internal management or supervision. Therefore, such claims may only be raised by the company represented by its management board, or, in the case of a wrong committed by a member of the management board, by the supervisory board. This concerns, in particular, claims against members of the management board or the supervisory board.

However, pursuant to German case law, the supervisory board is obliged to pursue the company's claims against the management board, unless the interest of the company keeps them from doing so. Further, the management board, or, if a claim is against a member of the management board, the supervisory board, is obliged to pursue the company's claims against the designated individuals if so resolved by a simple majority of votes cast during a shareholders' meeting. With a simple majority of votes, shareholders can also request that a representative pursue the claim on behalf of the company. The court may appoint such a representative upon the request of shareholders holding at least 10% of the company's share capital or a participation of at least €1,000,000 in the share capital.

If the company is unable to fulfill its third-party obligations, the company's creditors may pursue the company's damage claims against members of the management board for certain wrongdoings.

Under certain circumstances, shareholders can bring forward damage claims of the company against its management on their own behalf. In order to bring forward such a claim one shareholder alone or together with other shareholders needs to hold at least 1% of the company's share capital or a participation of €100,000 in the share capital. Additionally, the claimant(s) must comply with special claim approval procedures conducted before a competent court which will allow the pertinent request only if there are circumstances justifying the assumption that damage has been afflicted on the company by improper conduct or a gross breach of the law or the articles of association.

16.8 Dividend Rights

Under German law, distributions of dividends on shares for a given financial year are generally determined by a process in which the management board and supervisory board submit a proposal to the company's annual general shareholders' meeting held in the subsequent financial year and such annual general shareholders' meeting adopts a resolution.

German law provides that a resolution concerning dividends and distribution thereof may be adopted only if the company's unconsolidated financial statements prepared in accordance with German law show net retained profits. In determining the profit available for distribution, the result for the relevant year must be adjusted for profits and losses brought forward from the previous year and for withdrawals from or transfers to reserves. Certain reserves are required by law and must be deducted when calculating the profit available for distribution.

Shareholders generally participate in profit distributions in proportion to the number of shares they hold. Dividends on shares resolved by the general shareholders' meeting are paid annually, shortly after the general shareholders' meeting, in compliance with the rules of the respective clearing system. Dividend payment claims are subject to a three-year statute of limitation in the company's favor.

16.9 Authorization to Acquire and Sell Treasury Shares

The Company may not acquire its own shares unless authorized by the shareholders' meeting or in other very limited circumstances as set out in the German Stock Corporation Act (*Aktiengesetz*). The shareholders' meeting held on May 17, 2024 authorized the Management Board until May 16, 2029, provided it complies with the legal requirement of equal treatment, to acquire treasury shares up to a total of 10% of the Company's share capital at the time of the relevant resolution or at the time the authorization is exercised. These shares held by the Company (including shares attributable to them

pursuant to the German Stock Corporation Act (*Aktiengesetz*)) must never exceed 10% of the share capital. The shares may be purchased (i) through the stock exchange, (ii) by means of a public offer directed to all our shareholders, (iii) by means of a public invitation to the shareholders to make a sales offer, or (iv) from the Bill & Melinda Gates Foundation under very limited circumstances as specified in the authorization. Such shares may not be purchased for trading purposes. The Management Board is authorized to use the shares only as specified in the authorization.

16.10 Squeeze-Out of Minority Shareholders

Under German law, the shareholders' meeting of a stock corporation may resolve, upon request of a shareholder that holds at least 95% of the share capital, that the shares held by any remaining minority shareholders be transferred to the majority shareholder against payment of "adequate cash compensation" (*Ausschluss von Minderheitsaktionären*). This amount must take into account the full value of the company at the time of the resolution, which is generally determined using the future earnings value method (*Ertragswertmethode*).

A squeeze-out in the context of a merger (*umwandlungsrechtlicher Squeeze-Out*) only requires a majority shareholder to hold at least 90% of the share capital.

16.11 Liquidation Rights

Apart from liquidation as a result of insolvency proceedings, the Company may be liquidated by a resolution of the shareholders' meeting to dissolve the Company followed by a liquidation procedure. The resolution of the shareholders' meeting requires a vote of 75% or more of the share capital represented at the vote at the time the resolution is adopted. Furthermore, the commencement of insolvency proceedings regarding the assets of the Company, the rejection of insolvency proceedings for insufficient assets to cover the costs of the proceedings, a cancellation of the Company for lack of funds or the imposition of a final decision of the registry court about a material defect in the Articles of Association could lead to a dissolution of the Company. In the event of the Company's liquidation, Article 63 of the SE Regulation in conjunction with the German Stock Corporation Act (*Aktiengesetz*) provides that any assets remaining once all of the Company's liabilities have been settled shall be distributed amongst the Company's shareholders in proportion to their shareholdings. Certain restrictions, in particular restrictions for the benefit of creditors, must be observed.

16.12 Takeover Regulation

As the ADSs and the ordinary shares of the Company are registered with the SEC under the Exchange Act, any offer which relates to the ADSs or the ordinary shares of the Company has to comply with the United States' provisions relating to tender offers, which are set forth in Section 14(d) and Section 14(e) of the Exchange Act as well as in Regulation 14D and Regulation 14E. The main provisions applicable to tender offers are: (1) the original offer period allows for acceptance of a tender offer within an acceptance period of at least 20 U.S. business days, subject to mandatory extension in certain conditions; (2) the extension of withdrawal rights for the holders of ADS or ordinary shares in certain conditions; (3) application of all holder and best price provisions (which require that all holders of ADS or ordinary shares of the Company receive the same offer price for their ADS or ordinary shares); (4) prompt payment of the offer consideration (i.e., settlement within three days), and (5) restrictions on the option of the bidder to acquire ADSs or ordinary shares in the Company by other means than pursuant to a tender offer. These provisions are subject to certain exceptions when U.S. holders hold 40% or less of the class of securities being sought in the tender offer, including from the prompt payment requirement.

The provisions of the German Securities Acquisition and Takeover Act (*Wertpapiererwerbs- und Übernahmegesetz*) relating to public bids and takeovers that require any such bids to be carried out in a manner designed to safeguard equal and fair treatment to all shareholders and give them a right to be bought out at an adequate compensation where a party acquires "control" (as such term is defined in such provisions) over the relevant company do not apply.

The Company's Articles of Association do not include any provisions that would have a direct effect of delaying, deferring or preventing a change of control. However, in the event of a hostile takeover, the Company could use its authorized capital to increase its share capital to issue new shares to an investor at a premium. An increase in the number of shares outstanding could have a negative effect on a party's ability to carry out a hostile takeover.

17 GOVERNING BODIES AND EMPLOYEES

17.1 Overview

The Company is a European public company with limited liability (*Societas Europaea* or SE) (also referred to as European stock corporation, and in the official terminology of the European legislation referred to as European public limited-liability company), having its seat in Germany. The company has chosen to have a two-tiered SE structure. Hence, the Company's corporate bodies are the Management Board (*Vorstand*), the Supervisory Board (*Aufsichtsrat*) and the shareholders' meeting (*Hauptversammlung*). The Management and Supervisory Boards are entirely separate, and, as a rule, no individual may simultaneously be a member of both boards.

The Management Board is responsible for the day-to-day management of the business in accordance with applicable laws, the Articles of Association and the Management Board's internal rules of procedure (*Geschäftsordnung*). The Management Board represents the Company in its dealings with third parties.

The principal function of the Supervisory Board is to supervise the Management Board. The Supervisory Board is also responsible for appointing and removing the members of the Management Board, representing the Company in connection with transactions between a current or former member of the Management Board and the Company, and granting approvals for certain significant matters.

The Management Board and the Supervisory Board are solely responsible for and manage their own areas of competency (*Kompetenztrennung*); therefore, neither Board may make decisions that, pursuant to applicable law, the Articles of Association or the internal rules of procedure are the responsibility of the other Board. Members of both Boards owe a duty of loyalty and care to the Company. In carrying out their duties, they are required to exercise the standard of care of a prudent and diligent businessperson. If they fail to observe the appropriate standard of care, they may become liable to the Company.

In carrying out their duties, the members of both Boards must take into account a broad range of considerations when making decisions, including the Company's interests and the interests of the shareholders, employees, creditors and, to a limited extent, the general public, while respecting the rights of the shareholders to be treated on equal terms. Additionally, the Management Board is responsible for implementing an appropriate and effective internal control system and risk management system with regard to the scope of business activities and the risk situation of the Company.

The Supervisory Board has comprehensive monitoring responsibilities. To ensure that the Supervisory Board can carry out these functions properly, the Management Board must, among other duties, regularly report to the Supervisory Board regarding the current business operations and future business planning (including financial, investment and personnel planning). In addition, the Supervisory Board or any of its members is entitled to request special reports from the Management Board on all matters regarding the Company, its legal and business relations with affiliated companies and any business transactions and matters at such affiliated companies that may have a significant impact on its position at any time.

Under German law, the shareholders have, as a general rule, no direct recourse against the members of the Management Board or the members of the Supervisory Board in the event that they are believed to have breached their duty of loyalty and care to the Company. Apart from when the Company is unable to fulfill its third-party obligations, tortious conduct to Board members or other special circumstances, only the Company has the right to claim damages against the members of the two Boards.

The Company may waive these claims to damages or settle these claims only if at least three years have passed since a claim associated with any violation of a duty has arisen and only if the shareholders approve the waiver or settlement at a shareholders' meeting with a simple majority of the votes cast, provided that no shareholders who in the aggregate hold one-tenth or more of the Company's share capital oppose the waiver or settlement and have their opposition formally recorded in the meeting's minutes.

The Company has D&O (Directors and Officers) insurance for its Management Board members and Supervisory Board members, which covers the legal costs of defending a claim and any damages payable by a Management Board or Supervisory Board member for breach of their duties. The D&O insurance includes a deductible for the Management Board members which complies with the German Stock Corporation Act (*Aktiengesetz*).

17.2 Management Board

17.2.1 Overview

The Supervisory Board determines the exact number of members of the Management Board, which must consist of at least two members. Pursuant to the Articles of Association, the Supervisory Board may also appoint a chair or a spokesman of the Management Board. Ugur Sahin has been appointed the chair of the Management Board.

The members of the Management Board are appointed by the Supervisory Board for a term of up to five years. They are eligible for reappointment or extension, including repeated re-appointment and extension, after the completion of their term in office, in each case again for up to an additional five years. Under certain circumstances, such as a serious breach of duty or a vote of no confidence by the shareholders in a shareholders' meeting, a member of the Management Board may be removed from office by the Supervisory Board prior to the expiration of their term.

17.2.2 Members of the Management Board

The following table sets forth the names and functions of the current members of the Management Board, their ages, and their terms:

Name	Age	Year Appointed[1]	Term Expires	Position
Prof. Ugur Sahin, M.D.	59	2009	December 31, 2026	Chief Executive Officer
Annemarie Hanekamp	44	2024	June 30, 2028	Chief Commercial Officer
Ramón Zapata-Gomez	51	2025	June 30, 2028	Chief Financial Officer
Sierk Poetting, Ph.D.	52	2014	November 30, 2026	Chief Operating Officer
James Ryan, Ph.D.	49	2023	August 31, 2027	Chief Legal Officer and Chief Business Officer
Prof. Özlem Türeci, M.D.	58	2018	December 31, 2026	Chief Medical Officer

(1) Relates to the appointment as member of the management board of the Company including prior to its change of legal form.

The members of the Management Board can be contacted at the Company's business address.

The following is a brief summary of the business experience of the members of the Management Board.

Prof. Ugur Sahin, M.D., co-founded BioNTech in 2008 and has served as the Company's Chief Executive Officer since that time. He is a physician, immunologist and leader in the development of novel approaches to fighting cancer and infectious diseases. Ugur Sahin is one of the world's foremost experts on messenger ribonucleic acid (mRNA) medicines. He has pioneered several fundamental breakthroughs enabling the development of mRNA vaccines and other types of immunotherapies. He initiated and oversaw "Project Lightspeed", the historic development of the first mRNA vaccine for COVID-19, moving from lab and clinical testing to conditional approval within an unprecedented 11-month period. He also leads BioNTech's research and development of neoantigen specific as well as non-neoantigen specific mRNA cancer immunotherapies, which can be individually tailored and produced on demand according to the profile of non-synonymous mutations identified by next-generation sequencing in patients' tumors. Ugur Sahin is co-inventor of more than 500 filed patents applications and patents. His academic credentials include serving as a Full Professor in Translational Oncology & Immunology at Johannes Gutenberg University in Mainz, Germany, where he was the supervisor of more than 50 Ph.D. students. He also holds the role of Chairman of the Scientific Management Board of the Helmholtz Institute for Translational Oncology (HI-TRON). Based on his contributions to scientific discovery, Ugur Sahin has received numerous awards and recognitions, including the German Sustainability Award, the Mustafa Prize, and the German Cancer Award. He is married to Özlem Türeci.

Alongside his office as a member of the Management Board, Ugur Sahin is, or was within the last five years, a member of the administrative, management or supervisory bodies of and/or a partner in the following companies and partnerships outside BioNTech:

Current:

- Medine GmbH (Managing Director).

Previously:

- None.

Annemarie Hanekamp is the Company's Chief Commercial Officer. She joined BioNTech in 2024 and has more than 20 years of experience in the healthcare industry, including 15 years of commercial experience in companies ranging from early-stage biotechnology companies to full-scale pharmaceutical companies. She successfully delivered significant value in a broad range of roles: at Novartis (NYSE: NV), she led the U.S. and global teams through a time of strategic opportunities and operational headwinds following an unprecedented strong launch uptake of their novel treatment for prostate cancer. She was also responsible for building a new global oncology organization following a company-wide transformation. At Bristol-Myers Squibb Co. (NYSE: BMY), she held a pivotal role in evolving the company's U.S. oncology strategy, resulting in significant and sustainable growth including an expanded market access as well as product launches. Annemarie Hanekamp holds degrees in biomedical sciences as well as organizational leadership.

Alongside her office as a member of the Management Board, Annemarie Hanekamp is, or was within the last five years, a member of the administrative, management or supervisory bodies of and/or a partner in the following companies and partnerships outside BioNTech:

Current:

- None.

Previously:

- Advanced Accelerator Applications SA (Non-Executive Board Member).

Ramón Zapata-Gomez is our Chief Financial Officer. Ramón Zapata is a seasoned global finance executive with more than 25 years of experience in the pharmaceutical and consumer goods industries. He has held leadership roles at leading global companies including Novartis AG, Sandoz AG, and Mondelēz International, and has worked across Europe, North America, Latin America, and the Middle East. Throughout his career, Ramón Zapata has led finance functions enabling seamless execution from drug discovery through commercialization, including overseeing M&A transactions and successful integrations as well as driving digital finance transformations.

Prior to joining BioNTech, he served as Chief Financial Officer and Head of Scientific Operations of BioMedical Research at Novartis, where he was responsible for the overall leadership of the division's finance strategy and operations, portfolio realignment, cross-functional integration, and strategic external collaborations.

Ramón Zapata holds dual citizenship of the United States and Mexico. He is a Certified Public Accountant (CPA) from Universidad Panamericana. He holds an MBA from IPADE Business School, with academic credits earned at IESE Business School as part of the program. He also earned a postgraduate diploma in Tax Legislation from ITAM and is currently pursuing a Master's degree in Industrial-Organizational Psychology at Harvard University.

Alongside his office as a member of the Management Board, Ramón Zapata-Gomez is, or was within the last five years, a member of the administrative, management or supervisory bodies of and/or a partner in the following companies and partnerships outside BioNTech:

Current:

- Instituto Panamericano de Alta Dirección de Empresa (Member of the International Advisory Board)

Previously:

- Friedrich Miescher Institute for Biomedical Research (Member of the Board of Trustees); and
- Mariana Oncology, Inc. (Member of the Joint Governance Board)

Sierk Poetting, Ph.D., is the Company's Chief Operating Officer. He joined BioNTech in September 2014 from Novartis (NYSE: NV), where he served in various positions from May 2012 to August 2014 as Vice President and Chief Financial Officer for the Sandoz Division in North America. Sierk Poetting started his career as a consultant with McKinsey & Company. A German citizen, Sierk Poetting holds a Master of Science in Optical Sciences from the University of Arizona and a Ph.D. in Physics from the Ludwig-Maximilians University in Munich.

Alongside his office as a member of the Management Board, Sierk Poetting is, or was within the last five years, a member of the administrative, management or supervisory bodies of and/or a partner in the following companies and partnerships outside BioNTech:

Current:

- IQM Finland Oy (Chairman of the Board);
- Tofino GmbH (Managing Director);
- Mondrago Verwaltungs GmbH (Managing Director); and
- Mondrago GmbH & Co. KG (Limited Partner (*Kommanditist*)).

Previously:

- None.

James Ryan, Ph.D., is the Company's Chief Legal Officer and Chief Business Officer. He brings nearly 20 years of global legal and IP expertise in the pharmaceutical industry to BioNTech. James Ryan joined the Company in 2018 as Vice President Legal & IP, was promoted to Senior Vice President Legal & IP and General Counsel in 2021. He was appointed Chief Legal Officer and a Member of the Management Board in 2023 and to Chief Business Officer in July 2024. He has guided BioNTech through a wide range of key business, IP and transactional activities, mergers and acquisitions, strategic collaborations and equity capital markets transactions, including the Company's IPO in 2019. James Ryan and his teams played a pivotal role in the successful development of the Pfizer-BioNTech COVID-19 vaccine, supporting every legal aspect of the program, its launch and commercialization. Prior to joining BioNTech, he established the legal group of GW Pharmaceuticals (Nasdaq: GWPH), where he also served as Head of Legal Affairs. Earlier in his career, James Ryan worked for a number of UK and U.S. law firms, including Special Counsel at Covington & Burling LLP, where he specialized in commercial and strategic transactions with a focus on companies in the life sciences sector. James has a Ph.D. in epigenetics from the University of St Andrews, is a member of the Law Society of England & Wales and is a member of the Law Society of Ireland.

Alongside his office as a member of the Management Board, James Ryan is not, and was not within the last five years, a member of the administrative, management or supervisory bodies of and/or a partner of companies and partnerships outside BioNTech.

Prof. Özlem **Türeci, M.D.,** Co-founder and Chief Medical Officer of BioNTech, is a physician, immunologist, and cancer researcher with translational and clinical experience. She has helped lead the discovery of cancer antigens, the development of mRNA-based individualized and off-the-shelf immunotherapy candidates and other types of immunotherapies which are currently in clinical development. Özlem Türeci leads the clinical development of BioNTech's "Project Lightspeed", the Company's successful effort to develop and distribute an mRNA-based vaccine against COVID-19, a historic achievement completed in less than one year. Özlem Türeci previously served as CEO and Chief Medical Officer of Ganymed Pharmaceuticals AG, which she co-founded with Ugur Sahin and Christoph Huber. She is also a professor for Personalized Immunotherapy at the University Medical Center Mainz and the Helmholtz Institute for Translational Oncology Mainz (HI-TRON) and currently serves as President of the Association for Cancer Immunotherapy (CIMT) in Germany. She is a recipient of the German Sustainability Award, among other notable recognitions. Özlem Türeci is married to Ugur Sahin.

Alongside her office as a member of the Management Board, Özlem Türeci is not, and was not within the last five years, a member of the administrative, management or supervisory bodies of and/or a partner of companies and partnerships outside BioNTech.

17.2.3 Management Board Practices

The members of the Management Board conduct the daily business of the Company in accordance with applicable laws, the Articles of Association and the rules of procedure for the Management Board adopted by the Supervisory Board. They are generally responsible for the management of the Company and for handling the daily business relations with third parties, the internal organization of the business and communications with the shareholders.

A member of the management board of an SE governed by German law may not deal with or vote on matters relating to proposals, arrangements or contractual agreements between themselves and the Company, and a member of the Management Board may be liable to the Company if they have a material interest in any contractual agreement between the Company and a third party which is not disclosed to and approved by the Supervisory Board.

The rules of procedure for the Management Board provide that certain matters require a resolution of the entire Management Board, in addition to transactions for which a resolution adopted by the entire Management Board is required by law or required by the Articles of Association. In particular, the entire Management Board shall decide on, among others:

- the budget plan for the following year, which is to be presented by the Management Board to the Supervisory Board by December 10 of each year;
- presentation of the Company's financial statements and consolidated financial statements and reviews of operations of the Company and the Group;
- reporting to the Supervisory Board;
- all measures and transactions that require the Supervisory Board's approval;
- all measures and transactions that are of fundamental importance or involve an extraordinary economic risk to the Company, including without limitation, establishing new lines of business or discontinuing existing ones, acquisitions or sales of material business assets, material interests, holdings and investments and material contracts or transactions;
- convening the Company's shareholders' meetings and proposals for resolutions by the Company's shareholders' general meetings; and
- appointment and termination of key managers in the Group.

17.3 Supervisory Board

17.3.1 Overview

German law requires that the Supervisory Board consists of at least three members, while a company's articles of association may stipulate a certain higher number. The Supervisory Board currently consists of six members.

As the Company is not subject to co-determination, the members of the Supervisory Board are all elected by the shareholders' meeting in accordance with the provisions of the SE Regulation and the German Stock Corporation Act (*Aktiengesetz*). German law does not require the majority of the Supervisory Board members to be independent and neither the Articles of Association nor the rules of procedure for the Supervisory Board provide otherwise. As per the Supervisory Board's assessment, an appropriate number of shareholder representatives on the Supervisory Board (i.e., the entire Supervisory Board) are independent if the Supervisory Board has two independent members. The Supervisory Board considers Helmut Jeggle and Michael Motschmann to be independent irrespective

of the fact that they will soon have been members of the Supervisory Board for a period of more than 14 years. As stated in the declaration to the German Corporate Governance Code, or the "**Corporate Governance Code**", (*Entsprechenserklärung*) published by the Company on February 27, 2025 pursuant to Section 161 para. 1 of the German Stock Corporation Act (*Aktiengesetz*), which in accordance with the Corporate Governance Code is issued in connection with the declaration pursuant to Section 315d in conjunction with Section 289f of the German Commercial Code (*HGB*), the length of membership does not give rise to any concerns of material conflicts of interest on the part of the members of the Supervisory Board and therefore does not stand in the way of their independence. However, the rules of procedure for the Supervisory Board provide that the Supervisory Board should have an independent member with expertise in the field of accounting, internal control processes and auditing. Ulrich Wandschneider, Anja Morawietz, Michael Motschmann and Rudolf Staudigl fulfill this role. See also "*17.8 German Corporate Governance Code*".

Under European law, a member of a supervisory board of an SE may be elected for a maximum term to be specified in the articles of association, which must not exceed six years. Re-election, including repeated re-election, is permissible. The shareholders' meeting may specify a term of office for individual members or all of the members of the Supervisory Board which is shorter than the standard term of office and, subject to statutory limits, may set different start and end dates for the terms of members of the Supervisory Board. The Articles of Association provide for a term of approximately five years, depending on the date of the annual shareholders' meeting in the year in which the term of the relevant member is to expire.

The shareholders' meeting may, at the same time as it elects the members of the Supervisory Board, elect one or more substitute members. The substitute members replace members who cease to be members of the Supervisory Board and take their place for the remainder of their respective terms of office. Currently, no substitute members have been elected or have been proposed to be elected.

Members of the Supervisory Board may be dismissed at any time during their term of office by a resolution of the shareholders' meeting adopted by at least a simple majority of the votes cast. In addition, any member of the Supervisory Board may resign at any time by giving one month's written notice – or, in the event of cause, giving written notice with immediate effect – of their resignation to the Management Board.

The Supervisory Board elects a chair and a deputy chair from its members. The deputy chair exercises the chairperson's rights and obligations whenever the chair is unable to do so. The members of the Supervisory Board have elected Helmut Jeggle as chair and Ulrich Wandschneider as deputy chair, each for the term of their respective membership on the Supervisory Board.

The Supervisory Board meets at least twice each calendar half-year. The Articles of Association provide that a quorum of the Supervisory Board members is present if at least three of its members participate in the vote. Members of the Supervisory Board are deemed present if they attend the meeting via telephone or other (electronic) means of communication (including via video conference) or submit their written vote through another member. Additionally, the Articles of Association allow for resolutions to be taken via telephone or other (electronic) means of communications (including via video conference).

Resolutions of the Supervisory Board are passed by the vote of a simple majority of the votes cast unless otherwise required by law, the Articles of Association or the rules of procedure of the Supervisory Board. In the event of a tie, the chair of the Supervisory Board has the casting vote. The Supervisory Board is not permitted to make management decisions, but in accordance with European and German law and in addition to its statutory responsibilities, it has determined that certain matters require its prior consent, including:

- entering into certain large transactions;
- acquiring any material interests in businesses of third parties (except group companies) or disposing of material assets or shares of the Group (other than in relation to an internal reorganization);
- issuing shares from authorized capital, unless the shares are issued pursuant to a redemption of stock appreciation rights; and

- acquiring treasury shares in return for valuable consideration.

Each member of the Supervisory Board shall disclose any conflicts of interest to the Supervisory Board, especially those that may arise from providing advice or holding any offices or board positions at customers, suppliers, creditors or other third parties. Material conflicts of interest that are not merely temporary and that are specific to a particular Supervisory Board member shall result in this particular member leaving office. The Supervisory Board also puts in place adequate measures to limit, prevent or resolve conflicts of interest in accordance with applicable legal requirements and the Company's Conflicts of Interest Policy.

The Supervisory Board conducted a self-assessment for the year ended December 31, 2024. It covered all key aspects of the Supervisory Board's work, including its committees, its composition, its competence profile, its main topics and its relationship with the Management Board. The results of the self-assessment have been evaluated and will subsequently be presented to the Supervisory Board. Based on the self-assessment, the Supervisory Board believes that it, its committees and the Management Board continue to operate at a professional and cooperative level. No fundamental need for change was identified.

17.3.2 Members of the Supervisory Board

The following table sets forth the names and functions of the members of the Supervisory Board, their ages, their terms (which expire on the date of the relevant year's shareholders' meeting) and their principal occupations outside of our Company:

Name	Age	Term Expires[1]	Principal Occupation
Helmut Jeggle (Chair Supervisory Board)	54	2026	Managing partner and entrepreneurial venture capital investor of Salvia GmbH (Supervisory Board member of 4SC AG, AiCuris Anti-infective Cures AG and Tonies SE, Board Director at Bambusa Therapeutics Inc.)
Ulrich Wandschneider, Ph.D. (Deputy Chair Supervisory Board)	64	2027	Managing director of beebusy capital GmbH and independent consultant to companies in the lifescience and healthcare sector (Supervisory Board Member at Marienhaus GmbH, Waldbreitbach, and FischerAppelt AG, Hamburg, Germany)
Baroness Nicola Blackwood	45	2027	Chair of Oxford University Innovations Limited, Equity Partner, ReCode Health Ventures LLC, Chair of Genomics England Limited, Senior Independent Director of RTW Biotech Opportunities Ltd.), Member of the UK House of Lords
Prof. Anja Morawietz, Ph.D.	48	2026	Certified Public Accountant and Management Consultant, Professor of External Accounting and General Business Administration at the Nuremberg University of Applied Sciences Georg Simon Ohm
Michael Motschmann	67	2027	Member of the Management Board and head of equity investments of MIG Capital AG (Supervisory Board member AFFiRiS AG and HMW-Emissionshaus AG)
Prof. Rudolf Staudigl, Ph.D.	71	2026	Independent consultant (member of the Supervisory Board of Groz-Beckert Kommanditgesellschaft (Deputy Chairman), Chairman of the Supervisory Board of Zadient Technologies SAS)

(1) Term expires as of the annual general meeting during the years indicated.

The members of the Supervisory Board can be contacted at the Company's business address.

The following is a brief summary of the prior business experience of the members of the Supervisory Board:

Helmut Jeggle has been Chair of the Supervisory Board since its foundation in 2008. He has a degree in business administration from the University of Applied Sciences in Neu-Ulm and an MBA (Master of Business Administration) from the Stuttgart Institute of Management and Technology. From 2000 to 2007, Helmut Jeggle held various positions at Hexal AG. From 2007 onwards, he was, among other things, in charge of Direct Investments at ATHOS KG, the family office of the Strüngmann family, from which he resigned as general partner (*Komplementär*) in April 2021. Since 2014, Helmut Jeggle has been Managing Director of Salvia GmbH, where he acts as an entrepreneurial venture capital investor. He is currently a member of two other supervisory boards of listed companies, including 4SC AG (ETR: VSC) and Tonies SE (ETR: TNIE).

Alongside his office as a member of the Supervisory Board, Helmut Jeggle is, or was within the last five years, a member of the administrative, management or supervisory bodies of and/or a partner in the following companies and partnerships outside BioNTech:

Current:

- Tonies SE (Member of the Supervisory Board and Chairman of the Audit Committee);
- 4SC AG (Member of the Supervisory Board);
- AiCuris Anti-infective Cures AG (Member of the Supervisory Board);
- Bambusa Therapeutics Inc. (Member of the Advisory Board);
- tonies GmbH (Member of the Supervisory Board);
- Solaris Pharma Corporation (Member of the Board);
- CorTec GmbH (Member of the Advisory Board);
- OQmented GmbH (Member of the Advisory Board);
- Salvia GmbH (Managing Director);
- Salvia Investment GmbH (Managing Director);
- Salvia Service GmbH (Managing Director); and
- Salvia Verwaltungs GmbH (Managing Director).

Previously:

- AT Impf GmbH (Managing Director);
- AT Newtec GmbH (Managing Director);
- ATHOS KG (General Partner (*Komplementär*));
- ATHOS Service GmbH (Managing Director);
- ATS Beteiligungsverwaltung GmbH (Managing Director);
- Dr. E. Strüngmann Foundation gGmbH (Managing Director)
- Jossa Arznei GmbH (Managing Director);
- Movinga GmbH (Member of the Advisory Board);
- Neula Holding GmbH (Managing Director);
- Neuraxpharm Holding GmbH (Managing Director);
- Pharma Radebeul GmbH (Managing Director);
- Santo Holding (Germany) GmbH (Managing Director);
- Santo Vermögensverwaltung GmbH (Managing Director);
- AFFiRiS AG (Member of the Supervisory Board);
- IQM Quantum Computers (Member of the Advisory Board);

- Santo Venture Capital GmbH (Managing Director);
- Glycotope GmbH (Member of the Advisory Board)
- Sidroga AG (President of the Administrative Board);
- SiO2 Medical Products (Board Member);
- SWB Holding GmbH (Managing Director); and
- APK AG (Member of the Supervisory Board).

Ulrich Wandschneider, Ph.D., has served as a member of the Supervisory Board since 2018. He has more than 20 years of experience in the healthcare sector as a manager in the operative business and as a member of boards and committees. He was a Partner at Arthur Andersen until 2002 and at Deloitte from 2002 to 2004 in the healthcare and life science. From 2004 to 2019 Ulrich Wandschneider served first as Chief Executive Officer later as Chairman of the Supervisory Board of Mediclin AG and of Asklepios Kliniken GmbH & Co. KGaA. In addition to BioNTech SE, he is part of the Supervisory Board of Marienhaus GmbH and FischerAppelt AG and he serves as member of various Advisory Boards in the healthcare sector.

Alongside his office as a member of the Supervisory Board, Ulrich Wandschneider is, or was within the last five years, a member of the administrative, management or supervisory bodies of and/or a partner in the following companies and partnerships outside BioNTech:

Current:

- FischerAppelt AG (Member of the Supervisory Board);
- Marienhaus GmbH (Member of the Supervisory Board);
- Hanns-Martin-Schleyer-Stiftung (Member of the Board of Trustees);
- Advanced Medical Balloons GmbH (formerly Creative Balloons GmbH) (Member of the Advisory Board);
- beebusy capital GmbH (Managing Director); and
- Pflege Familien-Holding Management Verwaltungs GmbH (in liquidation) and Pflege Familien-Holding Management GmbH & Co. KG (Managing Director).

Previously:

- MPH Health Care AG (Member of the Supervisory Board); and
- Vanguard AG (Member of the Supervisory Board).

Baroness Nicola Blackwood has served as a member of the Supervisory Board since May 25, 2023. She has been Chair of Genomics England since 2020 and Chair of Oxford University Innovation since 2021. She is a member of the House of Lords, the upper chamber of the Parliament of the United Kingdom (UK). Nicola Blackwood was elected Member of Parliament for Oxford West and Abingdon 2010 to 2017 and served as Minister for Innovation at the UK Department of Health and Social Care from 2016 to 2017 and 2019 to 2020 where she led on life sciences, NHS data and digital transformation and global health security. Among other roles, she was Chair of the technical regulator, the Human Tissue Authority, as well as a Chair of the UK House of Commons Science and Technology Select Committee and a member of the House of Lords Science and Technology Select Committee. Nicola Blackwood was educated at Trinity College of Music, London, St Anne's College, Oxford, and Emmanuel College, Cambridge.

Alongside her office as a member of the Supervisory Board, Nicola Blackwood is, or was within the last five years, a member of the administrative, management or supervisory bodies of and/or a partner in the following companies and partnerships outside BioNTech:

Current:

- Advance Research Clusters (Senior Advisor);

- Blackwood Intelligence (Sole Director);
- Genomics England Limited (Chair of Board);
- Oxford University Innovation (Chair of Board);
- RTW Biotech Opportunities Ltd. (Senior Independent Director);
- ReCode Health Ventures LLC (Partner); and
- Rare Therapies Launch Pad C.I.C. (Director, Chair).

Previously:

- The Alan Turing Institute (Trustee and Board Member).

Prof. Anja Morawietz, Ph.D., has served as a member of the Supervisory Board since 2022. She has been a professor of external accounting and general business administration at the Nuremberg University of Applied Sciences Georg Simon Ohm since 2015. Her research areas are international and national accounting, current developments in corporate governance and sustainability reporting. She also works as a freelance auditor, particularly in audit-related consulting. Previously, she worked for ten years for the auditing company KPMG AG, where she conducted audits of annual and consolidated financial statements and advised clients on accounting and regulatory issues. After training as a bank clerk at Norddeutsche Landesbank in Hanover, Anja Morawietz studied business administration at Goethe University in Frankfurt am Main, where she also completed her doctorate as an external doctoral candidate.

Alongside her office as a member of the Supervisory Board, Anja Morawietz is not, and was not within the last five years, a member of the administrative, management or supervisory bodies of and/or a partner of companies and partnerships outside BioNTech.

Michael Motschmann has served as a member of the Supervisory Board since 2008. He co-founded MIG Capital AG in 2004, where he serves on the Management Board and as Head of Equity Investments. In his role with MIG Capital AG, Michael Motschmann currently serves on the supervisory boards of several private portfolio companies.

Alongside his office as a member of the Supervisory Board, Michael Motschmann is, or was within the last five years, a member of the administrative, management or supervisory bodies of and/or a partner in the following companies and partnerships outside BioNTech:

Current:

- Belle Mare Capital GmbH (Managing Director);
- MIG Capital AG (Member of the Management Board);
- AFFiRiS AG (Member of the Supervisory Board);
- HMW Emissionshaus AG (Member of the Supervisory Board);
- Temedia GmbH (Member of the Advisory Board); and
- AMSilk GmbH (Member of the Advisory Board).

Previously:

- APK AG (Member of the Supervisory Board);
- Efficient Energy GmbH (Member of the Advisory Board); and
- HMW Innovations AG (Member of the Supervisory Board).

Prof. Rudolf Staudigl, Ph.D., has served as a member of the Supervisory Board since 2022. He studied chemistry at Ludwig Maximilian University of Munich, obtaining his Ph.D. (Dr. rer. nat) in 1981. After postdoctoral research at Harvard University (Cambridge, USA) and Ludwig Maximilian University, he joined Wacker Chemitronic in 1983. Rudolf Staudigl became Vice President of Operations at Wacker Siltronic Corporation (Portland, Oregon, USA) in 1989 and President a year later. He joined the

Executive Board of Wacker Chemitronic in 1993. In 1995, Rudolf Staudigl was appointed to the Executive Board of Wacker Chemie. From May 2008 until May 2021, Rudolf Staudigl was appointed President & CEO of Wacker Chemie AG. Until July 2024, he was a member of the Supervisory Board of TÜV SÜD Aktiengesellschaft. He currently serves as Deputy Chairman of the Supervisory Board of Groz-Beckert Kommanditgesellschaft and as Chairman of the Supervisory Board of Zadient Technologies SAS.

Alongside his office as a member of the Supervisory Board, Rudolf Staudigl is, or was within the last five years, a member of the administrative, management or supervisory bodies of and/or a partner in the following companies and partnerships outside BioNTech:

Current:

- Groz-Beckert Kommanditgesellschaft (Deputy Chairman of the Supervisory Board); and
- Zadient Technologies SAS (Chairman of the Supervisory Board).

Previously:

- TÜV SÜD Aktiengesellschaft (Member of the Supervisory Board);
- Wacker Chemie AG (Chairman of the Management Board); and
- Contemporary Amperex Technology Co., Limited (Chairman of the Supervisory Board).

17.3.3 Supervisory Board Practices

Decisions are generally made by the Supervisory Board as a whole, however decisions on certain matters may be delegated to committees of the Supervisory Board to the extent permitted by law. The chair, or if he or she is prevented from doing so, the deputy chair, chairs the meetings of the Supervisory Board and determines the order in which the agenda items are discussed, the method and order of voting, as well as any adjournment of the discussion and passing of resolutions on individual agenda items after a due assessment of the circumstances. The Supervisory Board may designate further types of actions as requiring its approval.

In addition, each member of the Supervisory Board is obliged to carry out their duties and responsibilities personally, and such duties and responsibilities cannot be generally and permanently delegated to third parties. However, the Supervisory Board and its committees have the right to appoint independent experts for the review and analysis of specific circumstances in accordance with its control and supervision duties under applicable European and German law. The Company would bear the costs of any such independent experts that are retained by the Supervisory Board or any of its committees.

Pursuant to Section 107 para. 3 of the German Stock Corporation Act (*Aktiengesetz*), the Supervisory Board may form committees from among its members and charge them with the performance of specific tasks. The committees' tasks, authorizations and processes are determined by the Supervisory Board. Where permissible by law, important powers of the Supervisory Board may also be transferred to committees.

The Supervisory Board has established an Audit Committee, a Compensation, Nominating and Governance Committee, a Capital Markets Committee and a Product Committee by resolution. Set forth in the table below are the members of the respective committees:

Name of Committee	Members
Audit Committee	Prof. Anja Morawietz, Ph.D. (Chair), Prof. Rudolf Staudigl, Ph.D and Ulrich Wandschneider, Ph.D.
Compensation, Nominating and Corporate Governance Committee	Prof. Rudolf Staudigl, Ph.D. (Chair), Baroness Nicola Blackwood and Michael Motschmann.
Capital Markets Committee	Helmut Jeggle (Chair), Prof. Anja Morawietz, Ph.D. and Michael Motschmann
Product Committee	Ulrich Wandschneider, Ph.D. (Chair), Baroness Nicola Blackwood and Helmut Jeggle

17.3.3.1 Audit Committee

The Audit Committee consists of Anja Morawietz (Chair), Rudolf Staudigl and Ulrich Wandschneider. The Audit Committee assists the Supervisory Board in overseeing the accuracy and integrity of the financial statements, the accounting and financial reporting processes and audits of the financial statements, the effective functioning of the internal control system, the risk management system, the compliance with legal and regulatory requirements, the independent auditor's qualifications and independence, the performance of the independent auditor and the effective functioning of the internal audit functions, and, subject to certain limitations, adopts and implements pertinent decisions on behalf of the Supervisory Board. The Audit Committee's duties and responsibilities to carry out its purpose, include, among others:

- oversight of the Company's accounting, sustainability reporting, financial reporting processes, sustainability reporting processes and the audit of the annual financial statements and the consolidated financial statements and the (group) management reports and sustainability report and the effectiveness of the internal control system;
- oversight of the effectiveness of the risk management system and the internal audit system;
- monitoring the independent audit, in particular the selection and independence of the auditor, the quality of the audit and the additional services provided by the auditor;
- making a recommendation to the Supervisory Board with respect to the proposal for the appointment of the auditors;
- considering the commissioning of the audit engagement, as well as the compensation, retention and oversight of the independent auditor;
- evaluating the qualifications, independence and quality of performance of the independent auditor;
- reviewing and pre-approving the audit and non-audit services to be performed by the independent auditor;
- reviewing and discussing with the independent auditor the annual audit plan and overall auditing strategy, the independent auditor's responsibilities and the management's responsibilities under the auditing process, and reviewing with the independent auditor and management the critical accounting policies and practices to be applied;
- reviewing of alternative treatments of financial information discussed by the independent auditor and the board, the implications of using such alternative disclosures and treatments, and the independent auditor's preferred treatment;
- reviewing and discussing with the independent auditor and management the adequacy and effectiveness of our internal accounting controls and critical accounting policies;
- reviewing and discussing with the independent auditor and management the results of the annual audit;
- reviewing non-financial reporting;
- reviewing the effectiveness of the compliance management system;
- reviewing, approving and monitoring any related party transactions in accordance with SEC regulations or German law and reviewing and monitoring potential conflict of interest situations on an ongoing basis for compliance with the Group's policies and procedures; and
- overseeing procedures for the receipt, retention and treatment of complaints received regarding accounting, internal accounting controls or auditing matters or other matters of compliance.

Within the limits of applicable European and German law, the Audit Committee shall have the resources and authority appropriate to discharge its duties and responsibilities, including the authority to select, retain, terminate, and approve the fees and other engagement terms of special or independent counsel, accountants or other experts and advisors, as it deems necessary or appropriate for so discharging its duties and responsibilities, without seeking approval of the Management Board or Supervisory Board.

All members of the Audit Committee qualify as "independent directors" as such term is defined in Rule 10A-3 under the Exchange Act and Nasdaq Rule 5605. Additionally, the Supervisory Board has determined that Anja Morawietz, Rudolf Staudigl and Ulrich Wandschneider qualify as "audit committee financial expert" as that term is defined under the Exchange Act. In addition, Anja Morawietz as Chair of the Audit Committee, Rudolf Staudigl and Ulrich Wandschneider have the special knowledge and experience required by the German Corporate Governance Code in the field of accounting and expertise in the field of auditing.

17.3.3.2 Compensation, Nominating and Corporate Governance Committee

The Compensation, Nominating and Corporate Governance Committee consists of Rudolf Staudigl (Chair), Nicola Blackwood and Michael Motschmann. The Compensation, Nominating and Corporate Governance Committee's duties and responsibilities to carry out its purpose include, among others:

- preparing and discussing with management policies relating to the remuneration of the members of the Management Board;
- reviewing and supervising corporate goals and objectives for the remuneration of the members of the Management Board, including evaluation of the performance of the members of the Management Board in light of these goals and proposals to the Supervisory Board for remuneration based on such evaluations;
- reviewing all equity-based compensation plans and arrangements and making recommendations to the Supervisory Board regarding such plans;
- assisting with identifying and recruiting candidates to fill positions on the Management Board and the Supervisory Board;
- considering any corporate governance issue that arises and developing appropriate recommendations for the Supervisory Board; and
- overseeing the evaluation of the Supervisory Board and reporting on its performance and effectiveness.

17.3.3.3 Capital Markets Committee

The Capital Markets Committee consists of Helmut Jeggle (Chair), Anja Morawietz and Michael Motschmann. The Capital Markets Committee advises and makes recommendations to the Supervisory Board on issues in connection with capital measures and takeover, merger and acquisition activities. Its responsibilities include the following tasks:

- overseeing the activities of the Company relating to its capital structure and capital raising, including preparation for and implementation of public offerings and share issuances; and
- overseeing the activities of the Company relating to takeovers, mergers and acquisitions activities.

17.3.3.4 Product Committee

The Product Committee consists of Ulrich Wandschneider (Chair), Nicola Blackwood and Helmut Jeggle. The Product Committee advises and makes recommendations to the Supervisory Board with respect to our strategy and investment in research and development programs and product launch preparations including commercialization. Its responsibilities include the following tasks:

- advising on strategy, execution and communication regarding relevant go-to-market efforts;
- overseeing the activities relating to (a) product development, (b) launch plans and (c) their execution; and
- advising on market potential for products in clinical development.

17.4 Code of Conduct and Conflicts of Interest Policy

The Company has adopted a Code of Business Conduct & Ethics, or Code of Conduct, which outlines the principles of legal and ethical business conduct under which the Company and its affiliates do business. The Code of Conduct applies to all of the Supervisory Board members, Management Board members, directors of our affiliates and employees. The full text of the Code of Conduct is available on our website at https://www.biontech.de/corporate-governance/overview. The information and other

content appearing on our website are not incorporated by reference into this Prospectus and the Company's website address is included in this report as an inactive textual reference only. Any amendments or waivers from the provisions of the Code of Conduct for members of the Supervisory Board or Management Board will be made only after approval by the Supervisory Board and will be disclosed on the Company's website promptly following the date of such amendment or waiver.

The Company has also adopted a Conflicts of Interest Policy which sets forth the procedures by which the Company manages potential and actual conflicts of interest. Under the Conflicts of Interest Policy, which applies to all of the Supervisory Board members, Management Board members, directors of the Company's affiliates and employees, an actual, potential or perceived conflict of interest must be disclosed when it first arises. If the conflict is transactional in nature and involves a member of the Management Board or the Supervisory Board, the Management Board or Supervisory Board, as the case may be, with the abstention of the conflicted member, shall decide whether to approve the transaction.

In addition, the Company has implemented compliance policies that describe the compliance management systems that have been implemented for the Company and its affiliates. The Company's compliance policies are designed to ensure compliance with applicable legal requirements, while at the same time implementing high ethical standards that are mandatory for both management and each employee. The overall responsibility for the compliance management system lies with the Management Board. The Audit Committee will receive regular reports on the operation of the compliance management system.

17.5 Compensation of the Members of the Management Board and the Supervisory Board

17.5.1 Compensation of the Members of the Supervisory Board

The compensation of the Supervisory Board reflects the duties, time commitment and demands of the role, the Company's market position, the need to be able to attract suitably qualified candidates and is designed to promote the Company's long-term development and business strategy.

Under § 9 of the Company's Articles of Association, the Supervisory Board receives 100% fixed compensation. All members of the Supervisory Board are also reimbursed for their expenses. While retaining the system for the compensation of Supervisory Board members, the compensation of the Supervisory Board and its committee members was adjusted during the year ended December 31, 2024, to take into account the increasing time commitment required from them in terms of their activities, responsibilities and necessary qualifications and competencies under German stock corporation and European laws and the life sciences industry. The new system was approved by the Company's annual general meeting on May 17, 2024, and was applied on a pro rata basis upon the entry of the revised Articles of Association in the Company's commercial register (*Handelsregister*) of the local court (*Amtsgericht*) of Mainz on August 30, 2024. Pursuant to Section 113 para. 3 German Stock Corporation Act (*Aktiengesetz*), a listed company's annual general meeting must pass a resolution on the compensation of its Supervisory Board members at least every four years.

Until August 30, 2024, each member of the Supervisory Board received annual base compensation of €70,000 (the Chair and Vice Chair received €210,000 and €105,000, respectively). The Chair of the Audit Committee received an additional €30,000 per year. Other committee Chairs each received an additional €15,000 per year. Each ordinary committee member received an additional €5,000 per committee. As of August 30, 2024, the members of the Supervisory Board receive annual base compensation of €120,000 (the Chair and Vice Chair receive €360,000 and €180,000, respectively). The Chair of the Audit Committee receives an additional €50,000 per year. Other committee Chairs each receive an additional €30,000 per year. Each ordinary committee member receives an additional €10,000 per committee.

Compensation is provided on a pro rata basis for individuals who are members of the Supervisory Board or a committee for part of the financial year. In 2023, this applied to Christoph Huber, who left as of the Company's annual general meeting on May 23, 2023, and Nicola Blackwood, who joined on the same date. Pro rata compensation was also paid to members of the Product Committee, which was established on October 1, 2023.

The compensation granted and owed to the Supervisory Board members during the years ended December 31, 2024 and 2023, is presented in the following table:

in thousands €[1]	Helmut Jeggle *Chair*	Ulrich Wandschneider, Ph.D. *Vice Chair*	Baroness Nicola Blackwood[2]	Prof. Christoph Huber, M.D.[3]	Prof. Anja Morawietz, Ph.D.	Michael Motschmann	Prof. Rudolf Staudigl, Ph.D.
Base Compensation							
2024	261	130	87	—	87	87	87
2023	210	105	42	28	70	70	70
Committee Compensation							
2024	27	27	13	—	43	13	27
2023	16	9	4	2	35	10	20
Total							
2024	**288**	**157**	**100**	**—**	**130**	**100**	**114**
2023	**226**	**114**	**46**	**30**	**105**	**80**	**90**

(1) Compensation is considered granted if it either has been actually received or the activities to which it relates have been performed. Compensation is considered owed if the compensation components are legally due, but have not yet been received. Where the preceding definition applies, compensation is referred to only as being "granted and owed". The Institute of Public Auditors in Germany, Incorporated Association (*Institut der Wirtschaftsprüfer, IDW*) has provided two interpretations for the presentation. According to interpretation 1, compensation is only shown as granted and owed in the year in which it is received (inflow principle; *Zuflussprinzip*). According to interpretation 2, compensation may also be disclosed in the compensation report for the financial year in which the activity underlying the compensation was performed (vesting principle; *Erdienungsprinzip*). The Supervisory Board and the Management Board have decided to apply interpretation 2 for short-term compensation components such as fixed compensation and short-term incentives, or STI, and interpretation 1 for share-based payments (including long-term incentives, or LTI). An approach which deviates from interpretation 1 was chosen because it allows a fair presentation of the actual benefits, which are, for example, subject to final underlying share price developments.

(2) Nicola Blackwood was appointed to the Supervisory Board by the Company's annual general meeting on May 25, 2023.

(3) Christoph Huber retired from the Supervisory Board on May 25, 2023.

BioNTech also covers any value-added tax applicable to compensation or expense reimbursement.

Supervisory Board members are included in the Company's D&O liability insurance and are co-insured at the Company's expense.

17.5.2 Compensation of the Members of the Management Board

On May 17, 2024, the Company's annual general meeting resolved to amend the compensation systems of the Management Board which is designed to further develop the previous system while retaining its basic structure. The Company has entered into agreements with all current members of the Management Board to give effect to a new compensation system with effect from January 1, 2025, which is designed to further develop the previous system while retaining its basic structure and was approved by the annual general meeting on May 17, 2024. The Company believes that the agreements between it and the members of the Management Board provide for payments and benefits (including upon termination of employment) that are in line with customary market practice. The following section describes the new compensation systems of the Management Board as applicable from January 1, 2025.

As the individual compensation components are determined individually for each Management Board member and, in addition, the scope of the planned starting amount for the assessment may vary in the different financial years, the expected relative shares of the individual compensation components can only be stated as percentage ranges. In general, the target total compensation for the entire Management Board should be structured in such a way that the share of fixed compensation is around 20% of the target total remuneration, the share of the short-term incentive, or "**STI**", (target amount) in the target total compensation is around 10% and the share of the long-term incentive, or "**LTI**" (target amount) in the target total compensation is around 70%.

For the Chairman of the Management Board, the share of fixed compensation is approximately between 10% and 20% of the target total compensation and the share of variable compensation is approximately between 80% and 90% of the target total compensation. The STI (target amount) accounts for approximately between 5% and 15% of the target total compensation and the LTI (target amount) for approximately between 70% and 80% of the target total compensation.

For the other members of the Management Board, the share of fixed compensation is approximately between 20% and 30% of the target total compensation and the share of variable compensation is approximately between 70% and 80% of the target total compensation. The STI (target amount) accounts for approximately between 10% and 20% of the target total compensation and the LTI (target amount) for approximately between 60% and 70% of the target total compensation.

17.5.2.1 Fixed Compensation and Fringe Benefits

The fixed compensation consists of a fixed, non-performance-related basic compensation, which is paid out as a salary in twelve monthly installments.

Other components of the fixed compensation are fringe benefits, such as allowances for health insurance, long-term care insurance and supplementary insurance, the conclusion of a D&O insurance policy with a deductible in accordance with Section 93 para. 2 sentence 3 of the German Stock Corporation Act (*Aktiengesetz*), non-cash benefits from bicycles and travel allowances as well as relocation costs and costs for tax advice.

In individual cases, the Supervisory Board may grant a sign-on bonus on the occasion of a new Management Board member taking office in the year of joining or the second year of appointment. Such a payment can, for example, compensate for losses of variable compensation that a Management Board member suffers as a result of joining the Company from a previous employer.

17.5.2.2 Performance-Related, Variable Compensation Components

The variable compensation components are linked to the success of the BioNTech Group. They consist of a short-term variable compensation component (Short-Term Incentive, STI) and a long-term variable compensation component (Long-Term Incentive, LTI). The amount of each component depends on the achievement of financial and non-financial performance indicators. With a view to sustainable, successful corporate development that is aligned with the interests of the shareholders and with the aim of ensuring that the compensation of the members of the Management Board is appropriate to the Company's situation, the Supervisory Board agrees the relative shares of various targets in the Management Board service contract with each member of the Management Board and sets the target figures defining target achievement for each member of the Management Board before a financial year.

17.5.2.2.1 Short Term Incentive, STI (Short-Term Oriented Variable Compensation)

The STI is a performance-related bonus with a one-year assessment period. The STI amounts to a maximum of 60% of the amount of the fixed compensation per year and depends on financial performance criteria and non-financial performance criteria (performance targets) of the BioNTech Group. It is granted entirely in cash.

The performance targets are set by the Supervisory Board for each upcoming financial year as follows:

- *Corporate Goals*: The Supervisory Board first defines ambitious and measurable company-related objectives (Company Goals), which are based on both operational and strategic objectives and can be set uniformly for all Management Board members or individually for individual Management Board members. The Company Goals can relate to both the Company and the BioNTech Group. In particular, Company Goals may be: (i) Financial development in line with the published financial forecast; (ii) share price performance compared to the NASDAQ Biotechnology Index; (iii) targets relating to business development; (iv) targets relating to product development and approval; and (v) the Supervisory Board can also define other Company Goals for a financial year.
- *ESG Goals*: In addition to the Company Goals, the Supervisory Board can also set environmental, social and governance targets, or "**ESG Targets**", for all members of the Management Board in order to incentivize sustainable and long-term corporate success, either uniformly or individually for individual members of the Management Board. With regard to the ESG Targets, the Supervisory Board defines the specific ESG Targets for a financial year on the basis of the following list of targets: (i) employee targets; (ii) sustainability targets; (iii) diversity targets; (iv) targets relating to energy and the environment; and (v) corporate governance.

In addition, the Supervisory Board can also define other ESG Targets for a financial year or base them on an external rating from Institutional Shareholder Services Inc, or "**ISS**". The rating can range from D- (particularly poor) to A+ (excellent). If the Supervisory Board decides to base the ESG Targets on a rating of ISS, the Supervisory Board determines the minimum rating to be achieved for the financial year in question in order to fully meet the ESG Targets in accordance with the table shown above. If the ESG rating of ISS in a financial year is in line with the previously defined target or better, the ESG Targets are fully met and there is a target achievement of 100% in relation to 20% to 30% of the STI. If ISS's ESG rating in a financial year is worse than the previously defined target, the short-term variable compensation in relation to the ESG Targets is zero.

At its first meeting after the end of the financial year, the Supervisory Board determines the actual target achievement of the STI for the respective Management Board member. The target achievement of the STI is measured against the achievement of the respective Corporate Goals and ESG Targets. The relative weighting is 70% to 80% for the Corporate Goals and 20% to 30% for the ESG Targets.

The Supervisory Board uses its best judgment to determine the extent (expressed as a percentage) to which the Corporate Goals have been achieved. 70% to 80% of the STI target is multiplied by the percentage achieved.

The Supervisory Board also determines at its own discretion the extent to which the ESG Targets have been achieved (expressed as a percentage). 20% to 30% of the STI target is multiplied by the percentage achieved. Alternatively, the achievement of the ESG Targets can be reviewed during the respective assessment period depending on the rating prepared by ISS.

The payment amount of the STI is due for payment in the month following approval of the Company's consolidated financial statements for the financial year that is relevant for the STI.

17.5.2.2.2 Long-Term Incentive, LTI (Long-Term Variable Compensation)

The LTI is intended to promote the Management Board's long-term commitment to the Company and its sustainable growth. The performance targets of the LTI are therefore linked to the long-term development of the Company and thus promote the business strategy.

The LTI is a long-term, multi-year performance-related compensation that is granted either in the form of a stock option program or a performance share unit program, or "**PSUP**", in annual tranches. For each member of the Management Board, the Supervisory Board determines for each financial year the ratio in which the LTI is granted under the stock option program and under the PSUP.

Stock Option Program

Each tranche of the stock option program generally has a term of up to ten years. However, the stock options may only be exercised for the first time after a waiting period and a parallel vesting period totaling four years, or "**Option Performance Period**", provided that the performance targets and vesting periods have been met. Each Option Performance Period begins with the allocation of stock options by the Supervisory Board in the relevant financial year, or "**Allocation Financial Year**". If the stock options are not exercised after the Option Performance Period, the Option Performance Period is automatically extended by one year in each case, but by a maximum of six further years.

In the Allocation Financial Year, the Supervisory Board resolves that a number of stock options will be issued to each member of the Management Board and thus allocated. This number is calculated as the quotient of the individual LTI target amount agreed in the Management Board service contract for stock options and the amount by which a specific target price exceeds the exercise price, which should be at least $105.16 based on an assumed market capitalization of $25 billion. The date of the Supervisory Board's resolution on the issue of the stock options is the "**Option Issue Date**".

Success Targets:

The stock options can only be exercised after the Option Performance Period if the following performance targets are met:

- The volume-weighted average closing price of American Depositary Shares of the Company on the Nasdaq stock exchange on the last ten trading days prior to the date of exercise of the stock options, multiplied by the number of ADSs representing one share, exceeds the exercise price by at least 80%; whereby this percentage increases by 20 percentage points from the fifth and each subsequent anniversary of the Option Issue Date (absolute price performance).
- In addition, the share price (calculated on the basis of the price of an ADS listed on the Nasdaq stock exchange multiplied by the number of ADSs representing one share) must have performed as well or better in percentage terms than the NASDAQ Biotechnology Index or a comparable successor index in the period from the last trading day before the Option Issue Date to the fifth trading day before the start of the relevant exercise period (relative price performance).

The Supervisory Board must provide for a possibility of limitation for extraordinary developments (cap). The LTI for the stock options is limited to 800% of the exercise price set by the Supervisory Board. If one or both performance targets are not achieved during the Option Performance Period, the stock options expire without compensation.

Waiting Period and Exercise Period:

The stock options may be exercised by the members of the Management Board for the first time four years after the allocation date by the Supervisory Board (vesting period) and may be exercised no later than ten years after the allocation date. If the stock options have not been exercised by then, they expire without compensation.

Vesting Conditions:

One quarter of the stock options allocated to the members of the Management Board vest at the beginning of the Option Performance Period each year from the allocation date. Premature termination of the Management Board service contract during the vesting period leads to a corresponding reduction in the vested stock options. The unvested portion of the allocated stock options lapses without compensation.

Cash Settlement:

The option conditions may stipulate that the Company may choose to grant the members of the Management Board (1) its own existing shares in the Company, (2) its own ADSs, (3) shares or rights or certificates representing these in another listed company, (4) a cash payment or (5) another form of fulfilment instead of new shares from conditional capital to service the stock options. The amount of the cash payment is calculated by multiplying the vested stock options by the difference between the relevant price (*Ausübungskurs*) and the exercise price (*Ausübungspreis*) for the stock options.

Relevant Price (*Ausübungspreis*):

The relevant price for the stock options is the average volume-weighted closing price of the share or ADS multiplied by the number of ADSs representing a share on the Primary Stock Exchange over the last 90 trading days prior to the Option Issue Date. However, if this average closing price falls below $105.16 (calculated on the basis of an assumed market capitalization of $25 billion divided by the shares issued by the Company as at December 31, 2023), the exercise price is to be based on this amount.

Exercise Price (*Ausübungskurs*):

The exercise price for the stock options is the closing price of the share or ADS multiplied by the number of ADSs representing a share on the last trading day before the day on which the stock options are exercised, or "**Option Exercise Date**", on the Primary Stock Exchange on the ten trading days prior to the Option Exercise Date.

Performance Share Unit Program (PSUP)

Each tranche of the PSUP has a term of four years, or "**PSU Performance Period**". Each PSU Performance Period begins with the allocation of PSUs by the Supervisory Board in the Allocation Financial Year.

At the beginning of the Allocation Financial Year in which they are granted, the members of the Management Board are each allocated a number of PSUs. The number of PSUs to be allocated is calculated as a quotient of an individually agreed LTI target amount, or "**PSU Target Amount**", in the respective Management Board service contract for the PSUs and a reference price set in relation to this.

The reference price for the PSUs is the average closing price of the last 90 trading days prior to the date of the Supervisory Board's resolution on the issue of the PSUs, or "**PSU Issue Date**". However, if this average closing price falls below $105.16 (calculated on the basis of an assumed market capitalization of $25 billion divided by the shares issued by the Company as of December 31, 2023), the reference price is to be based on this amount.

With the help of long-term variable compensation in the form of the PSUP, the interests of the members of the Management Board and the shareholders are to be aligned even more clearly with regard to a sustainable increase in the value of the Company. The PSUP is intended to ensure the long-term commitment of the Management Board to the Company and serve as an incentive.

Performance Targets and Determination of Target Achievement:

The PSUs can only be settled if the following condition is met: the share price (calculated on the basis of the price of an ADS listed on the Nasdaq stock exchange multiplied by the number of ADSs representing one share) must have performed as well or better in percentage terms than the NASDAQ Biotechnology Index or a comparable successor index in the period from the last trading day before the PSU Issue Date to the fifth trading day before the start of the relevant settlement period.

If the share price (calculated on the basis of the price of the ordinary share underlying the ADS) has underperformed the NASDAQ Biotechnology Index or a comparable successor index in percentage terms in the period from the last trading day before the PSU Issue Date to the fifth trading day before the start of the relevant settlement period, the performance target of the PSUP will not be achieved. In this case, the PSUs cannot be settled and expire without compensation.

However, if the share price (calculated on the basis of the price of the ordinary share underlying the ADS) has performed as well or better than the NASDAQ Biotechnology Index or a comparable successor index in percentage terms in the period from the last trading day before the PSU Issue Date to the fifth trading day before the start of the relevant settlement period, the performance target of the PSUP is achieved. The PSUs can be settled in accordance with the performance of the share on the trading system with the highest total trading volume on the last ten trading days.

Waiting Period:

The PSUs granted vest 100% after a vesting period of four years from the date of allocation.

At the end of this four-year waiting period, the Supervisory Board reviews whether the Management Board members have achieved the performance target for the PSUs described above. If this performance target is achieved, the PSUs can be converted into a cash payment, shares or ADSs.

Vesting Conditions:

One quarter of the PSUs allocated to the members of the Management Board at the beginning of the PSU Performance Period vest each year from the allocation date. Early termination of the Management Board service contract during the vesting period leads to a corresponding reduction in the vested PSUs. The unvested portion of the PSUs granted lapses without compensation.

Cash Settlement:

The conditions for the PSUs may provide that the Company may choose to grant the Management Board members (1) its own existing shares in the Company, (2) its own ADSs, (3) shares or rights or certificates representing them in another listed company, (4) a cash payment or (5) another form of settlement instead of new shares from authorized capital to service the PSUs.

The amount of the cash payment is calculated by multiplying the vested PSUs by the settlement price.

Settlement Price:

The settlement price for the PSUs is the closing price of the Company's share or (in the case of trading in rights or certificates representing the shares) the closing price of the right or certificate converted into an amount per share on the last trading day prior to the day on which the PSUs are exercised, or "**PSU Settlement Date**", in the trading system with the highest total trading volume on the ten trading days prior to the PSU Settlement Date.

Adjustments to Capital and Structural Measures

The Supervisory Board is authorized, to the extent permitted by law, to take compensatory measures, particularly in the following cases, in order to avoid a dilution or increase in the value of the grants intended with the stock options and PSUs: (i) Capital increase from Company funds by issuing new shares; (ii) reduction in the number of shares through the consolidation of shares without a simultaneous capital reduction or increase in the number of shares without a simultaneous increase in the share capital; (iii) capital reduction with a reduction in the total number of shares issued by the Company; or (iv) other capital or structural measures with the same effect.

At the reasonable discretion of the Supervisory Board, such financial compensation is preferably achieved by adjusting the number of stock options or PSUs earned over time and based on performance and/or the exercise price.

17.5.2.2.3 Total Target Compensation and Maximum Compensation

The compensation of the members of the Management Board should be commensurate with their duties and performance as well as the Company's situation and in line with market standards. The compensation system should provide incentives for the sustainable and long-term development of the Company as a whole and for the long-term commitment of the members of the Management Board. The Supervisory Board takes this into account when determining the target total compensation for each member of the Management Board. Successful Management Board work should be rewarded in an appropriate proportion so that the members of the Management Board participate in the positive development of the Company in the same way as the shareholders. In order to avoid taking inappropriate risks and to maintain an appropriate relationship to the situation and success of the Company, the compensation of the Management Board is limited by setting a maximum compensation (expense cap).

Target setting, target achievement and the compensation structure based on this are explained in the annual compensation report, so that the relationship between business success and Management Board compensation is clearly and comprehensibly presented to shareholders.

Total Target Compensation

Based on the compensation system, the Supervisory Board determines a target total compensation for each member of the Management Board for the upcoming financial year. The target total compensation corresponds to the sum of the fixed compensation, target STI and target LTI.

Maximum Compensation

In accordance with Section 87a para. 1 sentence 2 no. 1 German Stock Corporation Act (*Aktiengesetz*), the Supervisory Board determines a maximum compensation for the members of the Management Board, consisting of the amount for the fixed, non-performance-related remuneration, the amounts for fringe benefits and the maximum amounts for variable compensation (expense cap). It does not matter when the corresponding compensation element was paid out, but for which financial year it was granted.

The maximum compensation of the Management Board members for a financial year thus corresponds to the sum of the maximum inflows of all compensation components granted to the respective Management Board member in a financial year, whereby the time of inflow is irrelevant. The maximum compensation is fixed for each member of the Management Board. The possible capping of the amount exceeding the maximum compensation takes place at the time at which the long-term variable compensation would generally be paid out.

The amount paid out for the variable compensation components (STI and LTI) depends on ambitious performance targets. In addition, in accordance with the recommendations of the Corporate Governance Code, the vast majority of the compensation of Management Board members is granted in the form of long-term variable compensation in the form of stock options and/or PSUs, the payout amount of which can fall to zero (namely if the performance targets are not met). The maximum compensation therefore does not represent the compensation level targeted or deemed appropriate by the Supervisory Board, but merely an absolute maximum limit that can only be reached in the event of a very sharp rise in the share price.

The maximum compensation for a financial year – regardless of whether it is paid out in the financial year in question or at a later date – is €20 million for the Chairman of the Management Board and €10 million for all other members of the Management Board. For example, the value of the stock options granted under the LTI must be at least eight times the exercise price at the time the stock options are exercised, i.e., the share price of ADS must have increased eightfold at the time the options are exercised compared to the time of allocation. In addition, the demanding performance targets that are a prerequisite for exercising the stock options must be achieved.

The maximum compensation may deviate from the specified maximum compensation when a new member of the Management Board takes up office in the year of joining or the second year of appointment if, in exceptional cases, the Supervisory Board grants the new Management Board member payments on taking up office (sign-on bonus) to compensate for payments foregone from the previous employment relationship. In this case, the maximum compensation for this one financial year is increased by up to 50% for the Chairman of the Management Board and by up to 25% for ordinary members of the Management Board.

Any severance payments in the event of premature termination of Management Board activity and other special benefits that do not serve as consideration for the services of the Management Board member but may be granted by the Supervisory Board on an ad hoc basis (e.g., relocation costs, compensation payments for bonus losses at the previous employer, compensation for maternity leave) are not included in the maximum compensation and are not limited by it. Any payments to the members of the Management Board from third parties that are not subsidiaries of the Company (e.g. from shareholders) are also not included in the maximum compensation and are not subject to the requirements of this compensation system. Their disclosure in accordance with Section 162 para. 2 no. 1 of the German Stock Corporation Act (*Aktiengesetz*) remains unaffected.

17.5.2.3 Malus and Clawback Provisions for Variable Compensation

The service contracts of Management Board members and the terms and conditions of the stock option program and the PSUP contain malus and clawback provisions that entitle the Company to withhold or reclaim variable compensation components in full or in part in the event of a breach by the Management Board member concerned of internal company conduct guidelines or statutory obligations. Furthermore, new service contracts to be concluded or extended for members of the Management Board and the conditions of the stock option program will in future contain a provision according to which the members of the Management Board are obliged to repay variable compensation that has already been paid out if it transpires after payment that the basis for calculating the amount paid out was incorrect.

17.5.2.4 Compensation-related Legal Transactions

17.5.2.4.1 Terms of Management Board contracts

The service contracts of the members of the Management Board are concluded for the duration of their appointment, i.e., a maximum of five years, and are extended for the duration of each reappointment.

17.5.2.4.2 Conditions for Termination of Contract

Ordinary termination of Management Board service contracts is excluded. A Management Board service contract can be terminated by the Company or the Management Board member for good cause within the meaning of Section 626 of the German Civil Code (*Bürgerliches Gesetzbuch*) without observing a notice period.

If the appointment is terminated by mutual agreement with the consent of the Supervisory Board, the Management Board service contracts end prematurely at the time of the mutually agreed termination of the appointment. If the Supervisory Board revokes the appointment, the Management Board service contract ends prematurely at the end of an expiry period in accordance with Section 622 para. 2 of the German Civil Code (*Bürgerliches Gesetzbuch*).

Should a member of the Management Board become permanently incapacitated for work, their Management Board service contract shall end at the end of the quarter in which the permanent incapacity for work was established. Permanent incapacity to work exists if the Management Board member is expected to be unable to perform their duties for more than six months for health reasons and is not expected to regain their ability to work for a further six months.

17.5.2.4.3 Benefits on Termination of Service

In the event of termination of the Management Board service contract, any outstanding variable compensation components attributable to the period up to the termination of the contract are granted in accordance with the originally agreed targets and the due dates specified in the respective Management Board service contract.

If the Management Board member becomes permanently incapacitated for work during the term of the service contract, such member shall receive the portion of the fixed annual compensation attributable to the month in which the permanent incapacity for work is established and the following six months, but not beyond the original term of the service contract, despite premature termination of the service contract. In the event of termination of the service contract due to permanent incapacity for work, no severance payment shall be made.

This does not apply if the Management Board service contract is terminated without notice for a reason for which the Management Board member is responsible. In such a case, the Management Board member can no longer exercise the stock options or receive a settlement of PSUs they have earned. In addition, such member will not receive any short-term, performance-related variable compensation for the year in which the termination takes effect.

In the event of premature termination of the Management Board mandate due to the revocation of the appointment, the Management Board member shall receive a severance payment in the amount of the compensation expected to be owed by the Company for the remaining term of the Management Board service contract, up to a maximum of two years' compensation (severance payment cap). In the event of premature termination of the Management Board mandate due to a mutually agreed termination of the Management Board service contract, the total value of the benefits promised by the Company to the Management Board member as part of such a termination agreement should not exceed the amount of the compensation owed by the Company for the original remaining term of the Management Board service contract, but no more than the value of two years' remuneration.

If a Management Board member dies during the term of the Management Board service contract, such member's spouse or partner within the meaning of Section 1 of the German Civil Partnership Act (*Lebenspartnerschaftsgesetz*), or alternatively such member's dependent children as joint creditors, are entitled to the undiminished fixed annual salary for the month of death and the following three months, but no longer than until the end of the regular term of the Management Board service contract, and should also be entitled to the variable compensation earned by the Management Board member until his or death. There is neither a special right of termination in the event of a change of control nor a promise of benefits in the event of premature termination of a Management Board member's contract due to a change of control.

17.5.2.4.4 Sideline Activities of the Members of the Management Board

If a member of the Management Board holds Supervisory Board mandates within the BioNTech Group, such activity is fully compensated with the compensation as a member of the Management Board. If a member of the Management Board assumes Supervisory Board mandates outside the BioNTech Group, the Supervisory Board decides within the scope of approval whether and to what extent compensation is to be offset against the compensation of the Management Board member. The same applies to the assumption of group-internal Management Board mandates.

17.5.2.5 Share Ownership Guidelines

To further align the interests of the Management Board and shareholders and to strengthen the sustainable development of the Company, Share Ownership Guidelines are also part of the compensation system for the Management Board. These Share Ownership Guidelines oblige the members of the Management Board to acquire a significant number of shares in the Company by the end of a four-year build-up phase following their appointment or the entry into force of the Share Ownership Guidelines on January 1, 2025. The members of the Management Board can build up this shareholding, for example by purchasing shares or by vesting variable remuneration, provided this consists of shares. At the end of the build-up phase, the Chairman of the Management Board should hold shares amounting to 200% of the annual fixed gross compensation (excluding fringe benefits) and the other members of the Management Board should hold shares amounting to 100% of the annual fixed gross compensation (excluding fringe benefits). This value-based number of shares must be proven annually after the end of the build-up phase for as long as the respective Management Board member is appointed. If such member is then unable to provide evidence of the value of the shares held, the Supervisory Board may deduct the missing difference in value from the variable compensation components to be granted or determined. In individual cases, the Supervisory Board may decide to deviate from the conditions of the stock option program at its reasonable discretion, taking into account the individual circumstances (*e.g.*, due to restrictions on the acquisition of shares as a result of contractual, internal company or statutory provisions). If the value of the share portfolio falls below the specified amount as a result of a fall in the share price, the members of the Management Board are also obliged to purchase additional shares.

17.5.2.6 Total Compensation in the Years 2024 and 2023

The total compensation granted or owed to all members of the Management Board who were in office during the years ended December 31, 2024 and 2023, including Jens Holstein who as previously planned and announced retired at the end of his term on June 30, 2025, and Ryan Richardson who as previously planned stepped down from the Management Board on September 30, 2025, based on the compensation system in effect until December 31, 2024, is presented in the table below.

in thousands €	Prof. Ugur Sahin, M.D.	Annemarie Hanekamp	Jens Holstein	Sean Marett[10]	Sierk Poetting, Ph.D.	Ryan Richardson	James Ryan, Ph.D.[2]	Prof. Özlem Türeci, M.D.
Fixed compensation[1]								
2024	700	275[11]	550	275	550	550	550	550
2023	700	—	550	550	550	550	183	550
Fringe benefits [3]								
2024	5	64	5	15	19	27	109	—
2023	6	—	5	12	5	26	—	—
Short-term incentive – first installment[4]								
2024	130	69[12]	111	150[14]	111	111	111	111
2023	158	—	135	135	135	135	45	135
Short-term incentive – second installment [5]								
2024	130	69[12]	111	—[14]	111	111	111	111
2023	158	—	135	135	135	135	45	135
Other variable compensation								
2024	—	1,250[13]	—	—	—	—	—	—
2023	—	—	600[7]	—	—	—	180[6]	—

in thousands €	Prof. Ugur Sahin, M.D.	Annemarie Hanekamp	Jens Holstein	Sean Marett[10]	Sierk Poetting, Ph.D.	Ryan Richardson	James Ryan, Ph.D.[2]	Prof. Özlem Türeci, M.D.
Share-based payments (incl. long-term incentive)[8]								
2024								
Management Board Grant - LTI	4,386	—	—	—	1,774	1,785	—	1,754
CEO Grant 2019	259,531	—	—	—	—	—	—	—
2023								
ESOP 2018[9]	—	—	—	19,289	—	—	—	—
Total								
2024	**264,882**	**1,727**	**777**	**440**	**2,565**	**2,584**	**881**	**2,526**
2023	**1,022**	**—**	**1,425**	**20,121**	**825**	**846**	**453**	**820**

* The concept of compensation being granted or owed is described in footnote 1 to the table in section "*17.5.1 Compensation of the Members of the Supervisory Board*".

(1) For James Ryan, a part of the fixed compensation was paid by BioNTech UK Limited, a subsidiary of BioNTech SE. Approximately 30% of his total compensation is attributable to his position as a member of the Management Board and approximately 70% is attributable to his position as a director of BioNTech UK Limited.

(2) James Ryan's compensation for the year ended December 31, 2023 was granted on a pro rata basis starting as of his appointment to the Management Board on September 1, 2023. In addition, there is a pension scheme which James Ryan benefits from under his service agreement with BioNTech UK Limited. The contribution is split into 6% by the Employee and 9% by the Employer. It is a salary sacrifice scheme.

(3) Includes social security, health and additional insurance, company bike and travel expenses. Other fringe benefits which are integral to the performance of business duties, such as costs for security services, are not included in the amount.

(4) The STI in a given year is always paid out in two installments over two years. The first STI installment for the year ended December 31, 2024, will be paid out in April 2025, the month after the approval of the 2024 consolidated financial statements. This installment was considered granted and owed in 2024, the year in which the activity to which the compensation relates was performed. The first STI installment for the year ended December 31, 2023, was considered granted and owed in 2023 and was paid out in April 2024.

(5) The second STI installment for the year ended December 31, 2024 was also considered granted and owed in 2024, as the Management Board had already completed the activity to which it relates. It will be paid out in February 2026 (subject to an adjustment due to the share-price development). The second STI installment for the year ended December 31, 2023, was considered granted and owed in 2023 and was paid out in February 2025 with adjustments due to the share-price development. The amounts ultimately paid were as follows: Ugur Sahin €183 thousand, Jens Holstein €157 thousand, Sean Marett €157 thousand, Sierk Poetting €157 thousand, Ryan Richardson €157 thousand, James Ryan €52 thousand and Özlem Türeci €157 thousand.

(6) During the year ended December 31, 2023, James Ryan received a one-time signing cash payment of €180,000 as part of his appointment to the Management Board. The one-time signing cash payment provided compensation in lieu of participation in the LTI 2023 program, as the awards were allocated before his appointment and a pro rata allocation for 2023 would not have been permitted under the annual general meeting authorizations then in force. Under those authorizations, which were modified by the May 17, 2024 annual general meeting, ESOPs could only be issued within the first six months of each calendar year. To further strengthen his commitment to the Company, James Ryan used £50,000 (net of costs and expenses) to purchase BioNTech shares during the year ended December 31, 2024.

(7) During the year ended December 31, 2023, upon the recommendation of the Compensation, Nomination and Corporate Governance Committee, the Supervisory Board approved a special payment in the gross amount of €600,000 to Jens Holstein, of which €150,000 (net of costs and expenses) was used to purchase 1,620 BioNTech shares during the year ended December 31, 2023.

(8) Explanations of our share-based payment arrangements are given in Note 16 to our Audited Consolidated Financial Statements 2024. The benefits from our share-based payment arrangements (including long-term incentive) are considered granted and owed when the awards are settled. During the years ended December 31, 2023 and 2024, this principle applied to the option rights granted under the ESOP 2018 Program, CEO Grant 2019 and LTI 2020 Program as a result of their exercise and settlement.

(9) The amount shown is related to the option rights granted one-time under the ESOP 2018 Program. The table shows the implied market value calculated using the closing price of an ADS of BioNTech on Nasdaq on the last day preceding the exercise date converted from USD to Euro using the exchange rate published by the German Central Bank (Deutsche Bundesbank) on the same day, as well as applying the effective exercise price and maximum cap mechanism. The implied market value may vary from the benefit in kind. They are not to be seen as cash payments to the Management Board, as the exercise was settled by delivering ADSs.

(10) Sean Marett's compensation for the year ended December 31, 2024, was granted on a pro rata basis through his retirement with effect as of June 30, 2024.
(11) Annemarie Hanekamp was appointed to the Management Board as Chief Commercial Officer (CCO) with effect as of July 1, 2024. Her compensation for the year ended December 31, 2024, was granted on a pro-rata basis.
(12) For the year ended December 31, 2024, Annemarie Hanekamp was granted a guaranteed pro rata bonus in the amount of 50% of the maximum amount, i.e., €137,500. The first half of the corresponding net amount is to be paid out in April 2024 and the second half in January 2026, irrespective of the share price performance.
(13) The Supervisory Board granted Annemarie Hanekamp a one-time signing bonus of €1,750,000 as of her appointment. Out of this amount, €1,250,000 was paid as a cash bonus in July 2024. The remainder of €500,000 will be granted in shares (and considered owed) in July 2028 or, at the earliest possible date after a potential blackout period, provided she is still a Management Board Member on June 30, 2028.
(14) For the year ended December 31, 2024, Sean Marett was granted a guaranteed pro rata bonus in the amount of 100% of the maximum amount pursuant to his separation agreement, that was paid out in June 2024. For further information, see below.

As part of Sean Marett's retirement from the Management Board with effect as of June 30, 2024, he and the Supervisory Board entered into a separation agreement. Pursuant to this separation agreement, the following payments apply subsequently to his termination and thus as a former Management Board member:

- a severance payment of €275,000 payable in monthly installments equivalent to the annual base fixed salary for the remainder of his original term of appointment until December 31, 2024;
- an additional payment of €39,000 in respect of the 2024 STI to compensate him for the difference between the 2024 target achievement of Management Board members of 74% (additional payment is already reflected in the above total compensation granted and owed table) and his guaranteed pro rata STI bonus in the amount of 100% of his maximum amount pursuant to his separation agreement; and
- a grant of 5,760 phantom options representing one-quarter of the 2024 LTI award, which are subject to the same conditions and waiting period that apply to the 2024 LTI awards granted to the Management Board; all previous granted option rights will be dealt with in accordance with the LTI terms.

In addition, to ensure a smooth transition of services, Sean Marett entered into a 12-month consultancy agreement with the Company on July 1, 2024, resulting in a compensation of €477,030 during the year ended December 31, 2024.

17.5.3 Share-Based Payment Arrangements

The table below provides an overview of the share options and other share-based payment instruments allocated to the Management Board and outstanding as of September 30, 2025, the most recent practicable date, including to Jens Holstein who as previously planned and announced retired at the end of his term on June 30, 2025, and Ryan Richardson who as previously planned stepped down from the Management Board on September 30, 2025 (where relevant, exercise prices have been converted on the basis of December 31, 2024 foreign exchange rates).

	Grant Date / Allocation Date	Number of Ordinary Shares Underlying Share Options / Number of Phantom Share Options /PSUs	Option Exercise Price (€)(12)	Earliest Option Exercise Date / PSU Settlement Date(10)	Option Expiration Date	Name of the Program
Prof. Ugur Sahin, M.D.	10/9/2019(1)	—	13.74	10/9/2023	10/9/2029	CEO Grant 2019
	2/13/2020(2)	—	29.63	2/13/2024	2/13/2030	LTI 2020(11)
	5/12/2021(3)	17,780	178.29	5/12/2025	5/12/2031	LTI 2021(11)
	5/31/2022(4)	19,997	146.40	5/31/2026	5/31/2032	LTI 2022(11)
	5/22/2023(5)	38,506	109.67	5/22/2027	5/22/2033	LTI 2023(11)
	8/26/2024(6)	53,233	75.91	8/26/2028	8/26/2034	LTI 2024(11)
	5/28/2025(7)	23,434	93.35	5/28/2029	5/28/2035	LTI 2025(11)
	5/28/2025(7)	18,747 (PSUs)	n/a	5/28/2029	n/a	LTI 2025(11)
Jens Holstein(13)	5/17/2021(3)	6,463	179.83	5/17/2025	5/17/2031	LTI 2021(11)
	7/1/2021(9)	4,246	n/a(8)	7/1/2025(9)	n/a(9)	Signing Bonus

	Grant Date / Allocation Date	Number of Ordinary Shares Underlying Share Options / Number of Phantom Share Options /PSUs	Option Exercise Price (€)[12]	Earliest Option Exercise Date / PSU Settlement Date[10]	Option Expiration Date	Name of the Program
	5/31/2022[4]	10,998	146.40	5/31/2026	5/31/2032	LTI 2022[11]
	5/22/2023[5]	9,208	109.67	5/22/2027	5/22/2033	LTI 2023[11]
	8/26/2024[6]	—	75.91	8/26/2028	8/26/2034	LTI 2024[11]
Sean Marett[14]	2/13/2020[2]	38,968	29.63	2/13/2024	2/13/2030	LTI 2020[11]
	5/12/2021[3]	5,334	178.29	5/12/2025	5/12/2031	LTI 2021[11]
	5/31/2022[4]	7,332	146.40	5/31/2026	5/31/2032	LTI 2022[11]
	5/22/2023[5]	4,604	109.67	5/22/2027	5/22/2033	LTI 2023[11]
Sierk Poetting, Ph.D.	13/2/2020[2]	—	29.63	2/13/2024	2/13/2030	LTI 2020[11]
	5/12/2021[3]	7,112	178.29	5/12/2025	5/12/2031	LTI 2021[11]
	5/31/2022[4]	14,664	146.40	5/31/2026	5/31/2032	LTI 2022[11]
	5/22/2023[5]	18,416	109.67	5/22/2027	5/22/2033	LTI 2023[11]
	8/26/2024[6]	25,459	75.91	8/26/2028	8/26/2034	LTI 2024[11]
	5/28/2025[7]	11,047	93.35	5/28/2029	5/28/2035	LTI 2025[11]
	5/28/2025[7]	8,838(PSUs)	n/a	5/28/2029	n/a	LTI 2025[11]
Ryan Richardson[15]	2/13/2020[2]	—	29.63	2/13/2024	2/13/2030	LTI 2020[11]
	5/12/2021[3]	6,163	178.29	5/12/2025	5/12/2031	LTI 2021[11]
	5/31/2022[4]	5,598	146.40	5/31/2026	5/31/2032	LTI 2022[11]
	5/22/2023[5]	9,208	109.67	5/22/2027	5/22/2033	LTI 2023[11]
	8/26/2024[6]	6,365	75.91	8/26/2028	8/26/2034	LTI 2024[11]
James Ryan, Ph.D.[8]	12/15/2020	—	n/a	12/15/2024	n/a	LTI 2020 (EEP)
	12/10/2021	313	n/a	12/10/2025	n/a	LTI 2021 (EEP)
	12/9/2022	740	n/a	12/9/2026	n/a	LTI 2022 (EEP)
	12/8/2023	750	n/a	12/8/2027	n/a	LTI 2023 (EEP)
	8/26/2024[6]	25,459	75.91	8/26/2028	8/26/2034	LTI 2024[11]
	5/28/2025[7]	11,047	93.35	5/28/2029	5/28/2035	LTI 2025[11]
	5/28/2025[7]	8,838(PSUs)	n/a	5/28/2029	n/a	LTI 2025[11]
Prof. Özlem Türeci, M.D.	2/13/2020[2]	—	29.63	2/13/2024	2/13/2030	LTI 2020[11]
	5/12/2021[3]	7,112	178.29	5/12/2025	5/12/2031	LTI 2021[11]
	5/31/2022[4]	14,664	146.40	5/31/2026	5/31/2032	LTI 2022[11]
	5/22/2023[5]	18,416	109.67	5/22/2027	5/22/2033	LTI 2023[11]
	8/26/2024[6]	25,459	75.91	8/26/2028	8/26/2034	LTI 2024[11]
	5/28/2025[7]	11,633	93.35	5/28/2029	5/28/2035	LTI 2025[11]
	5/28/2025[7]	9,306(PSUs)	n/a	5/28/2029	n/a	LTI 2025[11]
Annemarie Hanekamp	5/28/2025[7]	11,047	93.35	5/28/2029	5/28/2035	LTI 2025[11]
	5/28/2025[7]	8,838(PSUs)	n/a	5/28/2029	n/a	LTI 2025[11]

n/a = not applicable.

(1) Options vested in four equal installments on October 9 of 2020, 2021, 2022 and 2023. The entire award became exercisable in 2023. The options were exercised in 2024.

(2) Options vested in four equal installments on February 13 of 2021, 2022, 2023 and 2024, are now exercisable following the expiry of the waiting period on February 13, 2024, and can only be exercised during defined exercise windows under our ESOP. Apart from Sean Marett, who did not exercise the options during 2024, all other options were exercised by the respective Management Board members.

(3) Phantom share options were issued which vest in four equal installments on May 12 of 2022, 2023, 2024 and 2025 for all Management Board members except Jens Holstein, and in the case of Jens Holstein, vest in four equal installments on May 17 of the same years. The options will not become exercisable before the expiry of the waiting period on May 12, 2025 and May 17, 2025, respectively, and can only be exercised during defined exercise windows.

(4) Phantom share options were issued which vest in four equal installments on May 31 of 2023, 2024, 2025 and 2026 for all Management Board members. These phantom options will not become exercisable before the expiry of the waiting period on May 31, 2026, and can only be exercised during defined exercise windows.

(5) Options vest in four equal installments on May 22 of 2024, 2025, 2026 and 2027. The options will not become exercisable before the expiry of the waiting period on May 22, 2027, and can only be exercised during defined exercise windows.

(6) Options vest in four equal installments on August 26 of 2025, 2026, 2027 and 2028. The options will not become exercisable before the expiry of the waiting period on August 26, 2028, and can only be exercised during defined exercise windows.

(7) Options vest in four equal installments on May 28 of 2026, 2027, 2028 and 2029. The options will not become exercisable before the expiry of the waiting period on May 28, 2029, and can only be exercised during defined exercise windows.

(8) As James Ryan was not part of the Management Board at the time the 2023 LTI award was allocated, he did not receive any options under this plan. Prior to his appointment, RSUs were granted to him under the BioNTech 2020 Employee Equity Plan (EEP). RSUs issued under the LTI 2020 (EEP), LTI 2021 (EEP), LTI 2022 (EEP) and LTI 2023 (EEP) programs vest annually in equal installments over four years commencing in December 2021, December 2022 and December 2023 respectively and will be settled after a waiting period of four years.

(9) In connection with Jens Holstein's appointment to the Management Board as Chief Financial Officer on July 1, 2021, the Supervisory Board granted him a one-time signing bonus of €800,000 in the form of 4,246 phantom shares. The phantom shares vested in four equal installments on July 1 of 2022, 2023, 2024 and June 30, 2025 and was settled in cash in July, 2025 for the sum of €386,526.22. The cash payment was subject to an effective settlement closing price cap, which meant that the settlement closing price would be adjusted to ensure that the current price of an ADS as of the settlement date did not exceed 800% of the cash payment, which in respect of all phantom shares should not have exceeded €6.4 million.

(10) Indicates the end of the respective waiting periods. Additional restrictions with respect to exercise windows may apply.

(11) Management Board Grant (Long-Term Incentive) in the respective years.

(12) All options are subject to an effective exercise price cap. This means that the exercise price shall be adjusted to ensure that the current price of an ADS as of the exercise date does not exceed 800% of the exercise price. For the ESOP 2018 Program and the CEO Grant 2019, the maximum economic benefit receivable for any exercised option was capped at $240.00 and the effective exercise price was capped at a Euro amount equivalent to $30.00. For the LTI 2020, the maximum economic benefit receivable is capped at $246.24, and the effective exercise price is capped at a Euro amount equivalent to $30.78. For the phantom share options issued under the LTI 2021 and 2022 programs and the options issued under the LTI 2023 and 2024 programs, the maximum compensation that each member is entitled to receive, together with other compensation components received in the respective grant year, shall not exceed €20.0 million for Ugur Sahin and €10.0 million for all others.

(13) The options stated reflect the number of options awarded to Jens Holstein under each Program that vested as of June 30, 2025 at the end of his term and planned retirement. In addition, pursuant to his 2024 option award agreement, as amended, one-quarter of the LTI 2024 award (being 6,365 options) is treated as fully vested effective August 26, 2025, notwithstanding his retirement on June 30, 2025, but will not become exercisable before the expiry of the waiting period on May 28, 2029, and can only be exercised during defined exercise windows. All other options to which Jens Holstein was contractually entitled were immediately forfeited at the end of his term.

(14) Upon Sean Marett's resignation from the Management Board with effect as of June 30, 2024, the LTI 2024 grant relating to the first six months of 2024 to which he was contractually entitled was immediately forfeited due to his resignation. As part of Sean Marett's retirement from the Management Board, he and the Supervisory Board entered into a separation agreement, details of which are outlined in section "*17.5.2.6 Total Compensation in the Years 2024 and 2023*".

(15) Upon Ryan Richardson's departure from the Management Board on September 30, 2025, the unvested portions of his LTI 2022, LTI 2023 and LTI 2024 grants forfeited.

During the last twelve months, James Ryan acquired 636 ADSs under the LTI 2020 Employee RSU Program at no exercise price or cash cost. In comparison, the implied price per Offer ADS will range between $126.55 and $84.37, depending on the final Exchange Ratio.

For information on LTI for the Management Board members under their service agreements in effect until December 31, 2024 as well as the Chief Executive Offer Grant granted to Prof. Ugur Sahin in 2019 which was settled in August 2024, see Notes 16.2 and 16.4 to our Audited Consolidated Financial Statements 2024.

17.6 Shareholdings of the Members of the Management Board and the Supervisory Board in the Company

For information on the shareholdings, restrictions to shareholdings and options of certain members of the Management Board and the Supervisory Board in the Company, see section "*15 Shareholder Structure*", "*17.5.2.5 Share Ownership Guidelines*" and "*17.5.3 Share-Based Payment Arrangements"*.

17.7 Certain Information on the Members of the Management Board and the Supervisory Board, Conflict of Interest

Except as disclosed above with regard to Prof. Ugur Sahin, M.D. and Prof. Özlem Türeci, M.D., there are no family relationships between the members of the Management Board and Supervisory Board, either amongst themselves or in relation to the members of the relevant other body.

During the last five years, no current member of the Management Board or Supervisory Board has been:

- convicted of fraudulent offenses; or
- involved in or associated with any bankruptcy, receiverships, liquidations or companies put into administration, except (i) as disclosed in "*17.3.2 Members of the Supervisory Board*", (ii) with respect to solvent liquidations of Group companies in which members of the Management Board served as managing directors, and (iii) with respect to Helmut Jeggle and Michael Motschmann, as members of the supervisory board of APK AG (Michael Motschmann until 2023), which carried out an insolvency plan procedure (*Insolvenzplanverfahren*) under German law in 2024; or

- the subject of any official public incrimination and/or sanctions involving such persons by statutory or regulatory authorities (including designated professional bodies) or disqualified by a court from acting as a member of the administrative, management or supervisory bodies of an issuer or from acting in the management or conduct of the affairs of any issuer.

As of the date of the Prospectus, to the best of the Company's knowledge, certain members of the Management Board and Supervisory Board (i.e., Prof. Ugur Sahin, M.D., Annemarie Hanekamp, Sierk Poetting, Ph.D., James Ryan, Ph.D. Prof. Özlem Türeci, M.D. Helmut Jeggle, Ulrich Wandschneider, Ph.D., Baroness Nicola Blackwood, Prof. Anja Morawietz, Ph.D., Michael Motschmann, Prof. Rudolf Staudigl, Ph.D.) hold either directly or indirectly shares and/or ADSs of the Company as set forth in section "*15 Shareholder Structure*". To the extent the members of the Management Board or the Supervisory Board indirectly participate in the results of the Company, they may, separately from their positions in the respective governing body, have financial interests as a result of their participations.

The member of the Supervisory Board Helmut Jeggle has held, and continues to hold functions, and management positions at the Company's (indirect) controlling shareholders and/or at certain affiliates of the (indirect) controlling shareholders and is therefore considered to be an affiliate of the controlling shareholders, which constitutes a potential conflict of interest.

Accordingly, the interests of the relevant members of the Management Board and the Supervisory Board members may not be aligned with those of the Company or the Company's other shareholders, which constitutes a potential conflict of interests in respect of their duties as members of the Management Board or, as applicable, Supervisory Board to act in the best interests of the Company. However, it should be noted that according to applicable law, board members must not act in their own interests or in the interests of persons or companies they have a close relationship with if these interests conflict with those of the Company or if such interests are used to attract business opportunities for such members that would otherwise have gone to the Company.

Except as described above, there are no actual or potential conflicts of interest between any duties of the members of the Management Board and the Supervisory Board to the Company and their private interests and/or other duties.

None of the members of the Management Board or the Supervisory Board has entered into a service agreement with a company of the Group that provides for benefits upon termination of employment or office, except as stated otherwise in this Prospectus.

17.8 German Corporate Governance Code

The German Corporate Governance Code was originally published by the German Federal Ministry of Justice (*Bundesministerium der Justiz*) in 2002. The version currently in effect, dated April 28, 2022, was published in the German Federal Gazette (*Bundesanzeiger*) on June 27, 2022. The Corporate Governance Code contains principles (*Grundsätze*), recommendations (*Empfehlungen*) and suggestions (*Anregungen*) relating to the management and supervision of German companies that are listed on a stock exchange. It follows internationally and nationally recognized standards for good and responsible corporate governance. The purpose of the Corporate Governance Code is to make the German system of corporate governance transparent for investors. The Corporate Governance Code includes corporate governance principles, recommendations and suggestions with respect to shareholders and shareholders' meetings, the management and supervisory boards, transparency, accounting policies and auditing.

There is no obligation to comply with the recommendations or suggestions of the Corporate Governance Code. The German Stock Corporation Act (*Aktiengesetz*) requires only that the management board and supervisory board of a German company listed on a trading facility (such as a stock exchange) which is regulated and supervised by government authorities issue an annual declaration that either (i) states that the company has complied with the recommendations of the Corporate Governance Code or (ii) lists the recommendations that the company has not complied with and explains its reasons for deviating from the recommendations of the Corporate Governance Code (*Entsprechenserklärung*). In addition, a listed company is also required to state in this annual declaration whether it intends to comply with the recommendations or list the recommendations it does not plan to comply with in the future. These declarations must be made accessible to shareholders at all times. If the company changes its policy on certain recommendations between such annual declarations, it must disclose this fact and explain its reasons for deviating from the recommendations. Non-compliance with suggestions contained in the Corporate Governance Code need not be disclosed.

As of the date of the Prospectus, the Company complies with, and will continue to comply with them in the future, all recommendations of the Corporate Governance Code, apart from the following:

- *Recommendation B.3* – According to Recommendation B.3 of the Corporate Governance Code, the initial appointment of Management Board members shall be for a period of no more than three years. In deviation from this, the Management Board member Annemarie Hanekamp was appointed with effect from July 1, 2024 for a period of four years. With regard to Ms. Hanekamp's many years of experience and individual qualifications, the Company considers an initial appointment of four years to be necessary and appropriate. Furthermore, the Supervisory Board considered the initial appointment for a period of four years to be in the best interest of the Company in order to be able to implement long-term strategic corporate goals and decisions, particularly in the commercial area.
- *Recommendation C.7* – According to Recommendation C.7 of the Corporate Governance Code, it is recommended that more than half of the members of the Supervisory Board be independent of the Company and the Management Board. Accordingly, a Supervisory Board member is independent of the Company and its Management Board if he or she has no personal or business relationship with the Company or its Management Board that could constitute a material and not merely temporary conflict of interest. In assessing independence, the length of service on the Supervisory Board shall be taken into account, among other factors. Despite the fact that two out of six members of the Supervisory Board have been on the Supervisory Board for longer than the twelve years recommended by the Corporate Governance Code, all members of the Supervisory Board are considered to be independent. The Supervisory Board considers it advantageous and essential for the Company to maintain the knowledge and experience currently available on the Board. This includes many years of knowledge of the Company and its industry as well as comprehensive professional knowledge in the areas of finance, economics, science and capital markets, which is particularly important in view of the current, steady global growth and change of the Company. Due to the long-standing relationship with the Company and the existing economic independence from the Company, as well as the absence of other concerns that could cause possible conflicts of interest, the length of membership of the two Supervisory Board members Mr. Helmut Jeggle and Mr. Michael Motschmann does not conflict with their respective independence (see Recommendation C.8 of the Corporate Governance Code).

17.9 BioNTech Employees and Employee Participation

17.9.1 Employees

As of December 31, 2024, the Group had 6,772 full-time equivalent employees working for it, of whom 1,282 hold a doctoral degree or higher. The following tables provide an overview of employee full-time equivalents broken down by function and by the regions of Europe, North America, Asia and Australia and Africa.

Full-time equivalents	Clinical Research & Development	Scientific Research & Development	Operations	Quality	Supporting Functions	Commercial & Business Development	∑
Europe	597	1,543	1,075	419	1,856	182	5,672
North America	126	484	18	21	139	24	811
Asia and Australia	12	3	11	5	68	1	100
Africa	—	—	145	7	37	—	189
Total as of December 31, 2024	**735**	**2,030**	**1,249**	**452**	**2,100**	**207**	**6,772**
Europe	486	1,555	1,440	450	1,184	185	5,299
North America	90	440	7	7	109	7	660

Asia	—	—	24	—	4	—	28
Africa	—	19	59	—	68	—	146
Total as of December 31, 2023	**576**	**2,014**	**1,530**	**457**	**1,365**	**192**	**6,133**
Europe	243	1,102	1,300	384	924	140	4,093
North America	—	356	—	—	76	—	432
Asia	2	—	—	—	3	—	5
Total as of December 31, 2022	**245**	**1,458**	**1,300**	**384**	**1,003**	**140**	**4,530**

As of June 30, 2025, the Group had 7,216 full-time equivalent employees working for us (excluding interns, temporary employees and inactive employees). This number has not materially changed until the date of this Prospectus.

None of the Group's employees has engaged in any labor strikes. The collective labor agreements of the chemical industry and related industries are applied at the Marburg site. The Group has works councils at Idar-Oberstein, Mainz, Marburg, Munich, Vienna and Berlin (JPT Peptide Technologies GmbH) sites as well as a group works council (*Konzernbetriebsrat*). Further, the Group maintains several works agreements (*Betriebsvereinbarungen*) and group works agreements (*Konzernbetriebsvereinbarungen*) with respect to certain topics at the Idar-Oberstein, Mainz, Marburg and Berlin (JPT Peptide Technologies GmbH) sites. The relationship with the employees of the Group are considered to be positive and no major labor disputes have been experienced.

For the Company's plans to optimize its manufacturing network and decrease its workforce, see section "*11.2.2 Strategic Outlook*".

17.9.2 Employee Participation Programs

BioNTech offers its employees participation in the Company's equity through various employee participation programs, including the BioNTech 2020 Employee Equity Plan for employees outside North America and the BioNTech 2020 Restricted Stock Unit Plan for North America Employees (Cash-Settled) for employees in North America (in each case established in 2020) and the BioNTech 2024 North America Employee Participation Plan for employees in North America, the 2024 Non-North America Employee Participation Plan for employees outside of North America and the French Qualifying Sub-Plan to the 2024 Non-North America Employee Participation Plan for certain French employees as part of the acquisition of InstaDeep (in each case established in 2024) and the Employee Stock Ownership Plan for certain selected employees and the Management Board.

Detailed information on BioNTech's employee participation programs is set forth in Note 16 to our Audited Consolidated Financial Statements 2024.

18 TAXATION WARNING AND MATERIAL TAX CONSEQUENCES

The tax laws of any jurisdiction with authority to impose taxes on the Company's, CureVac's and/or New Topco's shareholders and the tax laws of the Company's country of incorporation (i.e., Germany) may have an impact on the tax consequences of the Offer, income received from the American Depositary Shares and the underlying ordinary shares as well as any post-offer reorganization measures.

18.1 Material German Tax Considerations

The following discussion addresses certain German tax consequences of acceptance, or non-acceptance, of the Offer and of acquiring, owning or disposing of the ADSs. This discussion is based on domestic German tax laws, including, but not limited to, circulars issued by German tax authorities, which, e.g., are not binding on the German courts, and applicable double taxation treaties. It is based upon tax laws in effect as of the date of this Prospectus. These laws are subject to change, possibly with retroactive effect. For example, certain member states of the European Union are considering introducing a financial transaction tax (*Finanztransaktionssteuer*) which, if introduced, may also be applicable on sales and/or transfer of ADSs. There is no assurance that German tax authorities will not challenge one or more of the tax consequences described in this section. The following discussion does not address the German tax consequences of the acceptance, or non-acceptance, of the offer and of acquiring, owning or disposing of the BioNTech ADSs for CureVac shareholders that currently hold 10% or more of the shares in CureVac.

In addition, this discussion is based upon the assumption that each obligation in the deposit agreement and any related agreement will be performed in accordance with its terms. It does not purport to be a comprehensive or exhaustive description of all German tax considerations that may be of relevance in the context of acceptance, or non-acceptance, of the Offer and of acquiring, owning, or disposing of ADSs.

The tax information presented in this section is not a substitute for tax advice. Investors should consult their tax advisors regarding the German tax consequences of the acceptance, or non-acceptance, of the Offer and regarding acquiring, owning or disposing of the ADSs in light of their particular circumstances, including the effect of any state, local, or other foreign or domestic laws or changes in tax law or interpretation. The same applies with respect to the rules governing the refund of any German dividend withholding tax (*Kapitalertragsteuer*) withheld. Only an individual tax consultation can appropriately account for the particular tax situation of each investor.

Based on the circular issued by the German Federal Ministry of Finance (*BMF-Schreiben*), dated May 24, 2013, reference number IV C 1-S 2204/12/10003, as amended by the circular dated December 18, 2018 (reference number IV C 1-S 2204/12/10003), in respect of the taxation of American Depositary Receipts, or ADRs, on domestic shares, or the "**ADR Tax Circular**", for German tax purposes, the ADSs should, in light of the ADR Tax Circular, represent a beneficial ownership interest in the underlying shares of the Company and qualify as ADRs for the purpose of the ADR Tax Circular. If the ADSs qualify as ADRs under the ADR Tax Circular, dividends would accordingly be attributable to holders of the ADSs for German tax purposes, and not to the legal owner of the ordinary shares (i.e., the financial institution on behalf of which the ordinary shares are stored at a domestic depository for the ADS holders). Furthermore, holders of the ADSs should be treated as beneficial owners of the shares in the Company with respect to capital gains. However, investors should note that circulars published by the German tax authorities (including the ADR Tax Circular) are not, e.g., binding on German courts, including German tax courts, and it is unclear whether a German court would follow the ADR Tax Circular in determining the German tax treatment of the ADSs. For the purpose of this German tax section, it is assumed that the ADSs qualify as ADRs within the meaning of the ADR Tax Circular. The following tax considerations focus on certain German tax aspects for holders of ADSs.

In light of the fact that the ADS represent a beneficial ownership interest in the underlying shares of the Company, the following considerations should generally apply *mutatis mutandis* to shareholders who exercise their right to receive the underlying shares of the Company.

18.1.1 Material German Income Tax Consequences of the Offer and the Post-Offer Reorganization for CureVac Shareholders

18.1.1.1 Income and dividend withholding tax aspects for CureVac Shareholders who tender their CureVac Shares in the Offer

18.1.1.1.1 Taxes on Income and Capital Gains

It is assumed for all purposes herein that CureVac is tax resident in Germany at all relevant points in time when taxable events may occur.

German tax resident CureVac Shareholders

CureVac Shares held as Private Assets

As a general rule, for CureVac Shareholders holding their shares as private assets (*Privatvermögen*) who tendered their CureVac Shares in the Offer, such exchange constitutes a taxable disposal of the tendered CureVac Shares. The consideration offered in the Offer, i.e., the market value of the BioNTech ADSs (plus any cash in lieu of fractional BioNTech ADSs), constitutes the gross capital income. From this tax base the disposal costs and the acquisition costs for the CureVac Shares are to be deducted. The difference, i.e., the capital gain, is subject to taxation.

Since 2021, the basis for the calculation of the solidarity surcharge (*Solidaritätszuschlag*) has been reduced for certain individual persons being subject to tax assessments (other than withholding taxes), and in certain cases, the solidarity surcharge has been abolished. However, the abolition or reduction of the solidarity surcharge is not applicable to corporations. In addition, the abolition or reduction of the solidarity surcharge will not affect withholding taxes. Solidarity surcharge will still be levied at 5.5% on the full withholding tax amount and withheld accordingly. There will not be any separate refund of such withheld solidarity surcharge (regardless of the aforementioned exemption limits) in case the withholding tax cannot be refunded either.

For shareholders, or in the case of a gratuitous transfer, the shareholder's legal predecessor, who directly or indirectly have held less than 1% of the share capital of CureVac at any time during the five years preceding the exchange of CureVac Shares for BioNTech ADSs, such exchange of CureVac Shares into BioNTech ADSs does not lead to German income tax or withholding tax. Since there is no explicit administrative guidance or case law in relation to ADSs, there is a risk that the German tax authorities or German tax courts take a deviating view.

The receipt of cash in lieu of fractional BioNTech ADSs would generally be subject to a German withholding tax at a rate of 25% plus solidarity surcharge of 5.5%, resulting in an aggregate withholding tax of 26.375% (plus church tax, if any).

If a shareholder, or in the case of a gratuitous transfer, the shareholder's legal predecessor, directly or indirectly has held at least 1% of the share capital of CureVac at any time during the five years preceding the exchange of CureVac Shares for BioNTech ADSs, the rules applicable to the income taxation of the exchange of CureVac Shares that are held as business assets will apply correspondingly (see section "*18.1.1.1.1 Taxes on Income and Capital Gains – Resident CureVac Shareholders – CureVac Shares held as Business Assets by Individual Shareholders (Sole Proprietors)*" below).

CureVac Shares held as Business Assets by Individual Shareholders (Sole Proprietors)

For individuals holding CureVac Shares as business assets, the exchange of CureVac Shares for BioNTech ADSs (and cash in lieu of fractional BioNTech ADSs) in the Offer will constitute a taxable event. Generally, 60% of capital gains derived from the exchange of CureVac Shares (i.e., the market value of the BioNTech ADSs (plus any cash in lieu of fractional BioNTech ADSs) minus the disposal and acquisition costs) are taxable at the respective shareholder's income tax rate (plus solidarity surcharge of 5.5% thereon and church tax, if any).

Correspondingly, only 60% of the business expenses related to such a gain (subject to general restrictions on deductions, if any) and only 60% of any capital loss are tax deductible.

If the CureVac Shares are attributable to a permanent establishment of a trade or business in Germany, 60% of the capital gains are also subject to trade tax (*Gewerbesteuer*). However, up to a certain threshold and depending on the local trade tax rate of the municipality in which the trade or business is operated all or part of the trade tax is credited against the respective shareholder's income tax liability.

The rules discussed in this section also apply if a shareholder, or, in the case of a gratuitous acquisition, the shareholder's legal predecessor, directly or indirectly holds at the time of the exchange, or has held at least 1% of the share capital of CureVac at any time during the five years preceding the exchange of CureVac Shares for BioNTech ADSs. Special rules (i.e., limitation of tax deductibility) apply with regard to capital losses.

The exchange of CureVac Shares for BioNTech ADSs and the receipt of cash in lieu of fractional BioNTech ADSs would generally be subject to a German withholding tax at a rate of 25% plus solidarity surcharge of 5.5%, resulting in an aggregate withholding tax of 26.375% (plus church tax, if any).

Upon certain conditions, such as the exercise of election rights, the receipt of BioNTech ADSs on the exchange may not lead to an otherwise taxable capital gain; however this would not apply to any cash in lieu of fractional BioNTech ADSs.

CureVac Shares held by Corporations

Generally, capital gains recognized by corporations on the exchange of CureVac Shares for BioNTech ADSs (plus any cash in lieu of fractional BioNTech ADSs) in the Offer (i.e., the market value of the BioNTech ADSs (plus any cash in lieu of fractional BioNTech ADSs) minus the disposal and acquisition costs) are exempt from corporate income tax and trade tax if the CureVac Shares are held as business assets attributable to a permanent establishment in Germany. However, 5% of such capital gain is treated as non-deductible business expenses and is, as such, subject to corporate income tax (plus solidarity surcharge of 5.5% thereon) and trade tax. Losses from the exchange of CureVac Shares and any other profit reductions related to the exchange are generally not tax deductible.

The 95% tax exemption rule also applies to the cash compensation received in lieu of fractional BioNTech ADSs.

Special rules apply to companies operating in the financial and insurance sectors, as well as to pension funds.

Upon certain conditions, such as the exercise of election rights, the receipt of BioNTech ADSs on the exchange may not lead to an otherwise taxable capital gain; however this would not apply to any cash in lieu of fractional BioNTech ADSs.

CureVac Shares held by Partnerships

If the shareholder is a partnership engaged or deemed to be engaged in a trade or business (commercial partnership (*Mitunternehmerschaft*)), income tax or corporate income tax, as the case may be, is assessed at the level of each partner rather than at the level of the partnership. The taxation of each partner depends on whether the partner is subject to income tax or corporate income tax.

If the partner is subject to corporate income tax, capital gains from the exchange of CureVac Shares are, in general, effectively 95% tax exempt (see section "*18.1.1.1.1 Taxes on Income and Capital Gains – Resident CureVac Shareholders – CureVac Shares held by Corporations*" above).

If the partner is subject to income tax, 60% of the capital gains from the exchange of the CureVac Shares are taxable (see section "*18.1.1.1.1 Taxes on Income and Capital Gains – Resident CureVac Shareholders – CureVac Shares held as Business Assets by Individual Shareholders (Sole Proprietors)*" above).

In addition, if the CureVac Shares are attributable to a permanent establishment of the commercial partnership in Germany, any capital gain from their exchange is subject to trade tax at the level of the partnership, with 60% of the gain being subject to trade tax to the extent that the partners are individuals and, effectively, 5% to the extent that the partners are corporations. In the case of partners who are individuals, up to a certain threshold, and depending on the local trade tax rate of the municipality in which the trade or business is operated, all or part of the trade tax is credited against their income tax liability.

With respect to the deductibility of business expenses related to the capital gains and the deductibility of capital losses for income tax or corporate income tax purposes, as the case may be, the rules outlined above apply to the partners accordingly.

If the shareholder is a partnership which is neither engaged nor deemed to be engaged in a trade or business (*vermögensverwaltende Personengesellschaft*), each partner is taxed, generally speaking, as though they hold a fraction of each share held by such partnership directly (see sections "*18.1.1.1.1 Taxes on Income and Capital Gains – Resident CureVac Shareholders* – CureVac Shares held as Private Assets", "*18.1.1.1.1 Taxes on Income and Capital Gains – Resident CureVac Shareholders – CureVac Shares held as Business Assets by Individual Shareholders (Sole Proprietors)"* and "*18.1.1.1.1 Taxes on Income and Capital Gains – Resident CureVac Shareholders – CureVac Shares held by Corporations*").

Non-German tax resident CureVac Shareholders

Capital gains realized on the exchange of CureVac Shares pursuant to the Offer (i.e., the market value of the BioNTech ADSs minus the disposal and acquisition costs) are subject to a limited tax liability in Germany to the extent that the shares are held as part of business assets in Germany (that is, they are attributable to a permanent establishment or fixed base or to business assets for which a permanent representative in Germany has been appointed), and the provisions outlined above with respect to the taxation of shareholders that are German tax residents principally apply accordingly.

Otherwise, capital gains realized by shareholders that are not German tax residents are taxable in Germany only if an individual shareholder making the disposal – or, in the event of shares acquired without consideration, his legal predecessor – held a direct or indirect stake of at least 1% in CureVac's share capital at any point in time in the five years preceding the disposal or holds this stake during the disposal. In general, most double taxation conventions concluded by Germany provide for full exemption from German taxation in such cases and assigns the taxation right to the country of residence of the shareholder.

Non-German tax resident CureVac shareholders will be subject to German withholding tax at an aggregate rate of 26.375% with respect to the receipt of cash in lieu of fractional BioNTech ADSs.

18.1.1.1.2 Withholding Tax

German tax resident CureVac Shareholders

The final withholding tax rate (*Abgeltungsteuertarif*) of 25% plus solidarity surcharge of 5.5%, resulting in an aggregate withholding tax of 26.375% (plus church tax, if any) applies for any German tax resident CureVac Shareholder holding the shares as private assets and who directly or indirectly, or in the case of a gratuitous transfer, the shareholder's legal predecessor, held less than 1% of the share capital of CureVac at any time during the five years preceding the exchange of CureVac Shares for BioNTech ADSs. For other shareholders, withholding tax may not be final but still needs to be deducted.

To the extent that the shares are not held as private assets, the general rules of German withholding tax will apply, i. e., any withholding tax and solidarity surcharge that is withheld at source and remitted to the German tax authorities could generally be credited against the respective shareholder's income tax or corporate income tax liability or refunded in the amount of any excess paid.

Non-German tax resident CureVac shareholders

If the capital gains realized on the exchange is subject to limited tax liability in Germany, generally, withholding tax needs to be deducted. Any withholding tax and solidarity surcharge that is withheld at source and remitted to the German tax authorities could, under certain circumstances fully or partially, be credited towards the respective shareholder's income tax or corporate income tax liability or refunded in the amount of any excess paid. Non-German tax resident CureVac shareholders could under certain circumstances have German filing obligations.

18.1.1.2 Income and Dividend Withholding Tax Aspects for CureVac Shareholders Who do not Tender Their CureVac Shares in the Offer

Following the expiration of the Subsequent Offering Period, the post-offer reorganization will be implemented, including the legal downstream merger, which merger includes an allotment of shares, together with a cancellation. It is assumed for all purposes herein that New Topco is tax resident in Germany at all relevant points in time when taxable events may occur.

18.1.1.2.1 Legal Downstream Merger

Taxes on Income and Capital Gains

CureVac Shareholders holding their shares as private assets (*Privatvermögen*) and who not tender their CureVac Shares in the Offer would generally not be subject to German income tax as a result of the legal downstream merger.

For individuals holding CureVac Shares as business assets, the tax aspects described above under the section "*18.1.1.1.1 Taxes on Income and Capital Gains – Resident CureVac Shareholders – CureVac Shares held as Business Assets by Individual Shareholders (Sole Proprietors)*" apply accordingly. These rules also apply if a shareholder, or in the case of a gratuitous acquisition, the shareholder's legal predecessor, directly or indirectly has held at least 1% of the share capital of CureVac at any time during the five years preceding the legal downstream merger. For corporations and partnerships holding CureVac Shares, the tax aspects described above under sections "*18.1.1.1.1 Taxes on Income and Capital Gains – Resident CureVac Shareholders – CureVac Shares held by Corporations*" and "*18.1.1.1.1 Taxes on Income and Capital Gains – Resident CureVac Shareholders – CureVac Shares held by Partnerships*" apply accordingly. Upon certain conditions, such as the exercise of election rights, the legal downstream merger may not lead to an otherwise taxable capital gain.

18.1.1.2.2 Cancellation

Taxes on Income and Capital Gains

Based on a view taken in German tax literature in relation to German shares, the cancellation of shares should be classified as a taxable disposal for German tax purposes. The principles with respect to capital gains that are described below in section "*18.1.2.1.3 German Income and Withholding Taxation of Capital Gains of Holders Not Tax Resident in Germany*" for non-German tax resident shareholders and below in section "*18.1.2.2 Taxation of Holders Tax Resident in Germany*" for German tax resident shareholders should apply accordingly. However, there is a risk that the German tax authorities or German tax courts qualify the receipt of BioNTech ADSs and cash in lieu of fractional BioNTech ADSs as cancellation consideration as a generally taxable dividend. In such case, the principles stated below in section "*18.1.2.1.2 German Withholding Taxation of Dividends of Holders Not Tax Resident in Germany*" for non-German tax resident shareholders and below in section "*18.1.2.2 Taxation of Holders Tax Resident in Germany*" for German tax resident with respect to income tax on dividend income should apply accordingly.

Withholding Tax

In the event the cancellation is classified as a disposal for German tax purposes, the principles stated below in section "*18.1.2.1.3 German Income and Withholding Taxation of Capital Gains of Holders Not Tax Resident in Germany*" for non-German tax resident shareholders and below in section "*18.1.2.2 Taxation of Holders Tax Resident in Germany*" for German tax resident shareholders with respect to withholding tax on capital gains should apply to the receipt of BioNTech ADSs pursuant to the cancellation. However, the receipt of cash in lieu of fractional BioNTech ADSs as part of the cancellation consideration would generally be subject to German withholding tax at a rate of 25% plus solidarity surcharge of 5.5%, resulting in an aggregate withholding tax of 26.375% (plus church tax, if any). Such German withholding tax on capital gains would generally be levied by the applicable German disbursing agent (i.e., the German credit institution, financial services institution, or securities institution through which the recipient holds its CureVac Shares) rather than New Topco. For certain German shareholders, withholding tax may not be final but still needs to be deducted.

In the event the German tax authorities (for example, during a tax audit of New Topco or a cancellation consideration recipient) or German tax courts were to qualify the receipt of the cancellation consideration as a generally taxable dividend, the cancellation consideration would generally be subject to the aggregate withholding tax rate of 26.375% (plus church tax, if applicable), and the principles stated below in section "*18.1.2.1.2 German Withholding Taxation of Dividends of Holders Not Tax Resident in Germany*" for non-German tax resident shareholders and below in section "*18.1.2.2 Taxation of Holders Tax Resident in Germany*" for German tax resident shareholders with respect to withholding tax on dividend income should apply accordingly. Under such circumstances, the applicable German disbursing agent (where there is one) or New Topco (otherwise) would have an obligation to withhold. In the event New Topco had the obligation to withhold, New Topco could be held liable for such unremitted withholding tax (and could seek to be made whole by the cancellation consideration recipients). In addition, the cancellation consideration recipients could be held liable by the German tax authorities.

18.1.1.3 Other German tax aspects for CureVac shareholders or New Topco shareholders

No German transfer tax, stamp duty, or any other similar documentary tax or duty is payable in Germany by a CureVac Shareholder or New Topco shareholder in connection with the offer or any post-offer reorganization, as applicable. Disposals of shares are generally exempt from German VAT.

18.1.2 Material German Income Tax Consequences for Holders of ADSs

18.1.2.1 Taxation of Holders Not Tax Resident in Germany

The following discussion describes selected German tax consequences of acquiring the ADSs, owning the ADSs and disposing of the ADSs to a holder that is not tax resident in Germany.

This discussion does not address the treatment of ADSs that are (i) held in connection with a permanent establishment or fixed base through which a non-German resident holder of ADSs carries on business or performs personal services in Germany or (ii) part of business assets for which a permanent representative in Germany has been appointed.

18.1.2.1.1 General Rules for the Taxation of Holders Not Tax Resident in Germany

Non-German resident holders of ADSs are subject to a German limited tax liability with respect to German source income (*beschränkte Steuerpflicht*). According to the ADR Tax Circular, income from the shares should be attributed to the holder of the ADSs for German tax purposes. Income from the ADSs would be treated as German source income and would generally be subject to German limited tax liability.

18.1.2.1.2 German Withholding Taxation of Dividends of Holders Not Tax Resident in Germany

Generally, the full amount of a dividend distributed by the Company to a non-German resident holder, which does not maintain a permanent establishment or other taxable presence in Germany, is subject to (final) German withholding tax at an aggregate rate of 26.375% (that amount consists of 25% on dividends distributed plus solidarity surcharge of 5.5% on the amount of the withholding tax) plus church tax, if applicable. The basis for the withholding tax is generally the dividend approved for distribution by our general shareholder's meeting. German withholding tax is withheld and remitted to the German tax authorities by (i) the disbursing agent (i.e., the German credit institution, financial services institution, or securities institution) that holds or administers the underlying shares in custody and (a) disburses or credits the dividend income from the underlying shares, (b) disburses or credits the dividend income from the underlying shares on delivery of the dividend coupons or (c) disburses such dividend income to a foreign agent; or (ii) the central securities depository (*Wertpapiersammelbank*) in terms of the German Depositary Act (*Depotgesetz*) holding the underlying shares in a collective deposit, if such central securities depository disburses the dividend income from the underlying shares to a foreign agent, regardless of whether a holder must report the dividend for tax purposes and regardless of whether or not a holder is a resident of Germany; or (iii) the debtor of the capital gains under further requirements. Dividend payments, to the extent funded from the Company's tax-recognized contribution account (*steuerliches Einlagekonto*), subject to certain prerequisites, do not form part of the taxable dividend income but should lower the holder's acquisition costs for the ADSs.

Where dividends are distributed to a company resident in another member state of the EU within the meaning of Article 2 of Council Directive 2011/96/EU of November 30, 2011, on the common system of taxation applicable in the case of parent companies and subsidiaries of different Member States, as amended (the "**Parent Subsidiary Directive**"), withholding of the dividend withholding tax may not be required (withholding tax exemption) or may be refunded, in each case only upon application and provided that certain additional requirements are met. This also applies to dividends distributed to a permanent establishment located in another member state of the EU of such parent company or of a parent company that is tax resident in Germany, if the interest in the dividend paying subsidiary is part of the respective permanent establishment's business assets. Further prerequisites for the exemption from withholding at the source or a refund of withholding tax under the Parent Subsidiary Directive are that the holder has directly held at least 10% of the Company's registered share capital uninterruptedly for twelve months at the time at which the withholding tax arises and that the German Federal Central Tax Office (*Bundeszentralamt für Steuern*), with its registered office in An der Küppe 1, 53225 Bonn, Germany, has certified to the creditor of the dividends, based upon an application filed by such creditor on the officially prescribed electronic form, that the prerequisites for exemption have been met. The exemption from, or the refund of, withholding taxes on dividends is subject to the German anti-treaty shopping rules. These rules, *inter alia*, generally require that a holder maintains its own administrative substance in the country of its tax residence and conducts its own business activities.

The dividend withholding tax rate for dividends paid to holders of ADSs without a tax residence in Germany may be reduced in accordance with any applicable double taxation treaty between Germany and the relevant holder's country of residence, provided that the ADSs are neither held as part of the business assets of a permanent establishment in Germany nor as part of the business assets for which a permanent representative in Germany has been appointed. The reduction in the dividend withholding tax is generally obtained by applying electronically to the German Federal Central Tax Office at the aforementioned offices for a refund of the difference between the dividend withholding tax withheld, including the solidarity surcharge and the amount of withholding tax actually owed under the applicable double taxation treaty, which usually amounts to between 5% and 15%. Depending on the applicable double taxation treaty, a reduced withholding tax rate may be applicable in the tax withholding process, if the holder of ADSs has electronically applied for and received an exemption certificate from the German Federal Central Tax Office. The applicable double taxation treaty may also provide for a full exemption from the German dividend withholding tax if the relevant holder of ADSs has directly held at least 10% of the Company's registered share capital and if further prerequisites are met. Corporations that are not tax resident in Germany may upon application, and subject to certain requirements, receive a refund of two fifths of the dividend withholding tax that was withheld and remitted to the tax authorities subject to certain requirements. This applies regardless of any further reduction or exemption provided for under the Parent Subsidiary Directive or a double taxation treaty.

Foreign corporations will generally have to meet certain prerequisites, *i.e.*, stringent substance criteria, defined by statute, in order to receive an exemption from, or (partial) refund of, German dividend withholding tax.

However, it should be noted that there is uncertainty as to how the German tax authorities will apply the refund process to dividends on the ADSs with respect to non-German resident holders. Further, such refund is subject to the German anti-avoidance treaty shopping rule (as described below in section "*18.1.2.1.4 Withholding Tax Refund for Holders Not Tax Resident in Germany*").

18.1.2.1.3 German Income and Withholding Taxation of Capital Gains of Holders Not Tax Resident in Germany

The capital gains from the disposition of the ADSs realized by a non-German resident holder, which does not maintain a permanent establishment or other taxable presence in Germany, would be treated as German source income and be subject to German limited tax liability if the ADSs qualify as a Qualifying Participation. A Qualifying Participation exists if a holder at any time during the five years preceding the disposition, directly or indirectly, owned at least 1% of the Company's share capital, irrespective of whether through the ADSs or shares of the Company. If such holder had acquired the ADSs without consideration, the previous owner's holding period and quota would be taken into account.

German statutory law requires the disbursing agent to levy withholding tax on capital gains from the sale of ADSs or other securities held in a custodial account in Germany. With regard to the German taxation of capital gains, disbursing agent means a German credit institution, financial services institution, or securities institution that holds the ADSs in custody or administers the ADSs for the investor or conducts sales or other dispositions and disburses or credits the income from the ADSs to the holder of the ADSs.

The German statutory law does not explicitly condition the obligation to withhold taxes on capital gains being subject to taxation in Germany under German statutory law or on an applicable income tax treaty permitting Germany to tax such capital gains.

However, a circular issued by the German Federal Ministry of Finance, dated May 19, 2022, reference number IV C 1-S2252/19/10003 :009, as most recently amended by circular dated May 14, 2025, reference number IV C 1-S2252/00075/016/070, provides that taxes need not be withheld upon a disposal when a non-German tax resident holder has shares in a domestic custody account even if the non-German tax resident holder owns at least 1% of the share capital of a German corporation. While circulars issued by the German Federal Ministry of Finance are generally only to be adhered to by the German tax authorities but are, for example, not binding on the German courts, in practice, the disbursing agents nevertheless typically rely on guidance contained in such circulars. Therefore, a disbursing agent would only withhold tax at 26.375% plus church tax, if applicable, on capital gains derived by a non-resident holder from the sale of ADSs held in a custodial account in Germany in the event that the disbursing agent did not follow the abovementioned guidance. In this case, the non-resident holder may be entitled to claim a refund of the withholding tax from the German tax authorities under the applicable double taxation treaty, as described below in section "*18.1.2.1.4 Withholding Tax Refund for Holders Not Tax Resident in Germany*". A refund of taxes withheld on capital gains from the disposition of the ADSs which do not qualify as Qualifying Participations may also be claimed based on German statutory domestic law.

18.1.2.1.4 Withholding Tax Refund for Holders Not Tax Resident in Germany

Holders not tax resident in Germany may generally be eligible for treaty benefits under applicable double taxation treaties, as described above in section "*18.1.2.1 Taxation of Holders Not Tax Resident in Germany*". Accordingly, holders not tax resident in Germany may in general be entitled to claim a refund of (i) the portion of the otherwise applicable 26.375% German withholding tax (*Kapitalertragsteuer*) on dividends that exceeds the applicable double taxation treaty rate and (ii) the full amount of German withholding tax (*Kapitalertragsteuer*) on capital gains from the disposition of ADSs. The application for such claim is generally to be filed with the Federal Central Office of Taxation (*Bundeszentralamt für Steuern*) within four years after the end of the calendar year in which the capital gains or dividends have been received (*bezogen*).

However, in respect of dividends, the refund described in the preceding paragraph is only possible if, due to special rules on the restriction of withholding tax credit, the following three cumulative requirements are met: (i) the holder must qualify as beneficial owner of the ADSs for an uninterrupted minimum holding period of 45 days within a period starting 45 days prior to and ending 45 days after the due date of the dividends, (ii) the holder has to bear at least 70% of the change in value risk related to the ADSs during the minimum holding period as described under (i) of this paragraph and has not entered into (acting by itself or through a related party) hedging transactions which lower the change in value risk by more than 30%, and (iii) the holder must not be obliged to fully or largely compensate directly or indirectly the dividends to third parties. If these requirements are not met, then for a holder not being tax-resident in Germany who applied for a full or partial refund of the withholding tax pursuant to a double taxation treaty, no refund is available. This restriction generally does only apply if (a) the German tax underlying the refund application is below a tax rate of 15% based on the gross amount of the dividends and (b) the holder does not directly own 10% or more of the shares of the Company and is subject to income taxes in its state of residence, without being tax-exempt. The restriction of the withholding tax refund does not apply if the holder has beneficially owned the ADSs for at least one uninterrupted year until receipt (*Zufluss*) of the dividends.

In general, as previously discussed, investors should note that it is unclear how the German tax administration will apply the refund process to dividends on the ADSs. Further, such refund is subject to the German anti treaty shopping rule. Generally, this rule requires that the non-German holder (in case it is a non-German resident company) maintains its own administrative substance and conducts its own business activities. In particular, a foreign company has no right to a full or partial refund to the extent persons holding ownership interests in the Company would not be entitled to the refund if they derived the income directly and the gross income realized by the foreign company is not caused by the business activities of the foreign company, and there are either no economic or other considerable reasons for the interposition of the foreign company, or the foreign company does not participate in general commerce by means of a business organization with resources appropriate to its business purpose. However, this shall not apply if the foreign company's principal class of stock is regularly traded in substantial volume on a recognized stock exchange. Whether or not and to which extent the anti-treaty shopping rule applies to the ADSs has to be analyzed on a case by case basis taking into account all relevant tests. In addition, the interpretation of these tests is disputed.

Due to the legal structure of the ADSs, only limited guidance from the German tax authorities exists on the practical application of the refund process with respect to the ADSs and the respective limitations. Recently, the German tax authorities have indicated that for ADR programs (which are considered comparable to ADS programs) a collective tax certificate in connection with a withholding of tax amounts may no longer be issued by the domestic depositary of the shares upon request of the foreign depositary agents. Rather, individual tax certificates need to be issued which might delay a potential refund procedure. Moreover, the simplified refund procedure based on electronic data exchange (*Datenträgerverfahren*) for claims for reimbursement based on ADRs has been suspended temporarily by the tax authorities.

18.1.2.2 Taxation of Holders Tax Resident in Germany

This subsection provides an overview of dividend taxation and of capital gains taxation with regard to the general principles applicable to ADS holders that are tax resident in Germany. A holder is a German tax resident if, in case of an individual, he or she maintains a domicile (*Wohnsitz*) or a usual residence (*gewöhnlicher Aufenthalt*) in Germany or if, in case of a corporation, it has its place of management (*Geschäftsleitung*) or registered seat (*Sitz*) in Germany.

The German dividend and capital gains taxation rules applicable to German tax residents require a distinction between ADSs held as private assets (*Privatvermögen*) and ADSs held as business assets (*Betriebsvermögen*).

18.1.2.2.1 ADSs as Private Assets (Privatvermögen)

If the ADSs are held as private assets by a German tax resident, dividends and capital gains (other than capital gains from the disposition of a Qualifying Participation) are taxed as investment income and are principally subject to 25% German flat income tax on capital income (*Abgeltungsteuer*) (plus a 5.5% solidarity surcharge (*Solidaritätszuschlag*) thereon, resulting in an aggregate rate of 26.375%) plus church tax, if applicable), which is levied in the form of withholding tax (*Kapitalertragsteuer*). In other words, once deducted, the holder's income tax liability on the dividends will be settled. Dividend payments to the extent funded from the Company's tax-recognized contribution account (*steuerliches Einlagekonto*), subject to certain prerequisites, do not form part of the taxable dividend income but should lower the holder's acquisition costs for the ADSs.

Holders of ADSs may apply to have their capital investment income assessed in accordance with the general rules and with an individual's personal income tax rate if this would result in a lower tax burden in which case actually incurred expenses are not deductible. The holder would be taxed on gross personal investment income (including dividends or gains with respect to ADSs), less the saver's allowance of €1,000 for an individual or €2,000 for a married couple and a registered civil union (*eingetragene Lebenspartnerschaft*) filing taxes jointly. The deduction of expenses related to the investment income (including dividends or gains with respect to ADSs) is generally not possible for private investors.

Losses resulting from the disposal of ADSs can only be offset against capital gains from the sale of any shares (*Aktien*) and other ADSs. If, however, a holder holds a Qualifying Participation, 60% of any capital gains resulting from the sale and transfer are taxable at the holder's personal income tax rate (plus 5.5% solidarity surcharge thereon plus church tax, if applicable). Conversely, 60% of any capital losses are recognized for tax purposes.

Since 2021, the basis for the calculation of the solidarity surcharge (*Solidaritätszuschlag*) has been reduced for certain individual persons being subject to tax assessments (other than withholding taxes), and in certain cases, the solidarity surcharge has been abolished. However, the abolition or reduction of the solidarity surcharge is not applicable to corporations. In addition, the abolition or reduction of the solidarity surcharge will not affect withholding taxes. Solidarity surcharge will still be levied at 5.5% on the full withholding tax amount and withheld accordingly. There will not be any separate refund of such withheld solidarity surcharge (regardless of the aforementioned exemption limits) in case the withholding tax cannot be refunded either.

Church tax generally has to be withheld, if applicable, based on an automatic data access procedure, unless the holder of ADSs has filed a blocking notice (*Sperrvermerk*) with the Federal Central Tax Office. Where church tax is not levied by way of withholding, it is determined by means of income tax assessment.

18.1.2.2.2 ADSs as Business Assets (Betriebsvermögen)

In case the ADSs are held as business assets, the taxation depends on the legal form of the holder (i.e., whether the holder is a corporation or an individual).

Irrespective of the legal form of the holder, dividends are subject to the aggregate withholding tax rate of 26.375% plus church tax, if applicable. The withholding tax is generally creditable against the respective holder's corporate income tax or income tax liability. Due to special rules on the restriction of withholding tax credits in respect of dividends, a full withholding tax credit requires that the following three cumulative requirements are met: (i) the holder must qualify as beneficial owner of the ADSs for an uninterrupted minimum holding period of 45 days occurring within a period starting 45 days prior to and ending 45 days after the due date of the dividends, (ii) the holder has to bear at least 70% of the change in value risk related to the ADSs during the minimum holding period as described under (i) of this paragraph and has not entered into (acting by itself or through a related party) hedging transactions which lower the change in value risk for more than 30%, and (iii) the holder must not be obliged to fully or largely compensate directly or indirectly the dividends to third parties. If these requirements are not met, three-fifths of the withholding tax imposed on the dividends must not be credited against the holder's corporate income tax or income tax liability, but may, upon application, be deducted from the holder's tax base for the relevant tax assessment period. A holder that is generally subject to German income tax or corporate income tax and that has received gross dividends without any deduction of withholding tax due to a tax exemption without qualifying for a full tax credit under the aforementioned requirements has to notify the competent local tax office accordingly, has to file withholding tax returns for a withholding tax of 15% in accordance with statutory formal requirements and has to make a payment in the amount of the omitted withholding tax deduction. The special rules on the restriction of withholding tax credit (and the corresponding notification and payment obligations) do not apply to a holder whose overall dividend earnings within an assessment period do not exceed €20,000 or that has been the beneficial owner of the ADSs for at least one uninterrupted year until receipt (*Zufluss*) of the dividends.

To the extent the amount withheld exceeds the income tax liability, the withholding tax may be refunded, provided that certain requirements are met (including the aforementioned requirements).

Special rules apply to credit institutions (*Kreditinstitute*), financial services institutions (*Finanzdienstleistungsinstitute*), financial enterprises (*Finanzunternehmen*), life insurance and health insurance companies, and pension funds.

In principle, dividends that a corporation receives from German or foreign corporations are subject to corporate income tax (and solidarity surcharge thereon) at a rate of 15.825% and also subject to trade tax at a rate depending on the multiplier applied by the relevant municipality. However, with regard to holders in the legal form of a corporation, capital gains are in general effectively 95% tax exempt from corporate income tax (including solidarity surcharge). Dividends are also generally 95% tax exempt from corporate income tax (including solidarity surcharge), inter alia, if the holder held at least 10% of the registered share capital (*Grundkapital oder Stammkapital*) of the Company at the beginning of the calendar year, such dividends referred to herein as Qualifying Dividends. Five percent of the capital gains and five percent of the Qualifying Dividends are treated as non-deductible business expenses, respectively, and, as such, are subject to corporate income tax (plus solidarity surcharge thereon); actual business expenses incurred to generate dividends may be deducted. The acquisition of a participation of at least 10% in the course of a calendar year is deemed to have occurred at the beginning of such calendar year for the determination of whether a dividend is a Qualifying Dividend. Participations in the share capital of the Company held through a partnership, including co-entrepreneurships (*Mitunternehmerschaften*), are attributable to the respective partner only on a pro rata basis at the ratio of its entitlement to the profits of the partnership.

Capital gains and dividend income of a German tax resident corporation are generally subject to German trade tax at a rate depending on the multiplier applied by the relevant municipality. The aforementioned 95% exemption for capital gains generally applies also for trade tax purposes. However, the amount of any dividends after deducting business expenses related to the dividends is not subject to trade tax if the corporation held at least 15% of the Company's registered share capital at the beginning of the relevant tax assessment period. In this case, the aforementioned exemption of 95% of the dividend income also applies for trade tax purposes. Losses from the sale of ADSs are generally not tax deductible for corporate income tax and trade tax purposes.

With regard to individuals holding ADSs as business assets, 60% of dividends and capital gains are taxed at the individual's personal income tax rate (plus 5.5% solidarity surcharge thereon). Correspondingly, only 60% of business expenses related to the dividends and capital gains as well as losses from the sale of ADSs are principally deductible for income tax purposes. Since 2021, the basis for the calculation of the solidarity surcharge (*Solidaritätszuschlag*) has been reduced for certain individual persons being subject to tax assessments (other than withholding taxes), and in certain cases, the solidarity surcharge has been abolished, subject to the limitations described above in section "*18.1.2.2.1 ADSs as Private Assets (Privatvermögen)*". The dividend income and 60% of the capital gains are generally subject to trade tax, which is fully or partly creditable against the individual's personal income tax by a lump-sum method. Dividends (after deduction of business expenses economically related thereto) are exempt from trade tax if the holder held at least 15% of the Company's registered share capital at the beginning of the relevant tax assessment period.

18.1.2.2.3 German Inheritance and Gift Tax (Erbschaft- und Schenkungsteuer)

The transfer of ADSs to another person by inheritance or gift generally should be subject to German inheritance and gift tax only if:

- the decedent or donor or heir, beneficiary or other transferee (a) maintained his or her domicile or a usual residence in Germany, (b) had its place of management or registered office in Germany at the time of the transfer, (c) is a German citizen who has spent no more than five consecutive years (this term is extended to ten years for German expatriates with residence in the United States) outside of Germany without maintaining a domicile in Germany or (d) is a German citizen who serves for a German entity established under public law and is remunerated for his or her service from German public funds (including family members who form part of such person's household, if they are German citizens) and is only subject to estate or inheritance tax in his or her country of domicile or usual residence with respect to assets located in such country (special rules apply to certain former German citizens who neither maintain a domicile nor have their usual residence in Germany);
- at the time of the transfer, the ADSs are held by the decedent or donor as business assets forming part of a permanent establishment in Germany or for which a permanent representative in Germany has been appointed; or
- the ADSs subject to such transfer form part of a portfolio that represents at the time of the transfer 10% or more of the registered share capital of the Company and that has been held directly or indirectly by the decedent or donor, either alone or together with related persons.

Special provisions apply to certain German citizens living outside of Germany and former German citizens.

18.1.2.3 Other Taxes

No German transfer tax, value-added tax, stamp duty or similar taxes are assessed on dividend payments.

18.1.2.4 Responsibility of the Company for the Withholding of Tax at Source

The Company does not assume any responsibility for the deduction of withholding tax (including the solidarity surcharge and, if applicable, the church tax thereon) at source, in accordance with the statutory law.

18.2 Material Dutch Tax Considerations

This summary solely addresses certain material Dutch tax consequences of the Offer and the post-offer reorganization for the CureVac Shareholders and does not purport to describe every aspect of taxation that may be relevant to a particular shareholder. This summary does not describe any Dutch tax consequences arising from the Dutch Minimum Tax Act 2024 (the Dutch implementation of Council Directive (EU) 2022/2523 of 14 December 2022 on ensuring a global minimum level of taxation for multinational enterprise groups and large-scale domestic groups in the EU) which may be relevant for a particular shareholder. Tax matters are complex, and the tax consequences of the Offer and the post-offer reorganization to a particular CureVac Shareholder will depend in part on such shareholder's circumstances. Accordingly, a CureVac Shareholder is urged to consult his own tax advisor for a full understanding of the tax consequences of the Offer or the post-offer reorganization to him, including the applicability and effect of Dutch tax laws, in light of their particular circumstances.

Where in this summary English terms and expressions are used to refer to Dutch concepts, the meaning to be attributed to such terms and expressions shall be the meaning to be attributed to the equivalent Dutch concepts under Dutch tax law. Where in this summary the terms "the Netherlands" and "Dutch" are used, these refer solely to the European part of the Kingdom of the Netherlands. This summary assumes that the Company, CureVac, and New Topco are organized, and that their respective businesses will be conducted, in the manner outlined in this Prospectus. It is further assumed that New Topco is regarded as a tax resident of Germany exclusively under the double tax treaty between Germany and the Netherlands. A change to such organizational structure, tax residency, or to the manner in which the Company, CureVac or New Topco conducts its business may invalidate the contents of this summary, which will not be updated to reflect any such change.

This summary is based on the tax law of the Netherlands (unpublished case law not included) as it stands at the date of this Prospectus. The tax law upon which this summary is based, is subject to changes, possibly with retroactive effect. Any such change may invalidate the contents of this summary, which will not be updated to reflect such change.

This summary does not address the Dutch tax consequences for a CureVac Shareholder or a New Topco shareholder who:

- is a person who may be deemed an owner of CureVac Shares or New Topco A Shares for Dutch tax purposes pursuant to specific statutory attribution rules in Dutch tax law;
- is, although in principle subject to Dutch corporate income tax, in whole or in part, specifically exempt from that tax in connection with income from CureVac Shares or New Topco A Shares;
- is an investment institution as defined in the Dutch Corporate Income Tax Act 1969;
- is an entity that, although in principle subject to Dutch corporate income tax, is fully or partly exempt from Dutch corporate income tax;
- owns CureVac Shares or New Topco A Shares in connection with a membership of a management board or a supervisory board, an employment relationship, a deemed employment relationship or management role;
- has a substantial interest in CureVac or New Topco, or a deemed substantial interest in CureVac or New Topco, as the case may be, for Dutch tax purposes. Generally, a person holds a substantial interest if (a) such person – either alone or, in the case of an individual, together with such person's partner or any of such person's relatives by blood or by marriage in the direct line (including foster-children) or of those of such person's partner for Dutch tax purposes – owns or is deemed to own, directly or indirectly, 5% or more of the shares or of any class of shares of CureVac or New Topco, as the case may be, or rights to acquire, directly or indirectly, such an interest in the shares CureVac or New Topco, as the case may be or profit participating certificates relating to 5% or more of the annual profits or to 5% or more of the liquidation proceeds of CureVac or New Topco, as the case may be, or (b) such person's shares, rights to acquire shares or profit participating certificates in CureVac or New Topco as the case may be, are held by him following the application of a non-recognition provision; or
- is for Dutch tax purposes taxable as a corporate entity and resident of Aruba, Curaçao or Sint Maarten.

18.2.1 Income and Dividend Withholding Tax Aspects for CureVac Shareholders Who Tender Their CureVac Shares in the Offer

18.2.1.1 Taxes on Income and Capital Gains

18.2.1.1.1 Resident CureVac Shareholders

A CureVac Shareholder who is resident or deemed to be resident in the Netherlands for Dutch tax purposes is fully subject to Dutch income tax, if such shareholder is an individual, or fully subject to Dutch corporate income tax, if such shareholder is a corporate entity, or an entity, including an association, a partnership, or a mutual fund, taxable as a corporate entity, as described in the summary below.

Individuals Deriving Profits or Deemed to be Deriving Profits from an Enterprise

Any benefits derived or deemed to be derived from or in connection with CureVac Shares, including as a result of tendering CureVac Shares in connection with the Offer, that are attributable to an enterprise from which an individual derives profits, whether as an entrepreneur or pursuant to a co-entitlement to the net value of an enterprise, other than as a shareholder, are generally subject to Dutch income tax at progressive rates up to 49.5%.

Individuals Deriving Benefits from Miscellaneous Activities

Any benefits derived or deemed to be derived from or in connection with CureVac Shares, including as a result of tendering their CureVac Shares in connection with the Offer, that constitute benefits from miscellaneous activities by an individual are generally subject to Dutch income tax at progressive rates up to 49.5%.

An individual may, inter alia, derive, or be deemed to derive, benefits from or in connection with CureVac Shares that are taxable as benefits from miscellaneous activities if such individual's investment activities go beyond regular active portfolio management.

Other Individuals

If a CureVac Shareholder is an individual whose situation has not been discussed before in this section "*18.2.1.1.1 Resident CureVac Shareholders*", the value of such CureVac Shareholders' CureVac Shares forms part of the yield basis for purposes of tax on benefits from savings and investments. A deemed benefit, which is calculated on the basis of a holder's actual bank savings plus his actual other investments (including the value of such holder's CureVac Shares), minus such holder's actual liabilities whilst taking into account a deemed benefit for each of these categories, is taxed at the rate of 36%. For the year 2025, the estimated deemed benefit rate for actual bank savings is 1.44%, the deemed benefit rate for actual other investments is 5.88%, and the estimated deemed benefit rate for actual liabilities is 2.62%. The estimated deemed return percentages will be confirmed at a future date. Actual benefits derived from or in connection with their CureVac Shares, including as a result of tendering their CureVac Shares in connection with the Offer, are in principle not subject to Dutch income tax.

However, on June 6 and 14, 2024, the Dutch Supreme Court (Hoge Raad) ruled that the Dutch income tax regime for savings and investments as described above, which we refer to as the box 3 regime, in certain specific circumstances contravenes with Section 1 of the First Protocol to the European Convention on Human Rights in combination with Section 14 of the European Convention on Human Rights, which we refer to as the rulings. In the rulings, the Dutch Supreme Court introduced a rebuttal provision (*tegenbewijsregeling*) pursuant to which taxpayers have the possibility to demonstrate that the actual return realized by the taxpayer in respect of their investments assets (as calculated in line with the rules as set out in the rulings), is less than the deemed return realized by the taxpayer in respect of those assets (as calculated in accordance with the rules of the box 3 regime). The rebuttal provision introduced by the Dutch Supreme Court as well as the rules set out in the rulings have been implemented in Dutch tax law pursuant to the Dutch Box 3 Rebuttal Scheme Act (*Wet tegenbewijsregeling box 3*). If the taxpayer successfully demonstrates that the actual return is less than the deemed return (using a standardized form), the taxpayer will be taxed on the actual return instead of the deemed return.

Therefore, CureVac Shareholders who are taxed in this manner with respect to their shares are advised to consult a professional tax advisor.

Corporate Entities

Any benefits derived or deemed to be derived from or in connection with CureVac Shares, including as a result of tendering their CureVac Shares in connection with the Offer, that are held by a corporate entity, or an entity, including an association, a partnership, or a mutual fund, taxable as a corporate entity, are generally subject to Dutch corporate income tax.

General

A CureVac Shareholder will not be deemed to be resident in the Netherlands for Dutch tax purposes by reason only of the execution and/or enforcement of the documents relating to the Offer.

18.2.1.1.2 Non-resident CureVac Shareholders

Individuals

If a CureVac Shareholder is an individual who is neither resident nor deemed to be resident in the Netherlands for purposes of Dutch income tax, they will not be subject to Dutch income tax in respect of any benefits derived or deemed to be derived from or in connection with CureVac Shares, except if:

- they derive profits from an enterprise, whether as an entrepreneur or pursuant to a co-entitlement to the net value of such enterprise, other than as a shareholder, and such enterprise is carried on, in whole or in part, through a permanent establishment or a permanent representative in the Netherlands, and their CureVac Shares are attributable to such permanent establishment or permanent representative; or
- he derives benefits or is deemed to derive benefits from or in connection with CureVac Shares that are taxable as benefits from miscellaneous activities performed in the Netherlands.

Corporate Entities

If a CureVac Shareholder is a corporate entity, or an entity including an association, a partnership, or a mutual fund, taxable as a corporate entity, which is neither resident, nor deemed to be resident in the Netherlands for purposes of Dutch corporate income tax, it will not be subject to Dutch corporate income tax in respect of any benefits derived or deemed to be derived from or in connection with CureVac Shares, except if:

- it derives profits from an enterprise directly which is carried on, in whole or in part, through a permanent establishment or a permanent representative in the Netherlands, and to which permanent establishment or permanent representative its CureVac Shares are attributable; or
- it derives profits pursuant to a co-entitlement to the net value of an enterprise which is managed in the Netherlands, other than as a holder of securities, and to which enterprise its CureVac Shares are attributable

18.2.1.2 Dividend Withholding Tax

No Dutch dividend withholding tax will be withheld or deducted from the payment of the Offer Consideration by the Company to the CureVac Shareholders in respect of a disposal of the CureVac Shares under the Offer.

18.2.2 Income and Dividend Withholding Tax Aspects for CureVac Shareholders Who do not Tender Their CureVac Shares in the Offer

Following the expiration of the Subsequent Offering Period, the post-offer reorganization will be implemented, including the legal downstream merger, which merger includes an allotment of New Topco A Shares, together with a cancellation against payment of the cancellation consideration.

18.2.2.1 Legal Downstream Merger

18.2.2.1.1 Taxes on Income and Capital Gains

The Dutch income tax and corporate income tax consequences for CureVac Shareholders in respect of a disposal of the CureVac Shares under the legal downstream merger are in principle similar to the Dutch tax treatment of the disposal of the CureVac Shares in connection with the Offer, unless roll-over relief is available in respect of any gain realized in connection with the legal downstream merger.

18.2.2.1.2 Dividend Withholding Tax

No Dutch dividend withholding tax is due upon a disposal of the CureVac Shares under the legal downstream merger or in respect of receipt of New Topco A Shares pursuant to the legal downstream merger.

18.2.2.2 Cancellation

18.2.2.2.1 Taxes on Income and Capital Gains

The Dutch income tax and corporate income tax consequences of the cancellation for a New Topco A Shares shareholder are in principle similar to the Dutch tax treatment of the disposal of CureVac Shares in connection with the Offer.

18.2.2.2.2 Dividend Withholding Tax

New Topco is generally required to withhold Dutch dividend withholding tax at a rate of 15% on dividends distributed by it, subject to potential relief under Dutch domestic law, EU law, or an applicable Dutch income tax treaty, depending on the particular individual circumstances of the relevant New Topco shareholder. The term "dividends distributed by New Topco" as used in this paragraph includes, but is not limited to, payments (in cash or in kind) made pursuant to the cancellation of the New Topco A Shares that exceed the average paid-in capital (recognized for Dutch dividend withholding tax purposes, the "**Fiscally Recognized Capital**") of the cancelled New Topco A Shares immediately prior to the cancellation effective time.

The Fiscally Recognized Capital of New Topco is, immediately following the merger effective time, equal to (i) the Fiscally Recognized Capital of CureVac at the time of the legal downstream merger, or (ii) if lower, the fair market value of CureVac at such time. It is currently expected that the Fiscally Recognized Capital of New Topco will be increased at most by an amount equal to the fair market value of CureVac at the time of the legal downstream merger.

In the event the cancellation consideration per New Topco A Share exceeds the Fiscally Recognized Capital of New Topco A Shares immediately prior to the cancellation time, the excess will, in principle, be subject to Dutch dividend withholding tax.

However, as long as New Topco has its place of effective management in Germany and is therefore exclusively considered a tax resident of Germany under the double tax treaty between Germany and the Netherlands, as currently expected, the Netherlands will be restricted from imposing Dutch dividend withholding tax in respect of the cancellation consideration, except in the event the cancellation consideration is paid to (i) a shareholder who is resident or deemed to be resident in the Netherlands for Dutch income tax purposes or Dutch corporate income tax purposes, which we refer to as a Dutch Resident Holder, or (ii) a shareholder who is not resident nor deemed to be resident in the Netherlands for Dutch income tax purposes or Dutch corporate income tax purposes but who derives profits from an enterprise which enterprise is carried on, in whole or in part, through a permanent establishment or a permanent representative in the Netherlands, to which its New Topco A Shares are attributable, which we refer to as a Dutch PE Holder.

In order to apply this regime correctly, New Topco needs to identify its shareholders to assess whether they are Dutch Resident Holders and Dutch PE Holders. As a practical matter, New Topco will not be able to make this confirmation with certainty prior to the cancellation effective time. Therefore, by default, Dutch dividend withholding tax will be withheld on the cancellation consideration if and to the extent the cancellation consideration exceeds the Fiscally Recognized Capital of the New Topco A Shares immediately prior to the cancellation effective time.

As long as New Topco has its place of effective management in Germany and is therefore exclusively considered a tax resident of Germany under the double tax treaty between Germany and the Netherlands, as currently expected, shareholders who are neither a Dutch Resident Holder nor a Dutch PE Holder may be able to reclaim any Dutch dividend withholding tax withheld from the cancellation consideration via New Topco. Dutch Resident Holders and Dutch PE Holders may be eligible for a (partial) refund from the Dutch tax authorities directly, depending on the particular individual circumstances of the relevant New Topco shareholder. CureVac Shareholders should consult their tax advisors regarding the potential refund possibilities in light of their particular circumstances. There can be no assurances as to the success of any refund request.

See section "*3.1.2.14 The Post-Offer Reorganization and the New Topco U.S. Tax Election*" for more detail.

18.2.2.2.3 Other Dutch Tax Aspects for CureVac Shareholders or New Topco Shareholders

No Dutch registration tax, transfer tax, stamp duty, or any other similar documentary tax or duty, is payable in the Netherlands by a CureVac Shareholder or a holder of New Topco A Shares in connection with the Offer or the post-offer reorganization, as applicable.

19 FINANCIAL INFORMATION OF BIONTECH

The English-language consolidated financial statements and English-language annual financial statements in 19.2-19.5 below are translations of the respective audited German-language consolidated financial statements and German-language annual financial statements.

19.1	**Unaudited Interim Condensed Consolidated Financial Statements of BioNTech SE prepared in accordance with IFRS Accounting Standards as issued by the International Accounting Standards Board (IASB) applicable to Interim Financial Reporting (IAS 34) as of and for the Three and Six Months Ended June 30, 2025**	**F-B-3**
	Interim Condensed Consolidated Statements of Profit or Loss	F-B-5
	Interim Condensed Consolidated Statements of Comprehensive Income	F-B-6
	Interim Condensed Consolidated Statements of Financial Position	F-B-7
	Interim Condensed Consolidated Statements of Changes in Stockholders' Equity	F-B-8
	Interim Condensed Consolidated Statements of Cash Flows	F-B-9
	Selected Explanatory Notes to the Unaudited Interim Condensed Consolidated Financial Statements	F-B-10
19.2	**Audited Consolidated Financial Statements of BioNTech SE prepared in accordance with IFRS Accounting Standards as issued by the International Accounting Standards Board (IASB) and adopted by the EU and the additional requirements of German commercial law pursuant to Section 315e para. 3 in conjunction with para. 1 HGB as of and for the Year Ended December 31, 2024**	**F-B-36**
	Consolidated Statements of Profit or Loss	F-B-37
	Consolidated Statements of Comprehensive Income	F-B-38
	Consolidated Statements of Financial Position	F-B-39
	Consolidated Statements of Changes in Stockholders' Equity	F-B-40
	Consolidated Statements of Cash Flows	F-B-41
	Notes to the Consolidated Financial Statements	F-B-42
	Independent Auditor's Report	F-B-425
19.3	**Audited Consolidated Financial Statements of BioNTech SE prepared in accordance with International Financial Reporting Standards as adopted by the EU and the additional requirements of German commercial law pursuant to Section 315e para. 3 in conjunction with para. 1 HGB as of and for the Year Ended December 31, 2023**	**F-B-131**
	Consolidated Statements of Profit or Loss	F-B-132
	Consolidated Statements of Comprehensive Income	F-B-133
	Consolidated Statements of Financial Position	F-B-134
	Consolidated Statements of Changes in Stockholders' Equity	F-B-135
	Consolidated Statements of Cash Flows	F-B-136
	Notes to the Consolidated Financial Statements	F-B-137
	Independent Auditor's Report	F-B-201

19.4	**Audited Consolidated Financial Statements of BioNTech SE prepared in accordance with International Financial Reporting Standards as adopted by the EU and the additional requirements of German commercial law pursuant to Section 315e para. 3 in conjunction with para. 1 HGB as of and for the Year Ended December 31, 2022**	**F-B-207**
	Consolidated Statements of Profit or Loss	F-B-206
	Consolidated Statements of Comprehensive Income	F-B-207
	Consolidated Statements of Financial Position	F-B-208
	Consolidated Statements of Changes in Stockholders' Equity	F-B-209
	Consolidated Statements of Cash Flows	F-B-210
	Notes to the Consolidated Financial Statements	F-B-211
	Independent Auditor's Report	F-B-269
19.5	**Audited Annual Financial Statements of BioNTech SE prepared in accordance with German generally accepted accounting principles of the German Commercial Code (Handelsgesetzbuch) as of and for the Year Ended December 31, 2024**	**F-B-273**
	Balance Sheet	F-B-274
	Income Statement	F-B-276
	Notes to the Annual Financial Statements	F-B-277
	Independent Auditor's Report	F-B-314

Unaudited Interim Condensed Consolidated Financial Statements of BioNTech SE prepared in accordance with IFRS Accounting Standards as issued by the International Accounting Standards Board applicable to Interim Financial Reporting (IAS 34) as of and for the Three and Six Months Ended June 30, 2025

UNAUDITED INTERIM CONDENSED CONSOLIDATED FINANCIAL STATEMENTS

Interim Condensed Consolidated Statements of Profit or Loss		F-B-5
Interim Condensed Consolidated Statements of Comprehensive Income		F-B-6
Interim Condensed Consolidated Statements of Financial Position		F-B-7
Interim Condensed Consolidated Statements of Changes in Stockholders' Equity		F-B-8
Interim Condensed Consolidated Statements of Cash Flows		F-B-9
Selected Explanatory Notes to the Unaudited Interim Condensed Consolidated Financial Statements		F-B-10
1	Corporate Information	F-B-10
2	Basis of Preparation, Significant Accounting Policies	F-B-10
3	Revenues from Contracts with Customers	F-B-12
4	Income and Expenses	F-B-13
5	Business Combination	F-B-16
6	Income Taxes	F-B-18
7	Other Intangible Assets	F-B-19
8	Financial Assets and Financial Liabilities	F-B-20
9	Issued Capital and Reserves	F-B-25
10	Provisions	F-B-25
11	Contingent Liabilities	F-B-26
12	Related Party Disclosures	F-B-34
13	Events after the Reporting Period	F-B-34

Interim Condensed Consolidated Statements of Profit or Loss

(in millions €, except per share data)	Note	Three months ended June 30, 2025 *(unaudited)*	Three months ended June 30, 2024 *(unaudited)*	Six months ended June 30, 2025 *(unaudited)*	Six months ended June 30, 2024 *(unaudited)*
Revenues	3	260.8	128.7	443.6	316.3
Cost of sales	4.1	(76.4)	(59.8)	(160.2)	(118.9)
Research and development expenses	4.1	(509.1)	(584.6)	(1,034.7)	(1,092.1)
Sales and marketing expenses		(19.7)	(12.9)	(33.4)	(28.5)
General and administrative expenses	4.1	(117.7)	(170.9)	(224.6)	(287.9)
Other operating expenses	4.2	(117.2)	(290.8)	(165.7)	(314.7)
Other operating income	4.2	78.2	24.1	139.8	52.4
Operating loss		**(501.1)**	**(966.2)**	**(1,035.2)**	**(1,473.4)**
Finance income	4.3	105.4	167.7	228.0	345.3
Finance expenses	4.3	(7.0)	(7.3)	(40.9)	(9.5)
Loss before tax		**(402.7)**	**(805.8)**	**(848.1)**	**(1,137.6)**
Income taxes	6	16.1	(2.0)	45.7	14.7
Net loss		**(386.6)**	**(807.8)**	**(802.4)**	**(1,122.9)**
Loss per share					
Basic and diluted loss per share		(1.60)	(3.36)	(3.33)	(4.67)

The accompanying notes form an integral part of these unaudited interim condensed consolidated financial statements.

Interim Condensed Consolidated Statements of Comprehensive Income

(in millions €)	Note	Three months ended June 30, 2025 *(unaudited)*	Three months ended June 30, 2024 *(unaudited)*	Six months ended June 30, 2025 *(unaudited)*	Six months ended June 30, 2024 *(unaudited)*
Net loss		**(386.6)**	**(807.8)**	**(802.4)**	**(1,122.9)**
Other comprehensive income					
Other comprehensive income that may be reclassified to profit or loss in subsequent periods, net of tax					
Exchange differences on translation of foreign operations		(63.3)	8.3	(94.1)	23.7
Net other comprehensive income / (loss) that may be reclassified to profit or loss in subsequent periods		**(63.3)**	**8.3**	**(94.1)**	**23.7**
Other comprehensive loss that will not be reclassified to profit or loss in subsequent periods, net of tax					
Net gain / (loss) on equity instruments designated at fair value through other comprehensive income	8	24.9	(115.9)	(7.2)	(109.0)
Net other comprehensive income / (loss) that will not be reclassified to profit or loss in subsequent periods		**24.9**	**(115.9)**	**(7.2)**	**(109.0)**
Other comprehensive loss, net of tax		**(38.4)**	**(107.6)**	**(101.3)**	**(85.3)**
Comprehensive loss, net of tax		**(425.0)**	**(915.4)**	**(903.7)**	**(1,208.2)**

The accompanying notes form an integral part of these unaudited interim condensed consolidated financial statements.

Interim Condensed Consolidated Statements of Financial Position

(in millions €)	Note	June 30, 2025 *(unaudited)*	December 31, 2024
Assets			
Non-current assets			
Goodwill		364.1	380.6
Other intangible assets	5	1,487.0	790.4
Property, plant and equipment		1,017.8	935.3
Right-of-use assets		224.3	248.1
Contract assets		5.9	9.8
Other financial assets	8	2,504.8	1,254.0
Other non-financial assets		26.8	26.3
Deferred tax assets	6	77.8	81.7
Total non-current assets		**5,708.5**	**3,726.2**
Current assets			
Inventories		230.7	283.3
Trade and other receivables	8	1,368.3	1,463.9
Contract assets		8.7	10.0
Other financial assets	8	3,767.2	7,021.7
Other non-financial assets		215.0	212.7
Income tax assets	6	69.7	50.0
Cash and cash equivalents	8	10,269.5	9,761.9
Total current assets		**15,929.1**	**18,803.5**
Total assets		**21,637.6**	**22,529.7**
Equity and liabilities			
Equity			
Share capital	9	248.6	248.6
Capital reserve		1,447.9	1,398.6
Treasury shares		(8.2)	(8.6)
Retained earnings		18,295.6	19,098.0
Other reserves		(1,478.8)	(1,325.5)
Total equity		**18,505.1**	**19,411.1**
Non-current liabilities			
Lease liabilities, loans and borrowings	8	217.2	214.7
Other financial liabilities	8	145.0	46.9
Provisions	10	22.9	20.9
Contract liabilities	8	787.7	183.0
Other non-financial liabilities		80.4	87.5
Deferred tax liabilities	6	28.5	42.4
Total non-current liabilities		**1,281.7**	**595.4**
Current liabilities			
Lease liabilities, loans and borrowings	8	52.4	39.5
Trade payables and other payables	8	504.2	426.7
Other financial liabilities	8	40.9	1,443.4
Income tax liabilities	6	3.7	4.5
Provisions	10	145.6	144.8
Contract liabilities	8	945.4	294.9
Other non-financial liabilities		158.6	169.4
Total current liabilities		**1,850.8**	**2,523.2**
Total liabilities		**3,132.5**	**3,118.6**
Total equity and liabilities		**21,637.6**	**22,529.7**

The accompanying notes form an integral part of these unaudited interim condensed consolidated financial statements.

Interim Condensed Consolidated Statements of Changes in Stockholders' Equity

(in millions €)	Note	Equity attributable to equity holders of the parent					Total equity
		Share capital	Capital reserve	Treasury shares	Retained earnings	Other reserves	
As of January 1, 2024		**248.6**	**1,229.4**	**(10.8)**	**19,763.3**	**(984.6)**	**20,245.9**
Net loss		—	—	—	(1,122.9)	—	(1,122.9)
Other comprehensive loss		—	—	—	—	(85.3)	(85.3)
Total comprehensive loss		**—**	**—**	**—**	**(1,122.9)**	**(85.3)**	**(1,208.2)**
Share-based payments		—	2.9	—	—	31.7	34.6
As of June 30, 2024		**248.6**	**1,232.3**	**(10.8)**	**18,640.4**	**(1,038.2)**	**19,072.3**
As of January 1, 2025		**248.6**	**1,398.6**	**(8.6)**	**19,098.0**	**(1,325.5)**	**19,411.1**
Net loss		—	—	—	(802.4)	—	(802.4)
Other comprehensive loss		—	—	—	—	(101.3)	(101.3)
Total comprehensive loss		**—**	**—**	**—**	**(802.4)**	**(101.3)**	**(903.7)**
Share-based payments		—	49.3	0.4	—	(52.0)	(2.3)
As of June 30, 2025		**248.6**	**1,447.9**	**(8.2)**	**18,295.6**	**(1,478.8)**	**18,505.1**

The accompanying notes form an integral part of these unaudited interim condensed consolidated financial statements.

Interim Condensed Consolidated Statements of Cash Flows

(in millions €)	Three months ended June 30, 2025 *(unaudited)*	Three months ended June 30, 2024 *(unaudited)*	Six months ended June 30, 2025 *(unaudited)*	Six months ended June 30, 2024 *(unaudited)*
Operating activities				
Net loss	(386.6)	(807.8)	(802.4)	(1,122.9)
Income taxes	(16.1)	2.0	(45.7)	(14.7)
Loss before tax	**(402.7)**	**(805.8)**	**(848.1)**	**(1,137.6)**
Adjustments to reconcile loss before tax to net cash flows:				
Depreciation and amortization of property, plant, equipment, intangible assets and right-of-use assets	51.0	49.9	93.8	88.2
Share-based payment expenses	32.1	20.2	54.2	36.5
Net foreign exchange differences	12.2	(13.2)	60.5	(41.9)
Gain on disposal of property, plant and equipment	(0.3)	(0.2)	(0.4)	(0.2)
Finance income excluding foreign exchange differences	(105.4)	(167.7)	(228.0)	(342.6)
Finance expense excluding foreign exchange differences	6.6	4.8	14.5	9.5
Government grants	(18.5)	(3.1)	(33.0)	(12.2)
Other non-cash (income) / loss	—	—	(15.0)	—
Unrealized (gain) / loss on derivative instruments at fair value through profit or loss	(17.3)	5.0	(28.6)	6.7
Working capital adjustments:				
Decrease / (Increase) in trade and other receivables, contract assets and other assets	(400.4)	1,599.6	121.0	2,097.8
Decrease in inventories	22.8	5.3	56.6	17.6
(Decrease) / Increase in trade payables, other financial liabilities, other liabilities, contract liabilities, refund liabilities and provisions	914.6	760.8	(56.4)	472.8
Interest received and realized gains from cash and cash equivalents	73.1	80.8	191.7	280.2
Interest paid and realized losses from cash and cash equivalents	(2.7)	(1.6)	(5.8)	(5.3)
Income tax received / (paid), net	(14.9)	66.4	(27.1)	(192.4)
Share-based payments	(11.5)	(6.8)	(15.1)	(9.2)
Government grants received	7.8	32.8	31.0	42.0
Net cash flows from / (used in) operating activities	**146.5**	**1,627.2**	**(634.2)**	**1,309.9**
Investing activities				
Purchase of property, plant and equipment	(27.1)	(88.6)	(76.0)	(147.1)
Proceeds from sale of property, plant and equipment	0.5	0.2	1.0	0.2
Purchase of intangible assets	(3.1)	(52.7)	(572.3)	(131.1)
Acquisition of subsidiaries and businesses, net of cash acquired	—	—	(78.5)	—
Investment in other financial assets	(1,670.0)	(2,448.2)	(4,177.7)	(7,343.3)
Proceeds from maturity of other financial assets	1,635.3	2,347.9	6,085.9	5,075.5
Net cash flows from / (used in) investing activities	**(64.4)**	**(241.4)**	**1,182.4**	**(2,545.8)**
Financing activities				
Repayment of loans and borrowings	(3.7)	(2.3)	(8.2)	(2.3)
Payments related to lease liabilities	(9.6)	(20.6)	(18.9)	(28.4)
Net cash flows used in financing activities	**(13.3)**	**(22.9)**	**(27.1)**	**(30.7)**
Net increase / (decrease) in cash and cash equivalents	68.8	1,362.9	521.1	(1,266.6)
Change in cash and cash equivalents resulting from exchange rate differences	9.2	(3.3)	(6.9)	3.5
Change in cash and cash equivalents resulting from other valuation effects	6.6	40.5	(6.6)	(23.9)
Cash and cash equivalents at the beginning of the period	10,184.9	8,976.6	9,761.9	11,663.7
Cash and cash equivalents as of June 30	**10,269.5**	**10,376.7**	**10,269.5**	**10,376.7**

The accompanying notes form an integral part of these unaudited interim condensed consolidated financial statements.

Selected Explanatory Notes to the Unaudited Interim Condensed Consolidated Financial Statements

1. Corporate Information

BioNTech SE is a limited company incorporated and domiciled in Germany. The registered office is located in Mainz, Germany (An der Goldgrube 12, 55131 Mainz). The accompanying unaudited interim condensed consolidated financial statements present the financial position and the results of operation of BioNTech SE and its subsidiaries and have been prepared on a going concern basis in accordance with the IFRS Accounting Standards as issued by the International Accounting Standards Board. References to the "Company", "BioNTech", "Group", "we", "us" and "our" refer to BioNTech SE and its consolidated subsidiaries.

We are a global next-generation immunotherapy company pioneering novel medicines against cancer, infectious diseases and other serious diseases. Since our founding in 2008, we have focused on harnessing the power of the immune system to address human diseases with unmet medical needs. Our fully integrated model combines decades of research in immunology, translational drug discovery and development, a technology agnostic innovation engine, GMP manufacturing, and commercial capabilities to rapidly discover, develop and commercialize our marketed product and other candidate vaccines and therapies.

We have built a broad toolkit across multiple technology platforms with a focus on oncology, including investigational mRNA cancer immunotherapies, immunomodulators and targeted therapies. Our multi-technology combination of platforms positions us as pioneers in the field of individualized, patient-centric therapeutic approaches.

Our approach has generated a robust and diversified product pipeline across a range of technologies in oncology and infectious disease, and has led to the approval of our first marketed product, Comirnaty.

Our unaudited interim condensed consolidated financial statements as of and for the three and six months ended June 30, 2025 were authorized for issuance in accordance with a resolution of the Audit Committee of our Supervisory Board on August 1, 2025.

2. Basis of Preparation, Significant Accounting Policies

Basis of Preparation and Principles of Consolidation

The accompanying unaudited interim condensed consolidated financial statements as of and for the three and six months ended June 30, 2025 have been prepared in accordance with IAS 34 Interim Financial Reporting.

The unaudited interim condensed consolidated financial statements do not include all the information and disclosures required in the audited consolidated financial statements, and should be read in conjunction with our audited consolidated financial statements and accompanying notes included in our Annual Report on Form 20-F as of and for the year ended December 31, 2024.

We prepare and present our unaudited interim condensed consolidated financial statements in Euros and round numbers to millions of Euros. Accordingly, numerical figures rounded in the table context may be adjusted to match totals in some tables while some totals may not be the exact arithmetic aggregations of the figures.

The unaudited interim condensed consolidated financial statements as of and for the three and six months ended June 30, 2025, include BioNTech SE and its subsidiaries. All intercompany transactions and balances have been eliminated in consolidation.

Significant Accounting Judgments, Estimates and Assumptions and Accounting Policies

The preparation of the unaudited interim condensed consolidated financial statements requires our management to make judgments, estimates and assumptions that affect the reported amounts of revenues, expenses, assets, liabilities and contingent liabilities and the accompanying disclosures.

This includes but is not limited to our judgment relating to our collaboration with Pfizer, Inc., or Pfizer, as described under the subheading “Pfizer Agreement Characteristics” in Note 3 to our audited consolidated financial statements as of and for the year ended December 31, 2024. In order to determine our share of the collaboration partner’s gross profits, we used certain information from the collaboration partner, including revenues from the sale of products and certain other sharable expense items, some of which is based on preliminary data shared between the partners.

This further includes but is not limited to judgments relating to the impairment tests of our goodwill and intangible assets, as the outcome of these tests is highly dependent on management’s assumptions regarding future cash flow projections, which require significant judgments and assumptions about future developments. They can be affected by a variety of factors, including but not limited to peak sales assumptions, clinical trial success rates and/or estimation of weighted-average cost of capital. Changes to the assumptions underlying our goodwill and intangible assets impairment assessments could require material adjustments to the carrying amount of our recognized goodwill and intangible assets and may lead to impairment charges recognized in our condensed consolidated statements of profit or loss.

Judgment is also required including, but not limited to, when accounting for business combinations. This includes determining whether an intangible asset is identifiable and whether it should be recorded separately from goodwill. Additionally, estimating the acquisition date fair values in conjunction with the purchase price allocation and with the settlement of pre-existing relationships involves estimation uncertainty and discretionary decisions. The necessary measurements are based on information available on the acquisition date and on expectations and assumptions that have been deemed reasonable by management. These judgments, estimates and assumptions can materially affect our financial position and our profit or loss statements.

This further includes, but is not limited to, judgments related to our new collaboration with Bristol-Myers Squibb Company, or BMS, as described in Note 8 below. Determining the current and non-current portions of the contract liability as of June 30, 2025 required management judgment, as revenue related to the contractual payments is only recognized once the criteria in IFRS 15.9 are met when the amended and restated agreement is in effect. The selection of the appropriate method for measuring progress is based on the final terms of the collaboration, which are still subject to negotiations.

Management bases its judgments and estimates on parameters available at the time when the unaudited interim condensed consolidated financial statements were prepared. Existing circumstances and assumptions about future developments, however, may change due to market changes or circumstances arising that are beyond our control. Such changes are reflected in the assumptions when they occur.

The accounting policies adopted in the preparation of the unaudited interim condensed consolidated financial statements are consistent with those followed in the preparation of our audited consolidated financial statements as of and for the year ended December 31, 2024, except for income taxes, which are accounted for using the expected annual tax rate in our unaudited interim condensed consolidated financial statements (see Note 6).

Standards Applied for the First Time

IFRS Accounting Standards that were applied for the first time as of January 1, 2025, as disclosed in the notes to the audited consolidated financial statements as of and for the year ended December 31, 2024, had no impact on our unaudited interim condensed consolidated financial statements as of and for the three and six months ended June 30, 2025.

3. Revenues from Contracts with Customers

Disaggregated information on revenues

Set forth below is the disaggregation of our revenues from contracts with customers:

(in millions €)	Three months ended June 30, 2025	2024	Six months ended June 30, 2025	2024
COVID-19 vaccine revenues	153.3	71.9	286.3	196.1
Other revenues	107.5	56.8	157.3	120.2
Total	**260.8**	**128.7**	**443.6**	**316.3**

COVID-19 Vaccine Revenues

Our COVID-19 vaccine revenues were recognized from the supply and sales of our COVID-19 vaccine worldwide during the three and six months ended June 30, 2025 and 2024, mainly comprising our share of the collaboration partner's gross profit derived from sales in the collaboration partner's territory. Overall, our COVID-19 vaccine revenues amounted to €153.3 million and €286.3 million during the three and six months ended June 30, 2025, respectively. During the three and six months ended June 30, 2024, COVID-19 vaccine revenues amounted to €71.9 million and €196.1 million, respectively. During the three and six months ended June 30, 2025, our sales were higher compared to the prior year period, which were largely driven by higher volume of doses sold. Our COVID-19 vaccine revenues are subject to seasonal effects in the fall and winter of the northern hemisphere.

Other Revenues

Our other revenues were mainly derived from a pandemic preparedness contract with the German government and a one-time effect associated with Pfizer´s opt-out from the further development of our shingles program, BNT167 and the associated release of the respective contract liability, during the three and six months ended June 30, 2025 and 2024.

Revenues from contracts with customers were recognized as follows:

(in millions €)	Three months ended June 30, 2025	Three months ended June 30, 2024	Six months ended June 30, 2025	Six months ended June 30, 2024
Timing of revenue recognition				
Goods and services transferred at a point in time	70.2	21.1	137.0	54.6
Goods and services transferred over time	102.9	49.6	148.6	106.9
Revenue recognition applying the sales-based or usage-based royalty recognition constraint model [1]	87.7	58.0	158.0	154.8
Total	**260.8**	**128.7**	**443.6**	**316.3**

(1) Represents sales based on the share of the collaboration partners' gross profit.

4. Income and Expenses

4.1 General Expenses

Cost of Sales

Our cost of sales increased by €16.6 million, or 28%, from €59.8 million during the three months ended June 30, 2024 to €76.4 million during the three months ended June 30, 2025 and increased by €41.3 million, or 35%, from €118.9 million during the six months ended June 30, 2024 to €160.2 million during the six months ended June 30, 2025. While we recognized multiple positive extraordinary effects, for example derived from inventory valuation effects, in the respective prior year periods, changes in our cost of sales were additionally impacted by expenses arising from inventory write-downs to net realizable value amounting to €26.6 million and €64.3 million during the three and six months ended June 30, 2025, respectively, compared to €27.6 million and €63.6 million during the three and six months ended June 30, 2024, respectively. The inventories valued at net realizable value in our consolidated statement of financial position as of June 30, 2025 reflect contractual compensation payments.

Research and Development Expenses

Our research and development expenses decreased by €75.5 million, or 13%, from €584.6 million during the three months ended June 30, 2024 to €509.1 million during the three months ended June 30, 2025 and decreased by €57.4 million, or 5%, from €1,092.1 million during the six months ended June 30, 2024 to €1,034.7 million during the six months ended June 30, 2025. The decreases were mainly driven by the reprioritization of clinical trials towards focus programs.

General and Administrative Expenses

Our general and administrative expenses decreased by €53.2 million, or 31%, from €170.9 million during the three months ended June 30, 2024 to €117.7 million during the three months ended June 30, 2025 and decreased by €63.3 million, or 22%, from €287.9 million during the six months ended June 30, 2024 to €224.6 million during the six months ended June 30, 2025. The decrease was primarily driven by a reduction in external services.

4.2 Other Operating Result

The other operating result recognized during the three and six months ended June 30, 2025 and 2024 is shown in the following table:

	Three months ended June 30,		Six months ended June 30,	
(in millions €)	**2025**	**2024**	**2025**	**2024**
Other operating result				
Other operating income	**78.2**	**24.1**	**139.8**	**52.4**
Gain on derivative instruments at fair value through profit or loss	41.8	—	68.0	—
Grants	18.4	3.1	32.9	12.2
Bargain purchase	—	—	15.0	—
Foreign exchange differences, net	—	17.3	—	34.4
Other	18.0	3.7	23.9	5.8
Other operating expenses	**(117.2)**	**(290.8)**	**(165.7)**	**(314.7)**
Pipeline prioritization costs	(43.6)	—	(43.6)	—
Contractual disputes / settlements	—	(239.1)	—	(239.1)
Litigation costs	(23.4)	(21.7)	(49.3)	(42.9)
Loss on derivative instruments at fair value through profit or loss	—	(29.2)	—	(31.9)
Foreign exchange differences, net	(41.0)	—	(54.8)	—
Other	(9.2)	(0.8)	(18.0)	(0.8)
Total other operating result	**(39.0)**	**(266.7)**	**(25.9)**	**(262.3)**

Our total other operating result increased by €227.7 million, or 85%, from a negative operating result of €266.7 million during the three months ended June 30, 2024 to a negative operating result of €39.0 million during the three months ended June 30, 2025 and increased by €236.4 million, or 90%, from a negative operating result of €262.3 million during the six months ended June 30, 2024 to a negative operating result of €25.9 million during the six

months ended June 30, 2025. These changes are mainly due to effects from contractual disputes in the respective prior year period, which exceeded the impact of pipeline prioritization costs and the net loss from foreign exchange differences and related effects from derivative instruments in the current period. For the three and six months ended June 30, 2025, our pipeline prioritization costs amounted to €43.6 million and mainly related to adjusting capacities in different sites as well as deferred costs in the context of reducing our workforce in certain areas.

As of June 30, 2025, the amount of our grants deferred disclosed as other non-financial liabilities in our unaudited interim condensed consolidated financial statements amounted to €79.7 million compared to €85.2 million as of December 31, 2024. Compared to the balance sheet amount for the year ended December 31, 2024, the total nominal amount of government grants and similar grants increased mainly due to an additional grant signed of approximately £129.0 million with the UK Government.

4.3 Finance Result

The finance result recognized during the three and six months ended June 30, 2025 and 2024 is shown in the following table:

(in millions €)	Three months ended June 30, 2025	Three months ended June 30, 2024	Six months ended June 30, 2025	Six months ended June 30, 2024
Finance result				
Finance income	**105.4**	**167.7**	**228.0**	**345.3**
Gains from financial instruments measured at amortized cost	68.9	118.6	145.9	237.5
Gains from financial instruments measured at fair value	36.4	49.1	82.0	105.1
Foreign exchange differences, net	—	—	—	2.7
Other	0.1	—	0.1	—
Finance expenses	**(7.0)**	**(7.3)**	**(40.9)**	**(9.5)**
Expenses from financial instruments measured at fair value	(1.7)	(0.3)	(4.4)	(0.4)
Expenses from financial instruments measured at amortized cost without expected credit losses	(1.5)	(1.1)	(2.8)	(1.7)
Foreign exchange differences, net	(0.4)	(2.5)	(26.4)	—
Other	(3.4)	(3.4)	(7.3)	(7.4)
Total finance result	**98.4**	**160.4**	**187.1**	**335.8**

Our finance result during the three and six months ended June 30, 2025 and 2024 was mainly derived from returns, such as interests, resulting from our financial investments as well as fair value adjustments of our money market funds. Our total finance result decreased by €62.0 million, or 39%, from a positive finance result of €160.4 million during the three months ended June 30, 2024 to a positive finance result of €98.4 million during the three months ended June 30, 2025 and decreased by €148.7 million, or 44%, from a positive finance result of €335.8 million during the six months ended June 30, 2024 to a positive finance result of €187.1 million during the six months ended June 30, 2025. These changes are mainly due to lower interest income and a shift from positive to negative foreign exchange differences, primarily derived from our security investments disclosed as cash equivalents and bank cash accounts held in foreign currency.

5. Business Combination

Acquisition of Biotheus

On November 13, 2024, our subsidiary, BioNTech Collaborations GmbH, entered into an agreement and plan of merger, or the Merger Agreement, with Biotheus, a clinical-stage biotechnology company dedicated to the discovery and development of novel antibodies to address unmet medical needs of patients with oncological or inflammatory diseases, to acquire 100 percent of the issued share capital of Biotheus. The acquisition supports the global execution of our oncology strategy and provides full global rights to BNT327, an investigational PD-L1 x VEGF-A bispecific antibody, with potential to replace current checkpoint inhibitor standard of care treatments for solid tumors.

By closing the acquisition, we gained full rights to Biotheus' other pipeline candidates and its in-house bispecific antibody-drug conjugate capability. The acquisition has expanded our footprint in China, adding a local research and development hub to conduct clinical trials. In addition, we have gained a biologics manufacturing facility to contribute to our future global manufacturing and supply, and more than 300 Biotheus employees in R&D, manufacturing and enabling functions have joined the BioNTech workforce.

Following the satisfaction of several customary closing conditions and regulatory approvals as defined in the Merger Agreement, the acquisition closed on January 31, 2025.

Since the completion of the acquisition took place in January 2025, we performed an allocation of the total consideration and the underlying assets acquired and liabilities assumed based on their fair values using the information available as of the acquisition date. Due to the complexity of the transaction, this allocation is still preliminary and might be subject to change. The total consideration and the fair values determined in accordance with IFRS 3 of the identified net assets acquired of Biotheus as of January 31, 2025, are as follows:

(in millions €)	Fair value recognized on acquisition Biotheus
Assets	
Intangible assets	172.8
Property, plant and equipment	70.7
Cash and cash equivalents	122.4
Other assets non-current and current	20.6
Total assets	**386.5**
Liabilities	
Non-current liabilities	36.3
Current liabilities	55.1
Total liabilities	**91.4**
Total identifiable net assets at fair value	**295.1**
Bargain from the acquisition	(15.0)
Total consideration	**280.1**
Consideration	
Total purchase price	847.4
Upfront payment	767.8
Contingent consideration (milestones)	79.6
Payments in connection with pre-existing relationships	(567.3)
Total consideration	**280.1**

Upon closing and under the terms of the agreement, we paid Biotheus shareholders an upfront payment of €767.8 million in cash. Furthermore, we agreed to pay additional performance-based contingent payments, if certain milestones are met. At the acquisition date, the contingent consideration was recognized at its fair value of €79.6 million based on discounted cash flow projections in connection with performance-based contingent payments. The lower end of the bandwidth of possible outcomes of the contingent consideration is zero, and the upper limit is €144.3 million.

Under the terms of the agreement, we also transferred American Depositary Shares, or ADSs, to eligible shareholders who will provide services to the Group. Under IFRS 3, this is considered remuneration and will be recognized as equity-settled share-based payment, based on the grant date fair value (€49.2 million) as personnel expense over a four-year service period.

The purchase price is mainly allocated to the settlement of our pre-existing relationship in connection with the License and Collaboration Agreement with Biotheus entered into in November 2023, which comprised exclusive rights to the development, manufacturing and commercialization of BNT327/PM8002 ex-Greater China. The amount is separated from the remaining purchase price to be transferred for the acquired business of Biotheus and amounts to €565.1 million. This amount for the settlement of the pre-existing relationship is identified

based on the fair value of the settled rights of Biotheus in connection with contingent payments in relation to the License and Collaboration Agreement, including development, regulatory and sales milestones and royalties. This fair value was determined using a Discounted Cash flow model based on a business plan for the compound, using an appropriate WACC. The fair value of these rights is recorded as subsequent acquisition cost to our BNT327/PM8002 ex-Greater China rights. As the requirements under IAS 12 for the initial recognition exemption are fulfilled, we did not record a correspondent deferred tax liability. We did not identify a gain or a loss in connection with the settlement of the pre-existing relationship.

The consideration for the acquired business of Biotheus is allocated to net assets acquired, which mainly include identified intangible assets in connection with Biotheus' BNT327/PM8002 Greater China rights and other clinical pipeline candidates, property, plant and equipment, cash and liabilities assumed. The fair values of the BNT327/PM8002 Greater China rights and other clinical pipeline candidates were determined based on the direct cash flow approach and amount to €167.7 million.

A bargain purchase of €15.0 million was recognized in other operating income, which technically results from the separation of the identified amount in connection with the settlement of the pre-existing relationships and the application of the initial recognition exemption under IAS 12.

Transaction costs of €6.9 million were expensed and are included in general and administrative expenses. Since the acquisition, Biotheus' impact on our revenue and profit and loss for the period has been immaterial. Accordingly, pro-forma amounts for our revenue and profit and loss for the financial year, which were calculated on the assumption that the acquisition had taken place at the beginning of the year, would not materially differ from the actual figures reported.

6. Income Taxes

During the six months ended June 30, 2025 and 2024, income taxes were calculated based on the best estimate of the weighted average annual income tax rates expected for the full financial years (estimated annual effective income tax rates) on ordinary income before tax adjusted by the tax effect of any discrete items. During the six months ended June 30, 2025, our effective income tax rate was approximately 5.4%. During the six months ended June 30, 2024, our effective income tax rate was approximately 1.3%.

The effective income tax rate was mainly driven by the expected negative result for 2025 and management's assessment of the requirements in International Accounting Standards, or IAS, 12, including on the character and amounts of taxable future profits, the periods in which those profits are expected to occur, and the availability of tax planning opportunities. Thus, in countries where the requirements of IAS 12 were not fulfilled, no deferred tax asset was recognized. Such assessment takes into account the fact that there is an inherent risk of failure in pharmaceutical development and uncertainty of approvals that depend on external regulatory agencies' opinions. As of June 30, 2025, it is considered highly probable that taxable profits for the U.S. tax group will be available against which the deferred tax assets can be utilized in the near future, fulfilling the requirements set out by IAS 12.

We apply the mandatory exception to recognizing and disclosing information about deferred tax assets and liabilities arising from Pillar Two income taxes. Furthermore, we reviewed the corporate structure with regard to the Pillar Two Model Rules in various jurisdictions. Since the Group's relevant effective tax rate for Pillar Two purposes is expected mainly above 15% in all jurisdictions in which it operates, it has been determined that the Group is not materially subject to Pillar Two "top-up" taxes. Therefore, the consolidated financial statements for the three and six months ended June 30, 2025 do not include further information otherwise required by paragraphs 88B and 88C of IAS 12.

The income taxes recognized during the three and six months ended June 30, 2025 and 2024 are shown in the following table:

	Three months ended June 30,		Six months ended June 30,	
(in millions €)	**2025**	**2024**	**2025**	**2024**
Current income taxes	4.0	14.3	6.7	6.5
Deferred taxes	(20.1)	(12.3)	(52.4)	(21.2)
Income taxes expenses / (income)	**(16.1)**	**2.0**	**(45.7)**	**(14.7)**

7. Other Intangible Assets

We identify indications of impairment of other intangible assets using various factors from external and internal information sources, including deviations from sales forecasts and the analysis of changes in medium-term planning.

During the three months ended June 30, 2025, we identified a triggering event in connection with the asset related to the product candidate BNT323/DB-1303 due to revision of the clinical development plan. We performed an impairment test based on the valuation parameters used in the recent annual impairment test, which has been adjusted to reflect the revised clinical development plan. The impairment test performed did not reveal any impairment loss. We did not identify any further indication that other intangible assets may be impaired during the three months ended June 30, 2025.

8. Financial Assets and Financial Liabilities

Financial Assets and Liabilities at Amortized Cost and at Fair Value through OCI and Profit or Loss

Set out below is an overview of financial assets and liabilities at amortized cost and at fair value through OCI and profit or loss, as of the dates indicated:

June 30, 2025

	Carrying amount			Fair value			
(in millions €)	Current	Non-current	Total	Level 1 (Fair value)	Level 2 (Fair value)	Level 3 (Fair value)	Total
Financial assets subsequently measured at fair value through profit or loss							
Foreign exchange forward contracts	24.4	—	**24.4**	—	24.4	—	**24.4**
Security investments disclosed as cash and cash equivalents	5,275.1	—	**5,275.1**	5,275.1	—	—	**5,275.1**
Other financial assets	—	38.5	**38.5**	—	—	38.5	**38.5**
Financial assets subsequently measured at fair value through OCI							
Non-listed equity investments	—	1.5	**1.5**	—	—	1.5	**1.5**
Listed equity investments	—	90.0	**90.0**	90.0	—	—	**90.0**
Financial assets subsequently measured at amortized costs[1]							
Security investments disclosed as other financial assets	3,363.8	2,356.0	**5,719.8**	—	—	—	**5,719.8**
Security investments disclosed as cash and cash equivalents	4,514.4	—	**4,514.4**	—	—	—	**4,514.4**
Cash at banks and on hand	480.0	—	**480.0**	—	—	—	**480.0**
Trade and other receivables	1,368.3	—	**1,368.3**	—	—	—	**1,368.3**
Reimbursement asset	378.3	—	**378.3**	—	—	—	**378.3**
Other financial assets	0.7	18.8	**19.5**	—	—	—	**19.5**
Financial liabilities subsequently measured at fair value							
Foreign exchange forward contracts	0.2	—	**0.2**	—	0.2	—	**0.2**
Contingent consideration	0.9	128.5	**129.4**	—	—	129.4	**129.4**
Financial liabilities subsequently measured at amortized costs[1]							
Loans and borrowings	12.2	27.3	**39.5**	—	—	—	**39.5**
Trade payables and other payables	504.2	—	**504.2**	—	—	—	**504.2**
Other financial liabilities	39.8	16.5	**56.3**	—	—	—	**56.3**
Financial liabilities subsequently not measured according to IFRS 9							
Lease liabilities	40.2	189.9	**230.1**	—	—	—	**230.1**

(1) Fair values for financial assets and liabilities at amortized costs are not disclosed as the book values represent a reasonable approximation.

Additional developments in our financial assets and liabilities during the six months ended June 30, 2025 mainly resulted from a reallocation of existing capital and from expenditures for our operating business. This led to a decrease of €1,672.4 million in security investments disclosed as cash and cash equivalents subsequently measured at fair value through profit and loss (money market funds) and a decrease of €1,877.5 million in security investments disclosed as other financial assets subsequently measured at amortized costs (for example, bonds and commercial paper) compared to year-end 2024. Security investments disclosed as cash and cash equivalents subsequently measured at amortized cost increased by €2,150.0 million during the six months ended June 30, 2025 due to a focus on short-term investments.

On June 2, 2025, we and Bristol-Myers Squibb Company, or BMS, announced a global strategic partnership to co-develop and co-commercialize our next-generation bispecific antibody candidate, BNT327, broadly for multiple solid tumor types. Under the terms of the initial agreement, the companies will jointly share development and manufacturing costs on a 50:50 basis. Global profits and losses will be equally shared between us and BMS. In addition, we are eligible to receive an upfront payment amounting to $1.5 billion and $2.0 billion total in non-contingent anniversary payments through 2028 as well as up to $7.6 billion in additional development, regulatory and commercial milestone payments. As of June 30, 2025, trade and other receivables included mainly the upfront payment in the amount of €1,279.9 million. The trade and other receivables as of December 31, 2024 mainly included the gross profit share for the third and fourth quarter of 2024 under our collaboration with Pfizer, which have been settled. We did not recognize revenues in relation to the arrangement with BMS as of June 30, 2025, as the initial agreement did not meet the requirements of a contract with a customer under IFRS 15. Therefore, as of June 30, 2025, a contract liability in the amount of the upfront payment (€1,313.6 million, translated as of the contract date of the initial agreement, June 2, 2025) was recognized. Following the initial agreement, we and BMS are negotiating an amended and restated agreement that governs the collaboration, including in particular the performance-related rights and obligations.

In total, our cash and security investments decreased by €1,369.9 million compared to December 31, 2024.

The other financial liabilities decreased by €1,369.9 million during the six months ended June 30, 2025, which mainly related to the settlement of contractual disputes.

December 31, 2024

(in millions €)	Carrying amount			Fair value			
	Current	Non-current	Total	Level 1 (Fair value)	Level 2 (Fair value)	Level 3 (Fair value)	Total
Financial assets subsequently measured at fair value through profit or loss							
Foreign exchange forward contracts	11.9	—	**11.9**	—	11.9	—	**11.9**
Security investments disclosed as cash and cash equivalents	6,947.5	—	**6,947.5**	6,947.5	—	—	**6,947.5**
Other financial assets	—	39.6	**39.6**	—	—	39.6	**39.6**
Financial assets subsequently measured at fair value through OCI							
Non-listed equity investments	—	1.5	**1.5**	—	—	1.5	**1.5**
Listed equity investments	—	92.7	**92.7**	92.7	—	—	**92.7**
Financial assets subsequently measured at amortized costs[(1)]							
Security investments disclosed as other financial assets	6,536.2	1,061.1	**7,597.3**	—	—	—	**7,597.3**
Security investments disclosed as cash and cash equivalents	2,364.4	—	**2,364.4**	—	—	—	**2,364.4**
Cash at banks and on hand	450.0	—	**450.0**	—	—	—	**450.0**
Trade and other receivables	1,463.9	—	**1,463.9**	—	—	—	**1,463.9**
Reimbursement asset	473.6	40.9	**514.5**	—	—	—	**514.5**
Other financial assets	—	18.2	**18.2**	—	—	—	**18.2**
Financial liabilities subsequently measured at fair value							
Foreign exchange forward contracts	16.3	—	**16.3**	—	16.3	—	**16.3**
Contingent consideration	0.9	46.9	**47.8**	—	—	47.8	**47.8**
Financial liabilities subsequently measured at amortized costs[(1)]							
Trade payables and other payables	426.7	—	**426.7**	—	—	—	**426.7**
Other financial liabilities	1,426.2	—	**1,426.2**	—	—	—	**1,426.2**
Financial liabilities subsequently not measured according to IFRS 9							
Lease liabilities	39.5	214.7	**254.2**	—	—	—	**254.2**

(1) Fair values for financial assets and liabilities at amortized costs are not disclosed as the book values represent a reasonable approximation.

Equity investments designated at Fair Value through OCI

(in millions €)	Fair value as of June 30, 2025	Fair value as of December 31, 2024
Investment in Autolus	64.8	75.4
Investment in Ryvu	14.6	17.3
Investment in DualityBio	10.6	—
Other investments	1.5	1.5
Total	**91.5**	**94.2**

In April 2025, we invested €4.5 million in DualityBio.

Financial investments in equity instruments measured at fair value through other comprehensive income comprise the following effects:

(in millions €)	Three months ended June 30, 2025	Three months ended June 30, 2024	Six months ended June 30, 2025	Six months ended June 30, 2024
Net gain / (loss) on equity instruments designated at fair value through other comprehensive income	24.9	(115.9)	(7.2)	(109.0)
Total	**24.9**	**(115.9)**	**(7.2)**	**(109.0)**

Measurement of fair values

The following table shows the valuation techniques used in measuring fair values for financial instruments in our consolidated statements of financial position, as well as the significant unobservable inputs used.

Type	Valuation technique	Significant unobservable inputs
Forward exchange contracts	Discounted cash flow using par method. Expected future cash flows based on foreign exchange forwards discounted over the respective remaining term of the contracts using the respective deposit interest rates and spot rates.	n/a
Non-listed equity investments	Quantitative and qualitative factors such as actual and forecasted results, cash position and financing round valuations.	• Actual and forecasted results • Net Asset Value • Cash position • Nature and pricing indication of latest financing round
Listed equity investments	Stock prices of the listed companies and applicable exchange rates, if the listing is in a foreign currency.	n/a
Money market funds	Quoted prices on an active market.	n/a
Contingent consideration	Present value of expected future payments and reflecting changes in expected achievement of underlying performance parameters and compounding effects.	• Expected future payments • Applied cost of capital
Royalty assets	Present value of expected future cash flows.	• Expected future cash flows • Applied cost of capital

Recurring Fair Values (Level 3)

The following table shows the recurring fair value measurement of contingent consideration and royalty assets as well as the effect of the measurements on our unaudited interim condensed consolidated statements of profit or loss for the current period.

(in millions €)	Financial assets Other financial assets	Financial liabilities Contingent consideration
As of January 1, 2024	**—**	**(38.8)**
Additions	37.7	—
Net effect on profit or loss - Finance income / (expense)		
Net change in fair value	5.7	(3.3)
As of June 30, 2024	**43.4**	**(42.1)**
As of January 1, 2025	**39.6**	**(47.8)**
Additions	—	(79.6)
Net effect on profit or loss - Other operating income / (expense)		
Net change in fair value	—	4.3
Net effect on profit or loss - Finance income / (expense)		
Net change in fair value	(1.1)	(6.4)
Net effect on other comprehensive income		
Net change in fair value	—	0.1
As of June 30, 2025	**38.5**	**(129.4)**

The sensitivity of the fair values of royalty assets to the significant, unobservable, variable input factors, with all other factors remaining constant, is shown in the following table:

Royalty assets

Input factor	Change in assumptions	Change in fair value with increasing input factor (in millions €)	Change in fair value with decreasing input factor (in millions €)
Cash flow projections	10%	4.5	(4.5)
Discount rate	1%	(3.6)	4.0

The sensitivity of the fair values of contingent consideration to the significant, unobservable, variable input factors, with all other factors remaining constant, is shown in the following table:

Contingent consideration

Input factor	Change in assumptions	Change in fair value with increasing input factor (in millions €)	Change in fair value with decreasing input factor (in millions €)
Cash flow projections	10%	11.9	(11.9)
Discount rate	1%	(3.2)	3.3

The estimated fair value of non-listed equity investments would, for example, increase (decrease) if the price of the latest financing round of the respective investment were to increase (decrease) and the overall company value were higher (lower).

Risk Management Activities

No changes have occurred regarding our risk management activities as disclosed in the notes to our audited consolidated financial statements included in our Annual Report on Form 20-F as of and for the year ended December 31, 2024.

9. Issued Capital and Reserves

As of June 30, 2025, the number of shares outstanding was 240,398,724. This amount excludes 8,153,476 shares held in treasury. As of December 31, 2024, the number of shares outstanding was 239,970,804, excluding 8,581,396 shares held in treasury.

10. Provisions

(in millions €)	June 30, 2025	December 31, 2024
Contractual disputes / settlements	54.7	85.7
Obligations from onerous CMO contracts	50.7	50.7
Other	63.1	29.3
Total	**168.5**	**165.7**
Total current	145.6	144.8
Total non-current	22.9	20.9

As of June 30, 2025, our current provisions included €54.7 million in contractual disputes mainly related to collaborators regarding, among other things, the interpretation of each party's obligations or the amounts payable under the respective agreements. The decrease in obligations identified as contractual disputes compared to December 31, 2024 was mainly due to entering settlement agreements and a reclassification to financial liabilities.

As of June 30, 2025, our current provisions included €50.7 million (€50.7 million as of December 31, 2024) of obligations for production capacities derived from contracts with contract manufacturing organizations, or CMOs, that became redundant.

As of June 30, 2025, our current provisions included €63.1 million in other obligations mainly comprising employee related obligations such as restructuring due to pipeline prioritization, social security costs related to share based payment programs as well as inventor remunerations (€29.3 million as of December 31, 2024, mainly comprising employee related obligations). The change of €33.8 million compared to December 31, 2024, related mainly to additions.

11. Contingent Liabilities

Our contingent liabilities include, but are not limited to, intellectual property disputes and contractual disputes regarding, among other things, the interpretation of each party's obligations or the amounts payable under the respective agreements, product-related disputes, and actions by or on behalf of our shareholders.

From time to time, in the normal course and conduct of our business, we may be involved in proceedings with third parties, including proceedings regarding, for example, the use and/or remuneration for use of such third party's intellectual property. As of June 30, 2025, none of the intellectual property-related considerations outlined below, of which we have either been notified, or for which potential claims could be brought against us or our subsidiaries in the future, fulfill the criteria for recording a provision.

We are subject to an increasing number of product-related disputes. Our product liability claims often involve highly complex issues related to medical causation, correctness and completeness of product information (Summary of Product Characteristics/package leaflet) as well as label warnings and reliance thereon, scientific evidence and findings, actual and provable defectiveness and injury, and other matters. These complexities vary from matter to matter. As of June 30, 2025, none of these claims fulfill the criteria for recording a provision.

We are currently subject to certain claims by or on behalf of our shareholders. As of June 30, 2025, these claims do not fulfill the criteria for recording a provision.

Substantially all of our contingent liabilities are subject to significant uncertainties and, therefore, determining the likelihood of a loss and/or the measurement of any loss can be complex. Consequently, we are unable to estimate the range of reasonably possible loss. Our assessments, which result from a complex series of judgments about future events and uncertainties, are based on estimates and assumptions that have been deemed reasonable by management, but that may prove to be incomplete or inaccurate, and unanticipated events and circumstances may occur that might cause us to change those estimates and assumptions. We currently do not believe that any of these matters will have a material adverse effect on our financial position, and will continue to monitor the status of these and other claims that may arise. However, we could incur judgments, enter into settlements or revise our expectations regarding the outcome of matters, which could have a material adverse effect on our results of operations and/or our cash flows in the period in which the amounts are accrued or paid. We will continue to evaluate whether, if circumstances were to change in the future, the recording of a provision may be needed and whether potential indemnification entitlements exist against any such claim.

Certain pending matters to which we are a party are discussed below.

Alnylam Proceedings

In March 2022, Alnylam Pharmaceuticals, Inc., or Alnylam, filed a lawsuit against Pfizer and Pharmacia & Upjohn Co. LLC in the U.S. District Court for the District of Delaware alleging that an existing patent owned by Alnylam, U.S. Patent No. 11,246,933, or the '933 Patent, is infringed by the cationic lipid used in Comirnaty, and seeking monetary relief, the amount of which is not specified in their filings. We filed a counterclaim to become party to the Alnylam proceeding, and in June 2022, Alnylam added to its claims allegations that we induced infringement of the '933 Patent. Additionally, in July 2022, Alnylam filed a lawsuit against us,

our wholly owned subsidiary, BioNTech Manufacturing GmbH, Pfizer and Pharmacia & Upjohn Co. LLC in the U.S. District Court for the District of Delaware alleging that we also induced infringement of a newly issued patent, U.S. Patent No. 11,382,979, or the '979 Patent, which is a continuation of the '933 Patent. The two lawsuits were consolidated on July 28, 2022. In May 2023, Alnylam filed a third lawsuit against Pfizer Inc. and Pharmacia & Upjohn Co. LLC in the U.S. District Court for the District of Delaware alleging infringement of U.S. Patent Nos. 11,633,479; 11,633,480; 11,612,657; and 11,590,229, all of which are continuations of the '933 Patent. We filed a counterclaim to become party to the new proceeding, and in July 2023, Alnylam added to its claims allegations that we induced infringement of the four new patents. All of the lawsuits have been consolidated into a single proceeding. On February 24, 2025, Alnylam voluntarily dismissed U.S. Patent No. 11,633,480, with prejudice, from the lawsuit. On May 13, 2025, Alnylam filed an unopposed motion to stay the litigation and to withdraw its opposition to our motion for summary judgment of noninfringement, and requested that the Court enter judgment of noninfringement in our favor. The Court granted the stay on May 13, 2025. On July 30, 2025, the Court entered a final judgment of noninfringement of the asserted claims of all five patents. Alnylam may seek to appeal this judgment.

We believe we have strong defenses against the allegations claimed relative to each of the patents and intend to vigorously defend ourselves in the proceedings mentioned above. However, our analysis of Alnylam's claims is ongoing and complex, and we believe the outcome of the suit remains substantially uncertain. Taking into account discussions with our external lawyers, we do not consider the probability of an outflow of resources to be sufficient to recognize a provision at the balance sheet date. In our opinion, these matters constitute contingent liabilities as of the balance sheet date. However, it is currently impractical for us to estimate with sufficient reliability the respective contingent liabilities.

CureVac Proceedings

Infringement Proceedings – EP'122, DE'961, DE'974, DE'575, and EP'668

In July 2022, CureVac AG, or CureVac, filed a lawsuit against us and our wholly owned subsidiaries, BioNTech Manufacturing GmbH and BioNTech Manufacturing Marburg GmbH, in the Düsseldorf Regional Court, alleging *Comirnaty's* infringement of one European patent, EP1857122B1, or EP'122, and three Utility Models DE202015009961U1, DE202015009974U1, and DE202021003575U1. In August 2022, CureVac added European Patent EP3708668B1, or EP'668, to its German lawsuit.

On August 15, 2023, the Düsseldorf Regional Court held a hearing on infringement with respect to all five IP rights. At the hearing, the Court stated it would render its infringement ruling with respect to EP'122 on December 28, 2023. On September 28, 2023, the Court issued orders suspending its infringement rulings with respect to the remaining four IP rights (DE'961, DE'974, DE'575, and EP'668) pending validity decisions in the DE'961, DE'974, and DE'575 cancellation proceedings before the German Patent and Trademark Office and in the EP'668 opposition proceedings before the Opposition Division of the European Patent Office, or the EPO. In the September 28th orders, the Court explained that it was suspending its infringement rulings until validity decisions are reached, while contemporaneously noting concerns regarding the validity of DE'961, DE'974, DE'575, and EP'668. After EP'122 was declared invalid in the first-instance nullity proceedings by the Federal Patent Court on

December 19, 2023 (see below), on December 27, 2023, the Düsseldorf Regional Court canceled the December 28, 2023 decision date and stayed the infringement proceedings as to EP'122 until a final appellate decision is rendered as to the validity of EP'122 by the Federal Court of Justice. On June 7, 2024, CureVac waived DE'575 and withdrew this utility model from the infringement proceedings.

On July 1, 2024, the EPO Opposition Division issued a preliminary opinion noting that it believes EP'668 is likely invalid. The EPO Opposition Division held an oral hearing regarding the validity of EP'668 between March 25-27, 2025. At the conclusion of this hearing, the Opposition Division upheld EP'668 in amended form, but only after finding that the alleged technical effect – increased protein expression – was not achieved across the broad scope of the amended claim. The written decision by the Opposition Division to uphold EP'668 in amended form was issued on July 11, 2025, and BioNTech and Pfizer intend to appeal this written decision. An oral hearing with respect to infringement of EP'668 was scheduled by the Düsseldorf Regional Court for July 1, 2025, but has been rescheduled for November 6, 2025. On July 3, 2025, GlaxoSmithKline Biologicals SA filed a request seeking to intervene in the EP'668 infringement proceedings.

Infringement Proceedings – EP'755, DE'123, and DE'130

In July 2023, CureVac SE filed a second lawsuit against us and our wholly owned subsidiaries, BioNTech Manufacturing GmbH and BioNTech Manufacturing Marburg GmbH, in the Düsseldorf Regional Court, alleging *Comirnaty's* infringement of one European patent, EP4023755B1, or EP'755, and two Utility Models DE202021004123U1, and DE202021004130U1. On June 7, 2024, CureVac waived DE'123 and withdrew this utility model from the infringement proceedings. The Court has stayed the infringement proceedings with respect to DE'130 pending a validity decision in the co-pending cancellation proceeding before the German Patent and Trademark Office, where an oral hearing has been scheduled for November 18, 2025. On July 24, 2024, the EPO Opposition Division issued a preliminary opinion noting that it believes EP'755 is likely invalid, and held a three-day oral hearing beginning on May 13, 2025. At the conclusion of the hearing, the EPO Opposition Division upheld EP'755 in amended form. We intend to appeal the Opposition Division's written decision upon its issuance. A hearing on infringement with respect to EP'755 was to occur in the Düsseldorf Regional Court on July 1, 2025, but this has been rescheduled for November 6, 2025. On July 3, 2025, GlaxoSmithKline Biologicals SA filed a request to intervene in the EP'755 infringement proceedings.

Nullity Proceedings – EP'122

In September 2022, we filed a nullity action in the Federal Patent Court of Germany seeking a declaration that EP'122 is invalid. In April 2023, the Federal Patent Court of Germany issued a preliminary opinion in the EP'122 nullity action in support of the validity of EP'122. The preliminary opinion does not address any infringement of EP'122. The preliminary opinion is a preliminary assessment by the court of the merits of a claim, and is non-binding. On December 19, 2023, the Federal Patent Court held an oral hearing, after which it nullified EP'122. On April 25, 2024, the Federal Patent Court issued a judgment containing its written reasons for nullifying EP'122. On May 6, 2024, CureVac appealed the judgment, which is currently pending. An oral hearing on this appeal is scheduled for July 2026.

Cancellation Proceedings – DE'961, DE'974, and DE'575

In November 2022, we filed cancellation actions seeking the cancellation of the three German Utility Models in the German Patent and Trademark Office. On December 20, 2023, the German Patent and Trademark Office issued a preliminary opinion that DE'974 is likely to be cancelled. On January 23, 2024, the German Patent and Trademark Office issued a preliminary opinion that DE'961 is likely to be cancelled. Both preliminary opinions are based on invalidity pursuant to para. 1 (2) no. 5 Utility Model Act. On March 7, 2024, the German Patent and Trademark Office issued a preliminary opinion that DE'575 is likely to be cancelled. On June 6, 2024, CureVac submitted a written statement to the German Patent and Trademark Office waiving DE'575. On June 12, 2024, we withdrew our request for cancellation of DE'575. On June 25 and 26, 2024, the German Patent and Trademark Office heard oral arguments regarding DE'961 and DE'974, and at the conclusion of the hearing on June 26, 2024, confirmed that both DE'961 and DE'974 were cancelled. In November 2024, the German Patent and Trademark Office issued its written decisions cancelling DE'961 and DE'974. CureVac has filed an appeal in both cancellation proceedings, which are currently pending.

Cancellation Proceedings– DE'123 and DE'130

In November 2023, we filed cancellation actions seeking the cancellation of German Utility Models DE'123 and DE'130 in the German Patent and Trademark Office. On June 6, 2024, CureVac submitted a written statement to the German Patent and Trademark Office waiving DE'123. On June 12, 2024, we withdrew our request for cancellation of DE'123. On December 5, 2024, the German Patent and Trademark Office issued a preliminary opinion that DE'130 is likely to be cancelled. An oral hearing regarding the validity of DE'130 before the German Patent and Trademark Office is scheduled for November 18, 2025.

United States

In July 2022, we and Pfizer filed a complaint for a declaratory judgment in the U.S. District Court for the District of Massachusetts, seeking a judgment of non-infringement by *Comirnaty* of U.S. Patent Nos. 11,135,312; 11,149,278; and 11,241,493. In May 2023, the action in the U.S. District Court for the District of Massachusetts was transferred to the U.S. District Court for the Eastern District of Virginia, where CureVac filed counterclaims asserting infringement of six additional U.S. patents, U.S. Patent Nos. 10,760,070; 11,286,492; 11,345,920; 11,471,525; 11,576,966; and 11,596,686. In July 2023, CureVac filed amended counterclaims to assert an additional U.S. patent, U.S. Patent No. 11,667,910. In June 2024, CureVac voluntarily dismissed with prejudice its claims of infringement with respect to the '493, '525, and '966 patents. A three-week trial was set to begin on March 3, 2025, but the Court has rescheduled it to begin on September 8, 2025. On July 7, 2025, GlaxoSmithKline Biologicals SA filed a motion to intervene in the litigation.

We believe we have strong defenses against the allegations claimed relative to each of the patents and utility models and intend to vigorously defend ourselves in the proceedings mentioned above. However, our analysis of CureVac's claims is ongoing and complex, and we believe the ultimate outcomes remain substantially uncertain. Taking into account discussions with our external lawyers, we do not consider the probability of an outflow of resources to be sufficient to recognize a provision at the balance sheet date. In our opinion, these matters constitute contingent liabilities as of the balance sheet date. We and CureVac have from time to time discussed potential options for the resolution of certain of these disputes, and we continue to be actively engaged in such discussions. However, it is currently impractical for us to estimate with sufficient reliability the respective contingent liabilities.

Moderna Proceedings

Germany

Infringement Proceedings – EP'949 and EP'565

In August 2022, Moderna filed a lawsuit against us and Pfizer and our wholly owned subsidiaries, BioNTech Manufacturing GmbH, BioNTech Europe GmbH and BioNTech Manufacturing Marburg GmbH, Pfizer Manufacturing Belgium NV, Pfizer Ireland Pharmaceuticals and Pfizer Inc. in the Düsseldorf Regional Court alleging *Comirnaty's* infringement of two European patents, 3590949B1, or EP'949, and 3718565B1, or EP'565. With respect to EP'565, on November 7, 2023, the Opposition Division of the EPO revoked EP'565 after a one-day oral hearing held in the co-pending opposition proceeding, and on December 7, 2023, it issued the written decision revoking EP'565. On February 7, 2024, Moderna appealed the Opposition Division's revocation decision on EP'565, and the appeal is currently pending, with an oral hearing scheduled for January 27, 2026. With respect to EP'949, on December 8, 2023, the Opposition Division issued a preliminary opinion noting that it believes EP'949 is likely invalid. As a result of those developments in the EPO proceedings, the Düsseldorf Regional Court postponed its hearing on infringement with respect to EP'949, originally scheduled for December 12, 2023, to January 21, 2025. On May 16, 2024, the EPO Opposition Division decided that EP'949 is valid, in amended form, and issued its written decision regarding the same on July 8, 2024. We appealed this decision, and the appeal is currently pending. The Düsseldorf Regional Court held an infringement hearing on January 21, 2025, and on March 5, 2025, the Düsseldorf Regional Court issued a first-instance decision declining to stay the infringement proceedings and finding infringement of EP'949 by us and Pfizer. We and Pfizer have appealed the Düsseldorf Regional Court's infringement decision, and the appeal is currently pending. The court has not ruled on the invalidity of EP'949, which will be decided in a next step by the EPO in the opposition appeal proceedings. Moderna has not yet taken steps to enforce the Düsseldorf Regional Court's first-instance decision on infringement.

United Kingdom

In August 2022, Moderna filed a lawsuit asserting *Comirnaty's* infringement of EP'949 and EP'565 against us and our wholly owned subsidiaries, BioNTech Manufacturing GmbH, BioNTech Europe GmbH and BioNTech Manufacturing Marburg GmbH, and Pfizer Limited, Pfizer Manufacturing Belgium NV and Pfizer Inc. in the Business and Property Courts of England and Wales, in the UK High Court. In September 2022, we and Pfizer filed a revocation action in the Business and Property Courts of England and Wales requesting revocation of EP'949 and EP'565.

The UK High Court held a trial between April 22, 2024, and May 21, 2024. On July 2, 2024, the UK High Court released two judgments. The first judgment concerns the validity of EP'949 and EP'565. In this first judgment, the UK High Court found that EP'565 is invalid and therefore not infringed, while EP'949 is valid and infringed. The second judgment concerns whether Moderna's October 2020 commitment not to "enforce [its] COVID-19 related patents against those making vaccines intended to combat the pandemic," or the Patent Pledge, amounted to a consent under UK law to carry out any acts that would otherwise amount to patent infringement. With respect to this judgment, the UK High Court found that Moderna's Patent Pledge amounted to consent to carry out activities that might otherwise infringe its patents prior to March 2022, but not after March 2022.

The UK High Court held a hearing on September 25, 2024, during which the Court granted Pfizer and BioNTech permission to appeal its judgment regarding the validity of EP'949, and declined Moderna's permission to appeal its judgment regarding validity of EP'565. On October 16, 2024, Moderna sought permission from the UK Appeals Court to appeal the EP'565 judgment. On November 11, 2024, the UK Appeals Court denied Moderna's application to appeal; accordingly, the UK designation of EP'565 is finally revoked with no further opportunity to appeal in UK. No party sought permission to appeal the UK High Court's judgment on the patent pledge.

The UK Court of Appeal held an oral hearing on the appeal of EP'949 on July 10-11, 2025. On August 1, 2025, the UK Court of Appeal issued a judgment agreeing with the UK High Court that EP '949 is valid, and dismissing our appeal. We intend to appeal this decision to the UK Supreme Court.

United States

U.S. District Court Litigation

In August 2022, Moderna filed a lawsuit in the U.S. District Court for the District of Massachusetts against us and our wholly owned subsidiaries BioNTech Manufacturing GmbH and BioNTech US Inc. and Pfizer Inc. alleging *Comirnaty's* infringement of U.S. Patent Nos. 10,898,574; 10,702,600 and 10,933,127 and seeking monetary relief. On April 12, 2024, the U.S. District Court for the District of Massachusetts stayed the litigation pending resolution of the inter partes review of U.S. Patent Nos. 10,702,600 and 10,933,127.

Inter Partes Review

In August 2023, Pfizer and we filed petitions seeking inter partes review of U.S. Patent Nos. 10,702,600 and 10,933,127 before the United States Patent Trial and Appeal Board, or the PTAB. On March 6, 2024, the PTAB issued decisions instituting inter partes review proceedings on all challenged claims of U.S. Patent Nos. 10,702,600 and 10,933,127. An oral hearing on the merits occurred on December 10, 2024. On March 5, 2025, the PTAB found all challenged claims of Moderna's U.S. Patent Nos. 10,933,127 and 10,702,600 to be unpatentable and thus invalid. Moderna appealed this decision on May 6, 2025.

Netherlands

In September 2022, Moderna filed a lawsuit against us and our wholly owned subsidiary BioNTech Manufacturing GmbH and Pfizer B.V., Pfizer Export B.V., C.P. Pharmaceuticals International C.V. and Pfizer Inc. in the District Court of The Hague alleging *Comirnaty's* infringement of EP'949 and EP'565. The District Court of the Hague held a hearing on October 6, 2023, on infringement and validity with respect to EP'949. On December 6, 2023, the Court found EP'949 to be invalid. On March 5, 2024, Moderna appealed this decision, and the appeal is pending. A hearing on the EP'949 appeal has been set for September 22, 2025. The EP'565 case has been stayed pending the outcome of Moderna's appeal of the Opposition Division's revocation of EP'565.

Ireland

In May 2023, Moderna filed a lawsuit against us and our wholly owned subsidiary BioNTech Manufacturing GmbH, Pfizer Inc., Pfizer Healthcare Ireland, Pfizer Ireland Pharmaceuticals, and C.P. Pharmaceuticals International C.V. alleging *Comirnaty's* infringement of EP'949 and EP'565 in the High Court of Ireland. On February 26, 2024, the High Court of Ireland stayed the lawsuit pending the final determination of the EPO opposition proceedings for EP'949 and EP'565 (in each case including any appeals).

Belgium

In May 2023, Moderna filed a lawsuit against us, our wholly owned subsidiary BioNTech Manufacturing GmbH, Pfizer Inc. and Pfizer Manufacturing Belgium alleging *Comirnaty's* infringement of EP'949 and EP'565 in the Brussels Dutch-speaking Enterprise Court. On May 29, 2024, the parties filed a joint request to stay the proceedings, which was entered by the Enterprise Court.

All of the above proceedings are currently pending.

We believe we have strong defenses against the allegations claimed relative to each of the patents and intend to vigorously defend ourselves in the proceedings mentioned above. However, our analysis of Moderna's claims is ongoing and complex, and we believe the outcome of the suit remains substantially uncertain. Taking into account discussions with our external lawyers, we do not consider the probability of an outflow of resources to be sufficient to recognize a provision at the balance sheet date. In our opinion, these matters constitute contingent liabilities as of the balance sheet date. However, it is currently impractical for us to estimate with sufficient reliability the respective contingent liabilities.

Arbutus and Genevant Proceedings

In April 2023, Arbutus Biopharma Corp., or Arbutus, and Genevant Sciences GmbH, or Genevant, filed a lawsuit against Pfizer and us in the U.S. District Court for the District of New Jersey alleging that Pfizer and we have infringed the following patents owned by Arbutus: U.S. Patent Nos. 9,504,651; 8,492,359; 11,141,378; 11,298,320; and 11,318,098, through the use of Genevant's lipid nanoparticle technology and methods for producing such lipids in *Comirnaty*, and seeking monetary relief. This proceeding is currently pending.

We believe we have strong defenses against the allegations claimed relative to each of the patents and intend to vigorously defend ourselves in the lawsuit mentioned above. However, our analysis of Arbutus and Genevant's claims is ongoing and complex, and we believe the outcome of the suit remains substantially uncertain. Taking into account discussions with our external lawyers, we do not consider the probability of an outflow of resources to be sufficient to recognize a provision at the balance sheet date. In our opinion, these matters constitute contingent liabilities as of the balance sheet date. However, it is currently impractical for us to estimate with sufficient reliability the respective contingent liabilities.

GlaxoSmithKline Proceedings

In April 2024, GlaxoSmithKline Biologicals SA and GlaxoSmithKline LLC, or GSK, filed a lawsuit against Pfizer and us and our wholly owned subsidiaries BioNTech Manufacturing GmbH and BioNTech US Inc. in the U.S. District Court for the District of Delaware alleging that the cationic lipid used in *Comirnaty* infringes U.S. Patent Nos. 11,638,693; 11,638,694; 11,666,534; 11,766,401; and 11,786,467; and seeking monetary relief. On August 14, 2024, GSK filed an amended complaint to assert infringement of three additional patents, U.S. Patent Nos. 11,759,422; 11,655,475; and 11,851,660. This proceeding is currently pending.

We believe we have strong defenses against the allegations claimed relative to each of the patents and intend to vigorously defend ourselves in the lawsuit mentioned above. However, our analysis of GlaxoSmithKline's claims is ongoing and complex, and we believe the outcome of the suit remains substantially uncertain. Taking into account discussions with our external lawyers, we do not consider the probability of an outflow of resources to be sufficient to recognize a provision at the balance sheet date. In our opinion, these matters constitute contingent liabilities as of the balance sheet date. However, it is currently impractical for us to estimate with sufficient reliability the respective contingent liabilities.

Promosome Proceedings

In January 2025, Promosome LLC, or Promosome, filed a lawsuit against us and Pfizer in the Unified Patent Court, or UPC, Munich Division, alleging that *Comirnaty* infringes EP 2 401 365 and seeking monetary relief. This proceeding is currently pending.

We believe we have strong defenses against the allegations claimed relative to the patent and intend to vigorously defend ourselves in the lawsuit mentioned above. However, our analysis of Promosome's claim is ongoing and complex, and we believe the outcome of the suit remains substantially uncertain. Taking into account discussions with our external lawyers, we do not consider the probability of an outflow of resources to be sufficient to recognize a provision at the balance sheet date. In our opinion, this matter constitute a contingent liabilities as of the balance sheet date. However, it is currently impractical for us to estimate with sufficient reliability the respective contingent liability.

Ladewig Proceedings

In January 2024, we and certain of our officers and directors were named as defendants in a securities class action complaint captioned *Ladewig v. BioNTech SE* filed in the U.S. District Court for the Central District of California brought on behalf of a putative class of investors who purchased our securities from March 30, 2022 through October 13, 2023. Plaintiffs allege that we violated Sections 10(b) and 20(a) of the Exchange Act by stating that we were "well positioned" to remain a "market leader" in vaccines for the prevention of COVID-19 and by purportedly overstating demand for *Comirnaty*. Plaintiffs further allege that we failed to adapt our inventory to reflect the emergence of new COVID variants. On July 15, 2024, the case was transferred to the U.S. District Court for the Southern District of New York.

We believe we have strong defenses against the allegations claimed and intend to vigorously defend ourselves in the lawsuit mentioned above. We cannot reasonably estimate the maximum potential exposure or the range of possible loss for this matter. Taking into account discussions with our external lawyers, we do not consider the probability of an outflow of resources to be sufficient to recognize a provision at the balance sheet date. In our opinion, these matters constitute contingent liabilities as of the balance sheet date. However, it is currently impractical for us to estimate with sufficient reliability the respective contingent liabilities.

12. Related Party Disclosures

ATHOS KG, Holzkirchen, Germany is the sole shareholder of AT Impf GmbH, Munich, Germany and a beneficial owner of our ordinary shares. Entities controlled by ATHOS KG mainly provide rental and property management activities and sell property, plant and equipment to us. The total amount of transactions with ATHOS KG or entities controlled by them had no significant impact on our unaudited interim condensed consolidated financial statements as of and for the three and six months ended June 30, 2025, compared to the details disclosed in Note 21 to our audited consolidated financial statements included in our Annual Report on Form 20-F as of and for the year ended December 31, 2024.

Members of the Management Board and the Supervisory Board of BioNTech SE are related parties as key management personnel having authority and responsibility for planning, directing, and controlling the activities of BioNTech SE directly or indirectly. The total amount of transactions with related parties had no significant impact on our unaudited interim condensed consolidated financial statements as of and for the three and six months ended June 30, 2025, compared to the details disclosed in Note 21 to our audited consolidated financial statements included in our Annual Report on Form 20-F as of and for the year ended December 31, 2024.

13. Events after the Reporting Period

Ramón Zapata – Appointment to Management Board as Chief Financial Officer

With effect as of July 1, 2025, the Supervisory Board appointed Ramón Zapata to the Management Board as Chief Financial Officer (CFO). Ramón Zapata takes over the CFO role from Jens Holstein, who retired at the end of his term.

Ryan Richardson – Step Down from the Management Board

On July 17, 2025, we announced that Ryan Richardson will step down as Chief Strategy Officer in the Management Board of BioNTech on September 30, 2025, and as a Board Director at affiliated companies of the BioNTech Group by mutual agreement to pursue new professional opportunities.

New Tax Legislation

As of June 30, 2025, the draft bill to gradually reduce the German federal corporate income tax rate from 15% to 10% (by one percentage point per year from 2028 to 2032) had not yet been substantively enacted. Consequently, the existing tax rate of 15% was applied when measuring current and deferred taxes as of the reporting date.

In addition, the 'Big Beautiful Bill' announced by the US administration, which proposes changes to the US federal corporate income tax rate among other provisions, had not been enacted or substantively enacted as of June 30, 2025. Accordingly, the bill had no effect on the group's income tax expense or deferred tax measurement in Q2 2025.

GlaxoSmithKline Proceedings

Ireland

On July 7, 2025, GlaxoSmithKline Biologicals SA filed a lawsuit against our wholly owned subsidiary BioNTech Manufacturing GmbH, Pfizer Ireland Pharmaceuticals Unlimited Company, and Pfizer Healthcare Ireland Unlimited Company, alleging Comirnaty's infringement of European Patent Nos. 2,590,626, 4,066,856, and 4,226,941 in the High Court of Ireland. This proceeding is currently pending.

Unified Patent Court

On July 23, 2025, GlaxoSmithKline Biologicals SA filed two lawsuits against BioNTech SE, BioNTech Europe GmbH, BioNTech Manufacturing GmbH, and BioNTech Manufacturing Marburg GmbH, as well as 26 Pfizer entities, in the Unified Patent Court (Hague Division). In the first lawsuit, GSK alleges Comirnaty's infringement of European Patent No. 2,590,626, and in the second lawsuit, GSK alleges Comirnaty's infringement of European Patent Nos. 4,066,856 and 4,226,941. This proceeding is currently pending.

We believe we have strong defenses against the allegations claimed relative to each of the patents and intend to vigorously defend ourselves in the lawsuit mentioned above. However, our analysis of GlaxoSmithKline's claims is ongoing and complex, and we believe the outcome of the suit remains substantially uncertain. Taking into account discussions with our external lawyers, we do not consider the probability of an outflow of resources to be sufficient to recognize a provision as of June 30, 2025. In our opinion, these matters constitute contingent liabilities as of June 30, 2025. However, it is currently impractical for us to estimate with sufficient reliability the respective contingent liabilities.

Audited Consolidated Financial Statements of BioNTech SE prepared in accordance with IFRS Accounting Standards as issued by the IASB and adopted by the EU and the additional requirements of German commercial law pursuant to Section 315e para. 3 in connection with para. 1 HGB as of and for the Year Ended December 31, 2024

Consolidated Statements of Profit or Loss

(in millions €, except per share data)	Note	Years ended December 31, 2024	2023	2022
Revenues	6	2,751.1	3,819.0	17,310.6
Cost of sales	7.1	(541.3)	(599.8)	(2,995.0)
Research and development expenses	7.1	(2,254.2)	(1,783.1)	(1,537.0)
Sales and marketing expenses	7.1	(67.9)	(62.7)	(59.5)
General and administrative expenses [1]	7.1	(531.1)	(495.0)	(481.7)
Other operating expenses [1]	7.2	(811.5)	(293.0)	(410.0)
Other operating income	7.2	140.6	105.0	815.3
Operating profit / (loss)		**(1,314.3)**	**690.4**	**12,642.7**
Finance income	7.3	664.0	519.6	330.3
Finance expenses	7.3	(27.4)	(23.9)	(18.9)
Profit / (Loss) before tax		**(677.7)**	**1,186.1**	**12,954.1**
Income taxes	8	12.4	(255.8)	(3,519.7)
Net profit / (loss)		**(665.3)**	**930.3**	**9,434.4**
Earnings / (Loss) per share				
Basic earnings / (loss) per share	9	(2.77)	3.87	38.78
Diluted earnings / (loss) per share	9	(2.77)	3.83	37.77

(1) Adjustments to the year 2022 figures due to change in functional allocation of general and administrative expenses and other operating expenses (see Note 7.2).

The accompanying notes form an integral part of these consolidated financial statements.

Consolidated Statements of Comprehensive Income

(in millions €)	Note	Years ended December 31, 2024	2023	2022
Net profit / (loss)		**(665.3)**	**930.3**	**9,434.4**
Other comprehensive income				
Other comprehensive income that may be reclassified to profit or loss in subsequent periods, net of tax				
Exchange differences on translation of foreign operations		43.5	(19.8)	11.2
Net other comprehensive income / (loss) that may be reclassified to profit or loss in subsequent periods		**43.5**	**(19.8)**	**11.2**
Other comprehensive loss that will not be reclassified to profit or loss in subsequent periods, net of tax				
Net gain / (loss) on equity instruments designated at fair value through other comprehensive income	12	(146.6)	3.7	10.5
Remeasurement gain / (loss) on defined benefit plans		—	0.3	0.6
Net other comprehensive income / (loss) that will not be reclassified to profit or loss in subsequent periods		**(146.6)**	**4.0**	**11.1**
Other comprehensive income / (loss), net of tax		**(103.1)**	**(15.8)**	**22.3**
Comprehensive income / (loss), net of tax		**(768.4)**	**914.5**	**9,456.7**

The accompanying notes form an integral part of these consolidated financial statements.

Consolidated Statements of Financial Position

(in millions €)	Note	December 31, 2024	December 31, 2023
Assets			
Non-current assets			
Goodwill	10	380.6	362.5
Other intangible assets	10	790.4	804.1
Property, plant and equipment	11	935.3	757.2
Right-of-use assets	20	248.1	214.4
Contract assets	6	9.8	—
Other financial assets	12	1,254.0	1,176.1
Other non-financial assets	14	26.3	83.4
Deferred tax assets	8	81.7	81.3
Total non-current assets		**3,726.2**	**3,479.0**
Current assets			
Inventories	13	283.3	357.7
Trade and other receivables	12	1,463.9	2,155.7
Contract assets	6	10.0	4.9
Other financial assets	12	7,021.7	4,885.3
Other non-financial assets	14	212.7	280.9
Income tax assets	8	50.0	179.1
Cash and cash equivalents	12	9,761.9	11,663.7
Total current assets		**18,803.5**	**19,527.3**
Total assets		**22,529.7**	**23,006.3**
Equity and liabilities			
Equity			
Share capital	15	248.6	248.6
Capital reserve		1,398.6	1,229.4
Treasury shares	15	(8.6)	(10.8)
Retained earnings		19,098.0	19,763.3
Other reserves	16	(1,325.5)	(984.6)
Total equity		**19,411.1**	**20,245.9**
Non-current liabilities			
Lease liabilities, loans and borrowings	12	214.7	191.0
Other financial liabilities	12	46.9	38.8
Provisions	17	20.9	8.8
Contract liabilities	6	183.0	398.5
Other non-financial liabilities	19	87.5	13.1
Deferred tax liabilities	8	42.4	39.7
Total non-current liabilities		**595.4**	**689.9**
Current liabilities			
Lease liabilities, loans and borrowings	12	39.5	28.1
Trade payables and other payables	12	426.7	354.0
Other financial liabilities	12	1,443.4	415.2
Income tax liabilities	8	4.5	525.5
Provisions	17	144.8	269.3
Contract liabilities	6	294.9	353.3
Other non-financial liabilities	19	169.4	125.1
Total current liabilities		**2,523.2**	**2,070.5**
Total liabilities		**3,118.6**	**2,760.4**
Total equity and liabilities		**22,529.7**	**23,006.3**

The accompanying notes form an integral part of these consolidated financial statements.

Consolidated Statements of Changes in Stockholders' Equity

(in millions €)	Note	Equity attributable to equity holders of the parent					Total equity
		Share capital	Capital reserve	Treasury shares	Retained earnings	Other reserves	
As of January 1, 2022		**246.3**	**1,674.4**	**(3.8)**	**9,882.9**	**93.9**	**11,893.7**
Net profit		—	—	—	9,434.4	—	9,434.4
Other comprehensive income		—	—	—	—	22.3	22.3
Total comprehensive income		**—**	**—**	**—**	**9,434.4**	**22.3**	**9,456.7**
Issuance of share capital	15	0.5	67.1	—	—	—	67.6
Redemption of convertible note		1.8	233.2	—	—	—	235.0
Share repurchase program	16	—	(979.5)	(6.9)	—	—	(986.4)
Transaction costs	16	—	(0.1)	—	—	—	(0.1)
Dividends	16	—	—	—	(484.3)	—	(484.3)
Share-based payments	16	—	833.1	5.4	—	(1,519.8)	(681.3)
Deferred tax assets	16	—	—	—	—	554.7	554.7
As of December 31, 2022		**248.6**	**1,828.2**	**(5.3)**	**18,833.0**	**(848.9)**	**20,055.6**
Net profit		—	—	—	930.3	—	930.3
Other comprehensive loss		—	—	—	—	(15.8)	(15.8)
Total comprehensive income / (loss)		**—**	**—**	**—**	**930.3**	**(15.8)**	**914.5**
Issuance of share capital		—	—	—	—	—	—
Treasury shares used for acquisition of business combination		—	102.6	1.1	—	—	103.7
Share repurchase program		—	(731.6)	(6.9)	—	—	(738.5)
Share-based payments	16	—	30.2	0.3	—	(15.1)	15.4
Current and deferred taxes		—	—	—	—	(104.8)	(104.8)
As of December 31, 2023		**248.6**	**1,229.4**	**(10.8)**	**19,763.3**	**(984.6)**	**20,245.9**
Net loss		—	—	—	(665.3)	—	(665.3)
Other comprehensive loss		—	—	—	—	(103.1)	(103.1)
Total comprehensive loss		**—**	**—**	**—**	**(665.3)**	**(103.1)**	**(768.4)**
Share-based payments	16	—	169.2	2.2	—	(237.8)	(66.4)
As of December 31, 2024		**248.6**	**1,398.6**	**(8.6)**	**19,098.0**	**(1,325.5)**	**19,411.1**

Consolidated Statements of Cash Flows

(in millions €)	Years ended December 31, 2024	2023	2022
Operating activities			
Net profit / (loss)	(665.3)	930.3	9,434.4
Income taxes	(12.4)	255.8	3,519.7
Profit / (Loss) before tax	**(677.7)**	**1,186.1**	**12,954.1**
Adjustments to reconcile profit before tax to net cash flows:			
Depreciation and amortization of property, plant, equipment, intangible assets and right-of-use assets	298.0	183.4	123.3
Share-based payment expenses	100.9	51.4	108.6
Net foreign exchange differences	(109.5)	(298.0)	625.5
(Gain) / Loss on disposal of property, plant and equipment	(0.3)	3.8	0.6
Finance income excluding foreign exchange differences	(648.5)	(519.6)	(265.3)
Finance expense excluding foreign exchange differences	27.4	7.9	18.9
Government grants	(31.5)	2.4	0.3
Other non-cash (income) / loss	—	—	—
Unrealized (gain) / loss on derivative instruments at fair value through profit or loss	4.6	175.5	(241.0)
Working capital adjustments:			
Decrease in trade and other receivables, contract assets and other assets	387.7	5,374.0	4,369.9
Decrease in inventories	74.5	81.9	62.9
Increase in trade payables, other financial liabilities, other liabilities, contract liabilities, refund liabilities and provisions	758.4	118.9	85.7
Interest received and realized gains from cash and cash equivalents	474.9	258.2	29.3
Interest paid and realized losses from cash and cash equivalents	(13.5)	(5.4)	(21.5)
Income tax paid	(389.2)	(482.9)	(4,222.1)
Share-based payments	(154.5)	(766.2)	(51.8)
Government grants received	106.0	—	—
Net cash flows from operating activities	**207.7**	**5,371.4**	**13,577.4**
Investing activities			
Purchase of property, plant and equipment	(286.5)	(249.4)	(329.2)
Proceeds from sale of property, plant and equipment	1.2	(0.7)	0.6
Purchase of intangible assets and right-of-use assets	(165.8)	(455.4)	(34.1)
Acquisition of subsidiaries and businesses, net of cash acquired	—	(336.9)	—
Investment in other financial assets	(12,370.3)	(7,128.4)	(47.8)
Proceeds from maturity of other financial assets	10,740.2	1,216.3	375.2
Net cash flows used in investing activities	**(2,081.2)**	**(6,954.5)**	**(35.3)**
Financing activities			
Proceeds from issuance of share capital and treasury shares, net of costs	—	—	110.5
Proceeds from loans and borrowings	—	0.3	0.8
Repayment of loans and borrowings	(2.3)	(0.1)	(18.8)
Payments related to lease liabilities	(43.6)	(40.3)	(41.1)
Share repurchase program	—	(738.5)	(986.4)
Dividends	—	—	(484.3)
Net cash flows used in financing activities	**(45.9)**	**(778.6)**	**(1,419.3)**
Net increase / (decrease) in cash and cash equivalents	(1,919.4)	(2,361.7)	12,122.8
Change in cash and cash equivalents resulting from exchange rate differences	14.8	(14.5)	60.1
Change in cash and cash equivalents resulting from other valuation effects	2.8	164.8	(0.5)
Cash and cash equivalents at the beginning of the period	11,663.7	13,875.1	1,692.7
Cash and cash equivalents as of December 31	**9,761.9**	**11,663.7**	**13,875.1**

The accompanying notes form an integral part of these consolidated financial statements.

Notes to the Consolidated Financial Statements

1 Corporate Information

BioNTech SE is a limited company incorporated and domiciled in Germany. American Depositary Shares (ADS) representing BioNTech SE's ordinary shares have been publicly traded on the Nasdaq Global Select Market since October 10, 2019. The registered office is located in Mainz, Germany (An der Goldgrube 12, 55131 Mainz). BioNTech SE is registered in the commercial register B of the Mainz Local Court under the number HRB 48720. These consolidated financial statements have been prepared in accordance with International Financial Reporting Standards (IFRS) as endorsed by the European Union (EU), and give a true and fair view of the financial position and results of operations of the Group in accordance with International Financial Reporting Standards (IFRS) and the results of operation of BioNTech SE and its subsidiaries, hereinafter also referred to as "BioNTech," the "Group," "we" or "us".

Our consolidated financial statements for the year ended December 31, 2024, were prepared by the Management Board on March 7, 2025.

2 Significant Accounting Policies

2.1 Basis of Preparation

General

The consolidated financial statements have been prepared in accordance with the IFRS Accounting Standards as issued by the International Accounting Standards Board (IASB).

We prepare and publish our consolidated financial statements in Euros and round numbers to thousands or millions of Euros, respectively. Accordingly, numerical figures shown as totals in some tables may not be exact arithmetic aggregations of the figures that preceded them and figures presented in the explanatory notes may not add up to the rounded arithmetic aggregations. Rounding applied may differ from rounding published in different units in the previous years.

Segment Information

Decisions with respect to business operations and resource allocations are made by our Management Board, as the chief operating decision maker based on BioNTech as a whole. Accordingly, we operate and make decisions as a single operating segment, which is also our reporting segment.

2.2 Basis of Consolidation

The consolidated financial statements comprise the financial statements of BioNTech SE and its controlled investees (subsidiaries).

The Group controls an investee if, and only if, the Group has

- power over the investee (i.e., existing rights that give it the current ability to direct the relevant activities of the investee);
- exposure, or rights, to variable returns from its involvement with the investee; and
- the ability to use its power over the investee to affect its returns.

Generally, there is a presumption that a majority of voting rights results in control.

Whether an investee is controlled is re-assessed if facts and circumstances indicate that there are changes to one or more of the three elements of control. Consolidation of a subsidiary begins when control is obtained over the subsidiary and ceases when control over the subsidiary is lost.

The profit / (loss) and each component of other comprehensive income / (loss) for the period are attributed to the equity holders of the parent of the Group and to the non-controlling interests, even if this results in the non-controlling interests having a deficit balance. When necessary, adjustments are made to the consolidated financial statements of subsidiaries to bring their accounting policies in line with the Group's accounting policies. All intra-group assets and liabilities, equity, income, expenses and cash flows relating to transactions between members of the Group are eliminated on consolidation.

A change in the ownership interest of a subsidiary, without a loss of control, is accounted for as an equity transaction.

If control over a subsidiary is lost, the related assets (including goodwill), liabilities, non-controlling interests and other components of equity are derecognized, while any resultant gain or loss is recognized in the consolidated statements of profit or loss. Any investment retained is recognized at fair value.

2.3 Summary of Material Accounting Policies

2.3.1 Foreign Currencies

Our consolidated financial statements are presented in Euros, which is also our functional currency. For each entity, the Group determines the functional currency, and items included in the consolidated financial statements of such entities are measured using that functional currency. We use the direct method of consolidation and, on disposal of a foreign operation, the gain or loss that is reclassified to the consolidated statements of profit or loss reflects the amount that arises from using this method.

Transactions and Balances

Transactions in foreign currencies are initially recorded by the Group's entities at their respective functional currency spot rates at the date the transaction first qualifies for recognition.

Monetary assets and liabilities denominated in foreign currencies are translated at the functional currency spot rates of exchange at the reporting date.

Non-monetary items that are measured in terms of historical cost in a foreign currency are translated using the exchange rates at the dates of the initial transactions.

In determining the spot exchange rate to use on initial recognition of the related asset, expense or income (or part of it) on the derecognition of a non-monetary asset or non-monetary liability relating to advance consideration, the date of the transaction is the date on which the Group initially recognizes the non-monetary asset or non-monetary liability arising from the advance consideration. If there are multiple payments or receipts in advance, the Group determines the transaction date for each payment or receipt of advance consideration.

Foreign Currency Translation

Foreign currency translation effects from the translation of operating activities include foreign exchange differences arising on operating items such as trade receivables and trade payables and are either shown as other operating income or expenses on a cumulative basis. Foreign currency translation effects presented within finance income and expenses include foreign exchange differences arising on financing items such as loans and borrowings as well as foreign exchange differences arising on cash and cash equivalents and are either shown as finance income or expenses on a cumulative basis.

Foreign Currency Translation on Consolidation

Upon consolidation, the assets and liabilities of foreign operations are translated into Euros at the rate of exchange prevailing at the reporting date and the transactions recorded in their consolidated statements of profit or loss are translated at exchange rates prevailing at the dates of the transactions.

The exchange differences arising on translation for consolidation are recognized in other comprehensive income. On disposal of a foreign operation, the component of other comprehensive income relating to that particular foreign operation is reclassified to profit or loss.

Any goodwill arising on the acquisition of a foreign operation and any fair value adjustments to the carrying amounts of assets and liabilities arising upon the acquisition are treated as assets and liabilities of the foreign operation and translated at the spot rate of exchange at the reporting date.

2.3.2 Current versus Non-Current Classifications

Assets and liabilities in the consolidated statements of financial position are presented based on current or non-current classification.

An asset is current when it is either: (i) expected to be realized or intended to be sold or consumed in the normal operating cycle, (ii) held primarily for the purpose of trading, (iii) expected to be realized within twelve months after the reporting period, or (iv) cash or cash equivalents, unless it is restricted from being exchanged or used to settle a liability for at least twelve months after the reporting period. All other assets are classified as non-current.

A liability is current when it is either: (i) expected to be settled in the normal operating cycle, (ii) held primarily for the purpose of trading, (iii) due to be settled within twelve months after the reporting period, or (iv) there is no unconditional right to defer the settlement of the liability for at least twelve months after the reporting period. The terms of the liability that could, at the option of the counterparty, result in its settlement by the issue of equity instruments do not affect its classification. The Group classifies all other liabilities as non-current.

Deferred tax assets and liabilities are classified as non-current assets and liabilities, respectively.

2.3.3 Revenue from Contracts with Customers

Revenue

Identification of the Contract

We generate revenues from collaboration and license agreements, which contain multiple elements, including licenses to use, research, develop, manufacture and commercialize candidates and products, research and development services as well as obligations to develop and manufacture preclinical and clinical material and products. We determined that those collaboration and license agreements qualify as contracts with customers. A contract is an agreement between two or more parties that establishes enforceable rights and obligations.

Identification of Performance Obligations

Our customer contracts often include bundles of licenses, goods and services. If the granting of a license is bundled together with delivering of goods and or the rendering of services, it is assessed whether these agreements are comprised of more than one performance obligation. A performance obligation is only accounted for as the grant of a license if the grant of a license is the sole or the predominant promise of the performance obligation.

Determining Transaction Prices

We apply judgment when determining the consideration that is expected to be received. If the consideration in an agreement includes a variable amount, we estimate the amount of consideration to which we will be entitled in exchange for transferring the goods to the customer. At contract inception, the variable consideration is estimated based on the most

likely amount of consideration expected from the transaction and constrained until it is highly probable that a significant revenues reversal in the amount of cumulative revenues recognized will not occur when the associated uncertainty with respect to the variable consideration is subsequently resolved. The estimated revenues are updated at each reporting date to reflect the current facts and circumstances.

Allocation of Transaction Prices

If a contract with a customer contains more than one performance obligation, the transaction price is allocated to each performance obligation based on relative standalone selling prices. We have established the following hierarchy to determine the standalone selling prices.

- Where standalone selling prices for offered licenses, goods or services are observable and reasonably consistent across customers, our standalone selling price estimates are derived from our respective pricing history. However, due to the limited number of customers and the limited company history, this approach can rarely be used.
- Where sales prices for an offering are not directly observable or highly variable across customers, we follow a cost-plus-margin approach.
- For offerings that have highly variable pricing and lack substantial direct costs to estimate based on a cost-plus-margin approach, we allocate the transaction price by applying a residual approach.

Judgment is required when estimating standalone selling prices.

Recognition of Revenues

For each separate performance obligation, it is evaluated whether control is transferred either at a point in time or over time. For performance obligations that are satisfied over time, revenues are recognized based on a measure of progress, which depicts the performance in transferring control to the customer. Under the terms of our licensing arrangements, when we provide the licensee with a research and development license, which represents a right to access our intellectual property as it exists throughout the license period (as our intellectual property is still subject to further research), the promise to grant a license is accounted for as a performance obligation satisfied over time as our customers simultaneously receive and consume the benefits from our performance.

Revenues based on the collaboration partners' gross profit, which is shared under the respective collaboration agreements, are recognized based on the sales-based or usage-based royalty exemption; i.e., when the underlying sales occur, which is when the performance obligation has been satisfied. As described further in Note 3, judgment is applied to certain aspects when accounting for the collaboration agreements.

Revenue arrangements that involve two or more partners who contribute to the provision of a specific good or service to a customer are assessed in terms of principal-agent considerations in order to determine the appropriate treatment for the transactions between us and the collaborator and the transactions between us and other third parties. The classification of transactions under such arrangements is determined based on the

nature and contractual terms of the arrangement along with the nature of the operations of the participants. Any consideration related to activities in which we are considered the principal, which includes being in control of the good or service before such good or service is transferred to the customer, is accounted for as gross revenues. Any consideration related to activities in which we are considered the agent is accounted for as net revenues.

Revenues from the sale of pharmaceutical and medical products (e.g., COVID-19 vaccine sales and other sales of peptides and retroviral vectors for clinical supply) are recognized when we transfer control of the product to the customer. Control of the product normally transfers when the customer gains physical possession and we have not retained any significant risks of ownership or future obligations with respect to the product. In general, payments from customers are due within 30 days after invoice. However, with respect to our collaboration with Pfizer Inc., or Pfizer, there is a significant time lag between when revenues are recognized and the payments are received. The contractual settlement of the gross profit share has a temporal offset of more than one calendar quarter. As Pfizer's financial quarter for subsidiaries outside the United States differs from ours, it creates an additional time lag between the recognition of revenues and the payment receipt.

For certain contracts, the finished product may temporarily be stored at our location under a bill-and-hold arrangement. Revenues from bill-and-hold arrangements are recognized at the point in time when the customer obtains control of the product and all of the following criteria have been met: (i) the arrangement is substantive; (ii) the product is identified separately as belonging to the customer; (iii) the product is ready for physical transfer to the customer; and (iv) we do not have the ability to use the product or direct it to another customer. In determining when the customer obtains control of the product, we consider certain indicators, including whether title and significant risks and rewards of ownership have transferred to the customer and whether customer acceptance has been received.

Contract Balances

Contract Assets

A contract asset is the right to consideration in exchange for goods or services transferred to the customer. If we transfer goods or services to a customer before the customer pays the respective consideration or before payment is due, a contract asset is recognized for the earned consideration that is conditional.

Trade Receivables

A receivable represents our right to an amount of consideration that is unconditional (i.e., only the passage of time is required before payment of the consideration is due).

Contract Liabilities

A contract liability is the obligation to transfer goods or services to a customer for which we have received consideration (or an amount of consideration is due) from the customer. If a customer pays consideration before we transfer goods or services to the customer, a contract liability is recognized when the payment is made or when the payment is due (whichever is earlier). Contract liabilities are recognized as revenue when we fulfill our performance obligations under the contract.

2.3.4 Research and Development Expenses

Research and development costs are expensed in the period in which they are incurred. Regarding internal projects, we consider that regulatory approval and other uncertainties inherent in the development of new products preclude the capitalization of internal development expenses as an intangible asset until marketing approval from a regulatory authority is obtained. Payments made to third parties, such as contract research and development organizations as compensation for subcontracted research and development, that are deemed not to transfer intellectual property are expensed as internal research and development expenses in the period in which they are incurred. Such payments are only capitalized if they meet the criteria for recognition of an internally generated intangible asset, usually when marketing approval has been received from a regulatory authority. We have entered into agreements under which third parties grant licenses to us, which are known as in-license agreements. If in-licensing results in consideration for the acquisition of intellectual property that meets the definition of an identifiable asset, this is capitalized as an intangible asset unless the respective intellectual property is mainly used as part of our general ongoing research and development activities without any intent to market the respective product as such. If the transaction also includes research and development services to be provided by the licensor, the share of consideration attributable to these services is recognized in research and development expenses in line with the performance of the services. Sales-based milestone or royalty payments incurred under license agreements after the approval date of the respective pharmaceutical product are recognized as expenses in cost of sales as incurred.

Subsequent internal research and development costs in relation to intellectual property rights are expensed because the technical feasibility of the internal research and development activity can only be demonstrated by the receipt of marketing approval for a related product from a regulatory authority in a major market.

Prior to the second quarter of 2023, we had assessed that inventory produced prior to successful regulatory approval did not meet the criteria for capitalization as an asset, and accordingly expensed the costs of pre-launch inventory as research and development costs. Based on the experience of the past years and the developments since our COVID-19 vaccine was first authorized or approved for emergency or temporary use, our assessment regarding the potential to produce economic benefits changed. Beginning with the second quarter of 2023, pre-launch products from the Comirnaty product family with their potential for economic benefit fulfill the recognition criteria for an asset under the IFRS Conceptual Framework. At each reporting date, the respective inventory is measured at the lower of cost and net realizable value. However, because it is not probable until regulatory approval is obtained, we consider the net realizable value to be zero, as this is the probable amount expected to be realized from its sale until approval is obtained. The write-down is recognized in the statements of profit or loss as research and development expenses. If regulatory approval for a product candidate is obtained, the relevant write-down would be reversed to a maximum of the original cost. Subsequently, inventory is recognized as cost of sales.

2.3.5 Government Grants

Government grants and similar grants which are accounted for in accordance with IAS 20 are recognized where there is reasonable assurance that the grant will be received and all attached conditions will be complied with. When the grant relates to an expense item, it is recognized as other income on a systematic basis over the periods that the related costs for which the grant is intended to compensate are expensed. When the grant relates to an asset, it is recognized as deferred income within the consolidated statements of financial position. Other income is subsequently recognized in our consolidated statements of profit or loss over the useful life of the underlying asset subject to funding.

2.3.6 Taxes

Current Income Tax

Current income tax assets and liabilities are measured at the amount expected to be recovered from or paid to the taxation authorities. The tax rates and tax laws used to compute the amount are those that are enacted or substantively enacted at the reporting date in the countries where the Group operates and generates taxable income.

In addition, current income taxes presented for the period include adjustments for uncertain tax payments or tax refunds for periods not yet finally assessed by tax authorities, excluding interest expenses and penalties on the underpayment of taxes. In the event that amounts included in the tax return are considered unlikely to be accepted by the tax authorities (uncertain tax positions), a provision for income taxes is recognized.

Management periodically evaluates positions taken in the tax returns with respect to situations in which applicable tax regulations are subject to interpretation and establishes provisions where appropriate.

Deferred Tax

Deferred tax is provided using the liability method on temporary differences between the tax bases of assets and liabilities and their carrying amounts for financial reporting purposes at the reporting date.

Deferred tax liabilities are recognized for all taxable temporary differences, except:

- when the deferred tax liability arises from the initial recognition of goodwill or an asset or liability in a transaction that is not a business combination and, at the time of the transaction, affects neither the accounting profit nor taxable profit or loss; or
- in respect of taxable temporary differences associated with investments in subsidiaries, when the timing of the reversal of the temporary differences can be controlled and it is probable that the temporary differences will not reverse in the foreseeable future.

Deferred tax assets are recognized for all deductible temporary differences, the carry forward of unused tax credits and any unused tax losses. Deferred tax assets are recognized to the extent that it is probable that taxable profit will be available against which the deductible temporary differences, the carry forward of unused tax credits and unused tax losses can be utilized, except:

- when the deferred tax asset relating to the deductible temporary difference arises from the initial recognition of an asset or liability in a transaction that is not a business combination and, at the time of the transaction, affects neither the accounting profit nor taxable profit or loss; or
- in respect of deductible temporary differences associated with investments in subsidiaries, deferred tax assets are recognized only to the extent that it is probable that the temporary differences will reverse in the foreseeable future and taxable profit will be available against which the temporary differences can be utilized.

Deferred tax assets and liabilities are measured at the tax rates that are expected to apply in the year in which the asset is realized, or the liability is settled, based on tax rates (and tax laws) that have been enacted or substantively enacted at the reporting date.

Unrecognized deferred tax assets are re-assessed at each reporting date and are recognized to the extent that it has become probable that future taxable profits will allow the deferred tax asset to be recovered.

Recognition of Taxes

Current and deferred tax items are recognized similarly to the underlying transaction either in profit or loss, other comprehensive income or directly in equity.

Current tax assets and current tax liabilities are offset if, and only if, we have a legally enforceable right to set off the recognized amounts and intend either to settle on a net basis, or to realize the asset and settle the liability simultaneously. Deferred tax assets and deferred tax liabilities are only offset when we have a legally enforceable right to set off current tax assets and current tax liabilities and the deferred tax assets and deferred tax liabilities relate to income taxes levied by the same taxation authority on either (i) the same taxable entity or (ii) different taxable entities, which intend either to settle current tax liabilities and assets on a net basis, or to realize the assets and settle the liabilities simultaneously, in each future period in which significant amounts of deferred tax liabilities or assets are expected to be settled or recovered.

Sales Tax

Expenses and assets are recognized net of sales tax, except when the sales tax incurred on a purchase of assets or services is not recoverable from the taxation authority.

The net amount of sales tax recoverable from, or payable to, the taxation authority is included as part of receivables or payables in the consolidated statements of financial position.

Global Minimum Taxation

Based on the Organisation for Economic Co-operation and Development (OECD) Base Erosion and Profit Shifting (BEPS) project to tackle tax avoidance, the OECD/G20 Inclusive Framework (an association of about 140 countries) decided to introduce a global minimum taxation for large multinational groups (known as Pillar 2). The Global Anti-Base Erosion Rules are intended to ensure that large multinational groups pay a minimum level of tax on the income arising in each jurisdiction where they operate. In December 2021, the OECD published its Model Rules, which serve as a draft bill for implementation into national domestic law, followed by guidelines and commentaries published in March 2022. In December 2022, the EU adopted a corresponding directive (EU 2022/2523) that obliges EU member states to transpose the rules into national domestic law. If the effective tax rate in any jurisdiction is below the minimum rate (15%), the Group may be subject to the so-called top-up tax or a so-called qualified domestic minimum top-up tax.

Several jurisdictions in which the Group operates have transposed the OECD Model Rules into national domestic law and brought them into force. In addition, the Group is closely following the progress of the legislative process in each country in which the Group operates. As of the balance sheet date, the BEPS Pillar 2 regulations (MinBestRL UmsG) had already been transposed into German law (MinStG). The date of application of the law in Germany is for financial years beginning after December 30, 2023. Subsequently, as the OECD Model Rules have entered into force in Germany, the Group is obliged to file top-up tax information returns for all entities which are part of the Group, beginning in financial year 2024. The Group falls within the scope of these regulations. The Group carried out an analysis as of the reporting date to determine the fundamental impact and the jurisdictions in which the Group is exposed to possible effects in connection with a Pillar 2 top-up tax.

2.3.7 Business Combinations and Goodwill

Business combinations are accounted for using the acquisition method. The cost of an acquisition is measured as the aggregate of the consideration transferred, which is measured at acquisition date fair value, and the amount of any non-controlling interests in the acquiree.

Goodwill is initially measured at cost as the excess of the aggregate of the consideration transferred and the amount recognized for non-controlling interests and any previous interest held over the net identifiable assets acquired and liabilities assumed.

Costs related to executing business combinations are recognized when they are incurred and are classified as general and administrative expenses.

After initial recognition, goodwill is tested at least annually or when there is an indication for impairment. See Note 2.3.10. For the purpose of impairment testing, goodwill acquired in a business combination is, from the acquisition date, allocated to each of the cash-generating units that are expected to benefit from the combination, irrespective of whether other assets or liabilities of the acquiree are assigned to those units.

2.3.8 Intangible Assets

Intangible assets acquired separately are measured on initial recognition at cost. The cost of intangible assets acquired in a business combination is their fair value at the date of acquisition. Following initial recognition, intangible assets are carried at cost less any accumulated amortization and accumulated impairment losses.

The portion of the consideration paid by us in in-licensing agreements to acquire rights to intellectual property is recognized as an intangible asset, referred to as In-process R&D. If an in-licensing agreement includes research and development services, the share of consideration attributable to these services is deferred and recognized in research and development expenses as goods or services are received. Payments depending on the achievement of specific milestones as part of the purchase of intangible assets, except for intangible assets acquired in a business combination, are recognized as subsequent acquisition cost of the intangible asset and as a financial liability once the milestone is reached.

The useful lives of intangible assets are assessed as either finite or indefinite.

Intangible assets with finite lives are amortized generally on a straight-line basis over the useful life and assessed for impairment whenever there is an indication that the intangible asset may be impaired. The amortization period and the amortization method for an intangible asset with a finite useful life are reviewed at the end of each reporting period at the least. The amortization expense on intangible assets with finite lives is recognized in the consolidated statements of profit or loss in the expense category that is consistent with the function of the intangible assets.

A summary of the useful lives applied to the Group's intangible assets is as follows:

Intangible assets	Useful life (years)
Intellectual property rights	8-20
Licenses	3-20
Software	3-8

Intangible assets with indefinite useful lives are tested for impairment at least annually, or when there is an indication for impairment, either individually or at the level of a cash-generating unit (see Note 2.3.10 for further details). In the case of intangible assets not yet available for use, the point in time from which a capitalized asset can be expected to generate economic benefit for the Group cannot be determined. Such assets are not amortized, and therefore classified as having an indefinite useful life. The intangible assets not yet available for use are tested for impairment annually, or when there is an indication for impairment on an individual basis. The assessment of indefinite life is reviewed annually to determine whether the indefinite life continues to be supportable. If not, the change in useful life from indefinite to finite is made on a prospective basis.

We have classified advanced payments on intangible assets as intangible assets that are not yet ready for use. Advanced payments on intangible assets are tested for impairment on an annual basis.

An intangible asset is derecognized upon disposal (i.e., at the date the recipient obtains control) or when no future economic benefits are expected from its use or disposal. Any gain or loss arising upon derecognition of the asset (calculated as the difference between the net disposal proceeds and the carrying amount of the asset) is included in the consolidated statements of profit or loss.

See Note 2.3.4 for further details in connection with our accounting of internally generated intangible assets.

2.3.9 Property, Plant and Equipment

Construction in progress is stated at cost. Property, plant and equipment are stated at cost, net of accumulated depreciation and accumulated impairment losses, if any. Such cost includes the cost of replacing part of the property, plant and equipment if the recognition criteria are met. All other repair and maintenance costs are expensed as incurred.

Depreciation is calculated on a straight-line basis over the estimated useful lives of the assets, as follows:

Property, plant and equipment	Useful life (years)
Buildings	10-33
Equipment, tools and installations	7-18

Operating and business equipment has a useful life of 1-10 years and is reported under equipment, tools and installations due to immateriality. Leasehold improvements disclosed in buildings have a useful life of the shorter period of the underlying lease term or the economic useful live (see Note 2.3.16).

An item of property, plant and equipment initially recognized is derecognized upon disposal (i.e., at the date the recipient obtains control) or when no future economic benefits are expected from its use or disposal. Any gain or loss arising on derecognition of the asset (calculated as the difference between the net disposal proceeds and the carrying amount of the asset) is included in the consolidated statements of profit or loss when the asset is derecognized.

The residual values, useful lives and methods of depreciation of property, plant and equipment are reviewed at each financial year-end and adjusted prospectively, if appropriate.

2.3.10 Impairment of Non-Financial Assets

At each reporting date, we assess whether there is an indication that a non-financial asset may be impaired. Goodwill is tested for impairment at least annually. Impairment is determined for goodwill by assessing the recoverable amount of each cash-generating unit (or group of CGUs) to which the goodwill relates. If any indication exists, or when annual impairment testing is performed, we estimate the asset's or CGU's recoverable amount. The recoverable amount is the higher of an asset's or CGU's fair value less costs of disposal and its value in use. The recoverable amount is determined for an individual asset, unless the asset does not generate cash inflows that are largely independent of those from other assets or groups of assets. If the asset does not generate independent cash inflows, the impairment test is performed for the smallest group of assets that generate largely independent cash inflows from other assets (CGU). When the carrying amount of an asset or cash-generating unit exceeds its recoverable amount, the asset or the non-current assets of the CGU are considered impaired and written down to their recoverable amount.

Impairment losses are recognized in the consolidated statements of profit or loss in expense categories consistent with the function of the impaired asset.

Intangible assets with an indefinite useful life are tested for impairment annually at the CGU level, as appropriate, and when circumstances indicate that the carrying value may be impaired.

Intangible assets not yet available for use are not amortized, but rather tested for impairment when a triggering event arises or at least once a year. The identification of triggering events takes place on a quarterly or on an ad hoc basis with the involvement of the responsible departments, taking internal and external information sources into consideration. The impairment test is performed annually or if there are indications of impairment by determining the asset's value in use. In assessing value in use, the estimated discounted future cash flows are based on long-term forecast calculations reflecting the asset's estimated product life cycles. The assumptions are based on internal estimates along with external market studies. The result of the valuation depends to a large extent on the estimates by the management of the future cash flows of the assets and the discount rate applied, and is therefore subject to uncertainty. Any expense resulting from an impairment of intangible assets with finite lives is recognized in the consolidated statements of profit or loss in the expense category that is consistent with the function of the respective intangible assets.

2.3.11 Financial Instruments

A financial instrument is any contract that gives rise to a financial asset of one entity and a financial liability or equity instrument of another entity.

i) Financial Assets

Initial Recognition and Measurement

Financial assets are initially measured at fair value as of the trade date and – depending on their classification – subsequently measured at amortized cost, fair value through other comprehensive income (OCI) or fair value through profit or loss.

Subsequent Measurement

The measurement of financial assets depends on their classification, as described below.

Financial Assets Measured at Amortized Cost

Financial assets measured at amortized cost include trade receivables and other financial assets that are generally measured using the effective interest rate (EIR) method. With respect to trade receivables, we applied the practical expedient, which means that they are measured at the transaction price determined in accordance with IFRS 15. Refer to the accounting policies in Note 2.3.3. Other financial assets measured at amortized cost are held to collect contractual cash flows, which are solely payments of principal and interest. Gains and losses are recognized in our consolidated statements of profit or loss when the financial asset is derecognized, modified or impaired.

Financial Assets Designated at Fair Value through OCI (Equity Instruments)

Upon initial recognition, we can irrevocably elect to classify equity investments as equity instruments designated at fair value through OCI if they meet the definition of equity under IAS 32 and are not held for trading. The classification is determined on an instrument-by-instrument basis. Gains and losses on these financial assets are never recycled to profit or loss. Dividends are recognized as other income in the consolidated statements of profit or loss when the right of payment has been established. If dividends clearly represent a recovery of part of the cost of the investment they are recognized in the OCI. Equity instruments designated at fair value through OCI are not subject to impairment assessment. We elected to irrevocably classify our non-listed and listed equity investments under this category. They are recognized using trade date accounting.

Financial Assets at Fair Value through Profit or Loss

When we acquire contractual rights to cash flows from the sale of patent-protected biopharmaceutical products by unrelated biopharmaceutical companies as royalty assets and do not own the intellectual property or have the right to commercialize the underlying products, royalty assets are recognized as financial assets measured at fair value through profit and loss. We recognize day one gains and losses only when the fair value is evidenced by a quoted price in an active market for the same instrument or is based on a valuation technique that only uses data from observable markets. In all other cases, we defer the difference between the fair value at initial recognition and the transaction price. After initial recognition, we recognize that deferred difference as a gain or loss only to the extent that it arises from a change in a factor that market participants would take into account when pricing the asset or liability.

Derivatives not designated as hedging instruments are measured at fair value through profit or loss.A financial asset exists if the derivative has a positive fair value.

Derecognition

A financial asset (or, where applicable, a part of a financial asset or part of a group of similar financial assets) is primarily derecognized (i.e., removed from the consolidated statements of financial position) when the rights to receive cash flows from the asset have expired or have been transferred in terms of fulfilling the derecognition criteria.

Impairment of Financial Assets

An allowance for expected credit losses (ECLs) is considered for all non-derivative financial debt investments, including cash, time deposits and debt securities of the Group. ECLs are based on the difference between the contractual cash flows due in accordance with the contract and all of the cash flows that the Group expects to receive, discounted at an approximation of the original effective interest rate. The expected cash flows will include cash flows from the sale of collateral held or other credit enhancements that are integral to the contractual terms.

Since our financial debt investments are considered to be investments with low risk, the expected credit loss in the upcoming twelve months is used to determine the impairment loss. Wherever a considerable increase in the default risk is assumed, the lifetime expected credit loss of the financial asset is considered.

For trade receivables and contract assets the Group applies a simplified approach in calculating ECLs. This means that the Group does not track changes in credit risk, but instead recognizes a loss allowance based on lifetime ECLs at each reporting date. We have established an ECL model that is based on the probability of default (PD), considers the respective country default probabilities and takes the maturities into account. In order to determine the PD of companies, we use the maturities of the trade receivables and the score of the companies.

If there is objective evidence that certain trade receivables or contract assets are fully or partially impaired, additional loss allowances are recognized to account for expected credit losses. A debtor’s creditworthiness is assumed to be impaired if there are objective indications that the debtor is in financial difficulties, such as the disappearance of an active market for its products or impending insolvency.

ii) Financial Liabilities

Financial liabilities are generally measured at amortized cost using the effective interest rate (EIR) method. Derivatives with negative fair values not designated as hedging instruments and liabilities for contingent consideration in business combinations are measured at fair value.

All financial liabilities are recognized initially at fair value and, in the case of loans and borrowings and payables, net of directly attributable transaction costs.

Financial liabilities measured at amortized cost include loans and borrowings, trade payables and other financial liabilities. They are measured at amortized cost using the EIR method. Gains and losses are recognized in the consolidated statements of profit or loss when the liabilities are derecognized as well as through the EIR amortization process.

Amortized cost is calculated by taking into account any discount or premium on acquisition and fees or costs that are an integral part of the EIR. The EIR amortization is included as finance costs in the consolidated statements of profit or loss.

Derecognition

A financial liability is derecognized when the obligation under the liability is discharged or cancelled or expires. When an existing financial liability is replaced by another from the same lender on substantially different terms, or the terms of an existing liability are substantially modified, such an exchange or modification is treated as the derecognition of the original liability and the recognition of a new liability. The difference in the respective carrying amounts is recognized in the consolidated statements of profit or loss.

iii) Expenses and Income from Exchange Forward Contracts

Effects from foreign exchange forward contracts, which are measured at fair value through profit or loss, are shown as either other operating income or other operating expenses on a cumulative basis and might switch between those two items during the year-to-date reporting periods.

2.3.12 Fair Value Measurement

Fair value is a market-based measurement. For some assets and liabilities, observable market transactions or market information is available. For other assets and liabilities, observable market transactions or market information might not be available. When a price for an identical asset or liability is not observable, another valuation technique is used. To increase consistency and comparability in fair value measurements, there are three levels of the fair value hierarchy:

- Level 1 contains the use of quoted prices in active markets for identical assets or liabilities.
- Level 2 inputs are inputs other than quoted prices included within Level 1 that are observable for the asset or liability either directly or indirectly.
- Level 3 inputs are unobservable.

Within this hierarchy, estimated values are made by management based on reasonable assumptions, including other fair value methods.

For assets and liabilities that are recognized in the financial statements at fair value on a recurring basis, we determine whether transfers have occurred between levels in the fair value hierarchy by re-assessing categorization (based on the lowest level input that is significant to the fair value measurement as a whole) at the end of each reporting period.

For the purpose of fair value disclosures, classes of assets and liabilities have been determined on the basis of the nature, characteristics and risks of the asset or liability and the level of the fair value hierarchy, as explained above.

2.3.13 Inventories

Inventories are valued at the lower of cost and net realizable value.

Costs incurred in bringing each product to its present location and condition are accounted for as follows:

- raw materials and supplies: purchase cost on a first-in / first-out basis; or
- unfinished goods and finished goods: cost of direct materials and labor, including both internal manufacturing and third-party contract manufacturing organizations, or CMOs, and a proportion of manufacturing overheads based on the normal operating capacity, but excluding borrowing costs.

Net realizable value is the estimated selling price in the ordinary course of business less estimated costs of completion and the estimated costs necessary to make the sale. Write-offs are recorded if inventories are expected to be unsaleable, do not fulfill the specification defined by our quality standards or if their shelf-life has expired. For our inventories subject to the collaboration partners' gross profit share mechanism, we consider the contractual compensation payments in the estimate of the net realizable value.

Beginning with the second quarter of 2023, pre-launch products from the Comirnaty product family with their potential for economic benefit fulfill the recognition criteria for an asset under the IFRS Conceptual Framework. At each reporting date, the respective inventory is measured at the lower of cost and net realizable value. However, because is not probable until regulatory approval is obtained, we consider the net realizable value to be zero, as this is the probable amount expected to be realized from its sale until approval is obtained.

2.3.14 Cash and Cash Equivalents

Cash and cash equivalents comprise cash at banks and on hand and short-term investments that we consider to be highly liquid (including deposits, money market funds and reverse repos) with an original maturity of three months or less that are readily convertible to a known amount of cash and subject to an insignificant risk of changes in value. Deposits with an original maturity of more than three months are recognized as other financial assets.

2.3.15 Treasury Shares

We apply the par value method to our repurchases of outstanding American Depositary Shares, or ADSs. Accordingly, the nominal value of acquired treasury shares is deducted from equity and shown in the separate item “Treasury shares”. Any premium paid in excess of the nominal value of a repurchased ADS is deducted from the capital reserve. On the trade date, we recognize a liability, and on the settlement date, we settle in cash. We recognize the foreign exchange differences that may occur between the trade and settlement date as profit or loss.

2.3.16 Leases

At the inception of a contract, we assess whether the contract is, or contains, a lease. A contract is, or contains, a lease if the contract conveys the right to control the use of an identified asset for a period of time in exchange for consideration.

At inception or on reassessment of a contract that contains a lease component, the consideration in the contract is allocated to each lease component on the basis of their relative standalone prices. However, for leases of land and buildings in which we are a lessee, we have elected not to separate non-lease components, and instead account for the lease and non-lease components as a single lease component.

We recognize a right-of-use asset and a lease liability at the lease commencement date.

The right-of-use asset is initially measured at cost.

The depreciation of the right-of-use asset is calculated on a straight-line basis over the estimated useful lives of the assets or shorter lease term, as follows:

Right-of-use assets	Useful life or shorter lease term (years)
Buildings	2-25
Equipment, tools and installations	2-5
Production facilities	2-3
Automobiles	3-4

The lease liability is initially measured at the present value of the lease payments that are not paid at the commencement date, discounted using the incremental borrowing interest rate implicit in the lease or, if that rate cannot be readily determined, the Group's incremental borrowing rate. Generally, the incremental borrowing rate is used as the discount rate.

The lease liability is subsequently measured at amortized cost using the EIR method. It is remeasured when there is a change in future lease payments arising from a change in an index or rate, if there is a change in the estimate of the amount expected to be payable under a residual value guarantee, or if we change our assessment of whether we will exercise a purchase, extension or termination option. When the lease liability is remeasured, a corresponding adjustment is made to the carrying amount of the right-of-use asset or is recorded in the consolidated statements of profit or loss if the carrying amount of the right-of-use asset has been reduced to zero.

Right-of-use assets are presented separately and lease liabilities are presented under "Financial liabilities" in the consolidated statements of financial position.

Short-Term Leases and Leases of Low-Value Assets

We have elected not to recognize right-of-use assets and lease liabilities for short-term leases of machinery that have a lease term of 12 months or less or leases of low-value assets. We recognize the lease payments associated with these leases as an expense in the consolidated statements of profit or loss on a straight-line basis over the lease term.

2.3.17 Provisions

Provisions are recognized when there is a present obligation (legal or constructive) as a result of a past event, it is probable that an outflow of resources embodying economic benefits will be required to settle the obligation and a reliable estimate can be made of the amount of the obligation. When we expect some or all of a provision to be reimbursed, for example, under an insurance contract, the reimbursement is recognized as a separate asset, but only when the reimbursement is virtually certain.

A provision is also recognized for certain contracts with suppliers for which the unavoidable costs of meeting the obligations exceed the economic benefits expected to be received. The economic benefits considered in the assessment comprise the future benefits we are directly entitled to under the contract as well as the anticipated future benefits that are the economic consequence of the contract if these benefits can be reliably determined.

The expense relating to a provision is presented in the consolidated statements of profit or loss net of any reimbursement if reimbursement is considered to be virtually certain.

2.3.18 Share-Based Payments

Employees (and others providing similar services) receive remuneration in the form of share-based payments, which are settled in equity instruments (equity-settled transactions) or in cash (cash-settled transactions).

In accordance with IFRS 2, share-based payments are generally divided into cash-settled and equity-settled. Both types of payment transactions are measured initially at their fair value as of the grant date. The fair value is determined using an appropriate valuation model, further details of which are given in Note 16. Rights granted under cash-settled transactions are remeasured at fair value at the end of each reporting period until the settlement date. The cost of share-based payment awards is recognized over the relevant service period, applying either the straight-line method or the graded vesting method, where applicable.

These costs are recognized in cost of sales, research and development expenses, sales and marketing expenses or general and administrative expenses, together with a corresponding increase in equity (other reserves) or other liabilities, over the period in which the service is provided (the vesting period). The cumulative expense recognized for cash- and equity-settled transactions at each reporting date until the vesting date reflects the extent to which the vesting period has expired, and also reflects the best estimate of the number of equity instruments expected to ultimately vest.

Service and non-market performance conditions are not taken into account when determining the grant date fair value of awards, but the likelihood of the conditions being met is assessed as part of our best estimate of the number of equity instruments that will ultimately vest. Market performance conditions are reflected within the grant date fair value. Any other conditions attached to an award, but without an associated service requirement, are considered to be non-vesting conditions. Non-vesting conditions are reflected in the fair value of an award and lead to an immediate expensing of an award unless there are also service and/or performance conditions.

If we have a choice of settling either in cash or by providing equity instruments, the rights granted are accounted for as an equity-settled transaction, unless there is a present obligation to settle in cash.

If, due to local tax regulations, an amount is withheld for the employee’s tax obligations and paid directly to the tax authorities in cash on the employee’s behalf, the entire share-based payment program remains an equity-settled plan based on the IFRS 2 classification. Accordingly, the amount withheld for the employee’s tax obligations expected to be paid directly to the tax authorities is reclassified from “Other reserves” to “Other non-financial liabilities”.

2.3.19 Cash Dividend

We recognize a liability to pay a dividend when the distribution is authorized. As per the corporate laws of Germany, a distribution is authorized when it is approved by the general shareholder meeting. A corresponding amount is recognized directly in equity.

2.4 Standards Applied for the First Time

In 2024, the following potentially relevant new and amended standards and interpretations became effective, but did not have a material impact on our consolidated financial statements:

Standards / Interpretations	Date of application
Amendments to IFRS 16 Leases: Lease Liability in a Sale and Leaseback	January 1, 2024
Amendments to IAS 7 Statement of Cash Flows and IFRS 7 Financial Instruments: Disclosures: Supplier Finance Arrangements	January 1, 2024
Amendments to IAS 1 Presentation of Financial Statements: Classification of Liabilities as Current or Non-Current	January 1, 2024
Amendments to IAS 1 Presentation of Financial Statements: Non-current Liabilities with Covenants	January 1, 2024

2.5 Standards Issued but Not Yet Effective

The new and amended standards and interpretations that are issued but not yet effective by the date of issuance of the financial statements and that might have an impact on our financial statements are disclosed below. We have not adopted any standards early and intend to adopt these new and amended standards and interpretations, if applicable, when they become effective.

Standards / Interpretations		Date of application
Amendments to IAS 21 The Effects of Changes in Foreign Exchange Rates: Lack of Exchangeability		January 1, 2025
Amendments to the Classification and Measurement of Financial Instruments: – Amendments to IFRS 9 and IFRS 7	(1)	January 1, 2026
Annual Improvements Volume 11	(1)	January 1, 2026
Contracts Referencing Nature-dependent Electricity – Amendments to IFRS 9 and IFRS 7	(1)	January 1, 2026
IFRS 18 Presentation and Disclosure in Financial Statements	(1)	January 1, 2027
IFRS 19 Subsidiaries without Public Accountability: Disclosures	(1)	January 1, 2027

(1) Standards had not yet been endorsed in the European Union at the time of publication.

An analysis of the effects of IFRS 18 on us with regard to the presentation and disclosures in the financial statements has been started and is ongoing. IFRS 18 requires additional defined subtotals (operating, investing, financing) in the statement of profit and loss and disclosures about management performance measures, and adds new principles for aggregating and disaggregating information. With regard to the first-time application of the other standards and interpretations listed in the table and other standards amended in the annual improvements, it is currently estimated that there will be no material impact on our consolidated financial statements.

3 Significant Accounting Judgements, Estimates and Assumptions

The preparation of the consolidated financial statements requires management to make judgments, estimates and assumptions that affect the reported amounts of revenues, expenses, assets and liabilities, the accompanying disclosures and the disclosure of contingent liabilities. Uncertainty about these assumptions and estimates could result in outcomes that require a material adjustment to the carrying amount of assets or liabilities affected in future periods.

Significant accounting judgments, as well as key assumptions concerning the future and other key sources of estimation uncertainty at the reporting date that have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year, are described below. We based our assumptions and estimates on parameters available when the consolidated financial statements were prepared. Existing circumstances and assumptions about future developments, however, may change due to market changes or circumstances arising that are beyond the control of the Group. Such changes are reflected in the assumptions when they occur.

Revenues from Contracts with Customers

We applied the following judgments, estimates and assumptions that significantly affect the determination of the amount and timing of revenues from contracts with customers:

Identification and Determination of Performance Obligations

We generate revenues from collaboration and license agreements, which contain multiple elements, including licenses to use, research, develop, manufacture and commercialize candidates and products, research and development services as well as obligations to develop and manufacture preclinical and clinical material and products. We determined that those collaboration and license agreements qualify as contracts with customers. A contract is an agreement between two or more parties that establishes enforceable rights and obligations. At inception of each agreement, we apply judgment when determining which promises represent distinct performance obligations. If promises are not distinct, they are combined until the bundle of promised goods and services is distinct. For some agreements, this results in accounting for goods and services promised in a collaboration and license agreement as a single performance obligation with a single measure of progress. For these combined performance obligations, we assess which of these promises is the predominant promise to determine the nature of the performance obligation. When licenses are granted, we determined that the grant of the license is the predominant promise within the combined performance obligations. In our view, we grant our customers a right to access or a right to use our intellectual property due to the collaboration and license agreements.

Measurement of the Transaction Price

Our collaboration and license agreements often include variable consideration, which is contingent on the occurrence or non-occurrence of a future event (i.e., reaching a certain milestone). When determining deferred revenues from a collaboration and license agreement, we need to estimate the amount of consideration to which we will be entitled in exchange for transferring the promised goods or services to our customers.

As there are usually only two possible outcomes (i.e., milestone is reached or not), we have assessed that the method of the most likely amount is the best method to predict the amount of consideration to which we will be entitled. At contract inception, the most likely amount for milestone payments is estimated to be zero. We have assessed that the likelihood of achieving the respective milestone decreases depending on how far the expected date of achieving the milestone lies in the future. At each reporting date, we use judgment to determine when to include variable consideration in the transaction price in such a way that it is highly probable that a significant revenue reversal in the amount of cumulative revenue recognized will not occur when the associated uncertainty with respect to the variable consideration is subsequently resolved. We have concluded that future milestone payments are fully constrained at the end of the current financial year.

Future milestone payments would become unconstrained upon the satisfaction of the milestone event, specifically a development event, regulatory approval or achievement of a sales milestone.

Allocation of the Transaction Price to Performance Obligations and Revenue Recognition as Performance Obligations are Satisfied

We allocate the transaction price to performance obligations based on their relative standalone selling prices, which are generally based on our best estimates and interpretations of facts and circumstances of each contractual agreement and may require significant judgment to determine appropriate allocation.

Upfront payments and reimbursement for expenses are initially deferred on our consolidated statements of financial position. We assessed that no significant financing component exists within our collaboration agreements since the overall business purpose of advanced payments is to support the payment structure rather than to provide a significant benefit of financing. For performance obligations in which the costs vary based on progress, an input-based measure that takes into account cost incurred is the most reliable indicator of the progress of the related research activities. In other cases, revenue recognition on a straight-line basis may be the most reliable indicator of our performance toward complete satisfaction. If the contractual activities progress, the achievement of development milestones will be used to measure the progress toward complete satisfaction. We evaluate the measure of progress in each reporting period and, if necessary, adjust the measure of performance and related revenue recognition. Any such adjustments are recorded on a cumulative catch-up basis, which would affect revenues and net profit or loss in the period of adjustment.

Upon successfully commercializing a pharmaceutical product, the collaboration and license agreements also provide for additional profit-sharing or tiered royalties earned when customers recognize net sales of licensed products as well as sales milestone payments. Revenue is recognized based on the sales-based or usage-based royalty exemption; i.e., when, or as, the underlying sales occur, which is when the performance obligation has been satisfied.

Principal-Agent Considerations

Collaboration agreements that involve two or more partners who contribute to the provision of a specific good or service to a customer are assessed in terms of principal-agent considerations. Under our current collaboration agreements, the allocation of marketing and distribution rights defines territories in which the collaboration partner acts as a principal in each case. We recognize revenue net based on the collaboration partners' gross profit in territories where the partner is responsible for supply, and on a gross basis when directly supplying our customers in our territories when control has been transferred. Amounts paid to collaboration partners for their share of our profits earned where we are the principal in the transaction are recorded as cost of sales.

Pfizer Agreement Characteristics

With respect to our collaboration with Pfizer, commercial revenues are recognized based on our collaboration partner's gross profit from COVID-19 vaccine sales, which is shared under the respective collaboration agreement. In determining commercial revenues pursuant to this collaboration agreement, we are reliant on our collaboration partner for details regarding its gross profit for the period at hand. Some of the information which our collaboration partner provides us with to identify the gross profit is, by necessity, preliminary and subject to change.

Pfizer's gross profit share is calculated based on sales and takes into account transfer prices. The latter include manufacturing and shipping costs, which represent standard prices and include mark-ups on manufacturing costs as specified by the terms of the agreement. Manufacturing and shipping cost variances were considered as far as those have been identified. Nevertheless, those input parameters may be adjusted once actual costs are determined. The sales as reported by Pfizer have been used to estimate license obligations in terms of royalties and sales milestones. Sales milestones and royalties are recognized as they are earned by the partners. Sales milestones are shared equally, while royalty payments are borne by the partners on the basis of revenues in the territories for which the partners are responsible and subsequently deducted as cost under the gross profit shared. The estimated royalty fees applied to net sales reflect the license obligations to the extent currently identified from third-party contractual arrangements. Changes in estimates are accounted for prospectively, when determined.

Manufacturing cost variances include among others expenses from unused contract manufacturing capacities and overstock inventories finally scrapped. As only materialized costs – which for example means manufacturing capacities finally lapsed or inventories finally scrapped – are shared with the partner in a cash-effective manner, the gross profit share impact is anticipated once assessed as being highly probable to occur. Any changes to this assessment will be recognized prospectively.

Pfizer's determination of manufacturing and shipping costs also affects the transfer prices that have been charged to COVID-19 vaccine supplies that it manufactures and supplies to us and may be subject to adjustment whenever manufacturing and shipping cost variances are identified. Likewise, our own cost of sales and the respective gross profit share owed to our partner may be adjusted prospectively, when changes are determined.

For contract balances related to the Pfizer agreement, see Note 6. Judgment is required in determining whether a right to consideration is unconditional and thus qualifies as a receivable.

Intangible Assets

Significant assumptions and estimates are required for the identification of a potential need to recognize an impairment loss. These estimates include management's assumptions regarding future cash flow projections and economic risks that require significant judgment and assumptions about future developments. They can be affected by a variety of factors, including, but not limited to, changes in business strategy, assumptions regarding funding ability of expected R&D expenses, assumptions regarding the size of addressable markets and number of addressable indications as well as the time and probability to reach market.

Changes to the assumptions underlying our assessment of the impairment of goodwill and intangible assets could require material adjustments to the carrying amount of our recognized goodwill and intangible assets, as well as to the amounts of impairment charges recognized in profit or loss.

Significant assumptions and estimates are also required to determine the appropriate amount of amortization of intangible assets. They relate in particular to the determination of the underlying useful life. The useful life of an intangible asset is based on our estimates regarding the period over which the intangible asset is expected to generate economic benefits for us.

Contingent Liabilities

Disclosures in respect of third-party claims and litigation for which no provisions have been recognized disclosures are made in the form of contingent liabilities, unless a potential outflow of resources is considered remote. It is not practicable to estimate the financial impact of our contingent liabilities due to the uncertainties around lawsuits and claims as outlined above.

For further disclosures relating to contingent liabilities see Note 18.

Research and Development Expenses

The nature of our business and primary focus of our activities, including development of our platforms and manufacturing technologies, generate a significant amount of research and development expenses. Research costs are expensed as incurred. Development expenditures on an individual project are recognized as an intangible asset if, and only if, the capitalization criteria are met. Based on our assessment, we have concluded that, due to the inherent risk of failure in pharmaceutical development and the uncertainty of approval, these criteria are usually not met before regulatory approval is achieved. The related expenditure is reflected in the consolidated statements of profit or loss in the period in which the expenditure is incurred. We have entered into agreements under which third parties grant licenses to us, which are known as in-license agreements. If in-licensing results in consideration for the acquisition of intellectual property that meets the definition of an identifiable asset, this is capitalized as an intangible asset. If the transaction also

includes research and development services to be provided by the licensor, the share of consideration attributable to these services is recognized in research and development expenses in line with the performance of the services. The allocation of consideration attributable to the acquisition of intellectual property and consideration attributable to the research and development services provided by the licensor requires management to make judgements and assumptions. These judgments and assumptions need to be applied on a case-by-case basis and can materially affect our research and development expenses.

Business Combinations

In our accounting for business combinations, judgment is required in determining whether an intangible asset is identifiable and whether it should be recorded separately from goodwill. Additionally, estimating the acquisition-date fair values in conjunction with purchase price allocation involves estimation uncertainty and discretionary decisions. The necessary measurements are based on information available on the acquisition date and on expectations and assumptions that have been deemed reasonable by management. These judgments, estimates and assumptions can materially affect our financial position and profit.

Share-Based Payments

Determining the fair value of share-based payment transactions requires the most appropriate valuation for the specific program, which depends on the underlying terms and conditions. We used valuation models such as a binomial or Monte Carlo simulation model for the measurement of the cash- and equity-settled transactions' fair value, taking into account certain assumptions relating to a number of factors, including the volatility of the stock price, the determination of an appropriate risk-free interest rate, expected dividends and the probability of reaching a minimum hurdle to exercise the relevant options. For awards which were granted prior to the initial public offering, at a time where no quoted market prices existed, the valuation model assumptions included the option's underlying share price. For awards which were granted after the initial public offering, the grant date's share prices on the Nasdaq Global Select Market were included in the valuation.

A fluctuation assumption is applied when estimating the number of equity instruments for which service conditions are expected to be satisfied and will be revised if material differences arise. Ultimately, a true-up to the number satisfied by the settlement date will be recorded.

For further disclosures relating to share-based payments, see Note 16.

Income Taxes

We are subject to income taxes in more than one tax jurisdiction. Due to the increasing complexity of tax laws and the corresponding uncertainty regarding the legal interpretation by the fiscal authorities, tax calculations are generally subject to an elevated amount of uncertainty. To the extent necessary, possible tax risks are taken into account in the form of provisions.

We do not recognize or we would impair deferred tax assets if it is unlikely that a corresponding amount of future taxable profit will be available against which the deductible temporary differences, tax loss carry forwards and tax credits can be utilized. The assessment whether a deferred tax asset can be recognized or is impaired requires significant judgment, as we need to estimate future taxable profits to determine whether the utilization of the deferred tax asset is probable. In evaluating our ability to utilize our deferred tax assets, we consider all available positive and negative evidence, including the level of historical taxable income and projections for future taxable income over the periods in which the deferred tax assets are recoverable. Based on the requirements in IAS 12, to not place reliance on future events that are uncertain as they for example cannot be controlled, managements assessment takes particular into account the fact that there is an inherent risk of failure in pharmaceutical development and an uncertainty of approval which is dependent on external regulatory agencies' opinions. This also includes management's assessment on the character and amounts of taxable future profits, the periods in which those profits are expected to occur, and the availability of tax planning opportunities.

Our management continued to take the view that deferred tax assets on tax losses carried forward that relate to subsidiaries which have a loss-making history cannot be recognized. This includes the assessment that those subsidiaries have neither any taxable temporary differences nor any tax planning opportunities available that could support the recognition of deferred tax assets.

For further disclosures relating to deferred taxes, see Note 8.

4 Group Information

Information about Subsidiaries

The consolidated financial statements include the following subsidiaries:

Name	Country of incorporation	Registered office	% equity interest December 31, 2024	% equity interest December 31, 2023
BioNTech BioNTainer Holding GmbH	Germany	Mainz (2)	100%	100%
BioNTech Cell & Gene Therapies GmbH	Germany	Mainz (2)	100%	100%
BioNTech Collaborations GmbH	Germany	Mainz (2)	100%	n/a(1)
BioNTech Delivery Technologies GmbH	Germany	Halle (2)	100%	100%
BioNTech Diagnostics GmbH	Germany	Mainz (2)	100%	100%
BioNTech Europe GmbH	Germany	Mainz (2)	100%	100%
BioNTech Idar-Oberstein Services GmbH	Germany	Idar-Oberstein (2)	100%	100%
BioNTech Individualized mRNA Manufacturing GmbH	Germany	Mainz (2)	100%	100%
BioNTech Innovation and Services Marburg GmbH	Germany	Marburg (2)	100%	100%
BioNTech Innovation GmbH	Germany	Mainz (2)	100%	100%
BioNTech Innovative Manufacturing Services GmbH	Germany	Idar-Oberstein (2)	100%	100%
BioNTech Manufacturing GmbH	Germany	Mainz (2)	100%	100%
BioNTech Manufacturing Marburg GmbH	Germany	Marburg (2)	100%	100%
BioNTech Real Estate Holding GmbH	Germany	Holzkirchen (2)	100%	100%
InstaDeep DE GmbH	Germany	Berlin	100%	100%
JPT Peptide Technologies GmbH	Germany	Mainz (2)	100%	100%
NT Security and Services GmbH	Germany	Mainz (2)	100%	100%
reSano GmbH	Germany	Mainz (2)	100%	100%
BioNTech Australia Pty Ltd.	Australia	Melbourne	100%	100%
BioNTech R&D (Austria) GmbH	Austria	Vienna	100%	100%
Simba Merger Sub	Cayman Islands	George Town	100%	n/a(1)
BioNTech (Shanghai) Pharmaceuticals Co. Ltd.	China	Shanghai	100%	100%
InstaDeep France SAS	France	Paris	100%	100%
Biopharma BioNTech Israel Ltd.	Israel	Tel Aviv	100%	100%
New Technologies Re	Luxembourg	Luxembourg	100%	100%
InstaDeep Nigeria Limited	Nigeria	Lagos	100%	100%
BioNTech Rwanda Ltd.	Rwanda	Kigali	100%	100%
BioNTech Pharmaceuticals Asia Pacific Pte. Ltd.	Singapore	Singapore	100%	100%
BioNTech Pharmaceuticals Spain S.L	Spain	Barcelona	100%	100%
BioNTech Switzerland GmbH	Switzerland	Basel	100%	100%
BioNTech Taiwan Co. Ltd.	Taiwan	Taipei	100%	100%
InstaDeep Tunisia SARL	Tunisia	Tunis	100%	100%
BioNTech Turkey Tıbbi Ürünler Ve Klinik Araştirma Ticaret Anonim Şirketi	Turkey	Istanbul	100%	100%
BioNTech UK Ltd.	United Kingdom	London	100%	100%
InstaDeep Ltd.	United Kingdom	London	100%	100%
BioNTech Research and Development, Inc.	United States	Cambridge	100%	100%
BioNTech USA Holding, LLC	United States	Cambridge	100%	100%
BioNTech US Inc.	United States	Cambridge	100%	100%
BioNTech Delivery Technologies (US), LLC	United States	Cambridge	100%	100%
InstaDeep LLC	United States	Dover	100%	100%
JPT Peptide Technologies Inc.	United States	Cambridge	100%	100%

(1) Included during the year ended December 31, 2024.
(2) Subsidiary makes use of the exemption of Sections 264 para. 3 and 264b HGB for the 2024 financial year.

All entities listed above are included in our consolidated financial statements.

Parent Company

ATHOS KG, Holzkirchen, Germany, is the sole shareholder of AT Impf GmbH, Munich, Germany, and beneficial owner of the following percentage of ordinary shares in BioNTech at the dates as indicated. ATHOS KG via AT Impf GmbH has de facto control over BioNTech based on its substantial shareholding, which practically enables it to exercise the majority of voting rights to pass resolutions at our Annual General Meeting, or AGM.

			Ownership of ordinary shares in BioNTech (in %)	
Name	Country of incorporation	Registered office	December 31, 2024	December 31, 2023
AT Impf GmbH	Germany	Munich	42.44%	43.77%

Entity with Significant Influence over the Group

Medine GmbH, Mainz, Germany, owned the following percentage of ordinary shares in BioNTech at the following dates as indicated:

			Ownership of ordinary shares in BioNTech (in %)	
Name	Country of incorporation	Registered office	December 31, 2024	December 31, 2023
Medine GmbH	Germany	Mainz	16.85%	17.01%

5 Business Combinations

Acquisition of Biotheus

On November 13, 2024, our subsidiary, BioNTech Collaborations GmbH, entered into an agreement and plan of merger, or the Merger Agreement, with Biotheus, a clinical-stage biotechnology company dedicated to the discovery and development of novel antibodies to address unmet medical needs of patients with oncological or inflammatory diseases. The acquisition supports the global execution of our oncology strategy and provides full global rights to BNT327/PM8002, an investigational PD-L1 x VEGF-A bispecific antibody, with potential to replace current checkpoint inhibitor standard of care treatments for solid tumors.

Following the satisfaction of several customary closing conditions and regulatory approvals as defined in the Merger Agreement, the acquisition closed on January 31, 2025.

Upon closing and under the terms of the agreement, we paid Biotheus shareholders upfront of approximately $850.0 million, predominantly in cash, with a small portion in ADSs, to acquire 100% of the issued share capital of Biotheus, subject to customary purchase price adjustments, and agreed to pay additional performance-based contingent payments of up to $150.0 million if certain milestones are met.

By closing the acquisition, we gained full rights to Biotheus's pipeline candidates and its in-house bispecific antibody drug conjugate capability. The acquisition has expanded our footprint in China, adding a local research and development hub to conduct clinical trials. In addition, we have gained a biologics manufacturing facility to contribute to our future global manufacturing and supply, and more than 300 Biotheus employees in R&D, manufacturing and enabling functions have joined the BioNTech workforce.

We are in the process of performing a preliminary allocation of the total consideration and the underlying assets acquired and liabilities assumed based on their estimated fair value as of the acquisition date in accordance with IFRS 3.

Based on our initial assessment, the purchase price will be mainly allocated to amounts related to the settlement of the pre-existing relationship in connection with the License and Collaboration Agreement with Biotheus as of November 2023, which comprised the development, manufacturing and commercialization of BNT327 ex-Greater China.

The amount related to the settlement of the pre-existing relationship is identified based on the fair value of the settled rights of Biotheus in connection with contingent payments in relation to the License and Collaboration Agreement and will be separated from the remaining consideration to be transferred for the acquired business of Biotheus. The consideration for the acquired business of Biotheus will be allocated to net assets acquired, which include identified intangible assets in connection with Biotheus' BNT327 Greater China rights and other clinical pipeline candidates, property, plant and equipment, cash, financial liabilities, deferred tax liabilities and if applicable goodwill as residual.

The assessment is preliminary as the accounting for the settlement of the pre-existing relationship and business combination is still in progress.

6 Revenues from Contracts with Customers

6.1 Disaggregated Revenue Information

Set out below is the disaggregation of the Group's revenues from contracts with customers:

(in millions €)	Years ended December 31, 2024		2023		2022	
COVID-19 vaccine revenues	2,432.1	88%	3,776.2	99%	17,145.2	99%
Other revenues	319.0	12%	42.8	1%	165.4	1%
Total	**2,751.1**	**100%**	**3,819.0**	**100%**	**17,310.6**	**100%**

(in millions €) **Revenues by customers**	Years ended December 31, 2024		2023		2022	
Pfizer	2,011.7	73%	3,293.0	86%	13,795.8	80%
German Federal Ministry of Health	701.0	25%	473.6	12%	3,020.5	17%
Other customers	38.4	2%	52.4	2%	494.3	3%
Total	**2,751.1**	**100%**	**3,819.0**	**100%**	**17,310.6**	**100%**

(in millions €) Revenues by countries	Years ended December 31, 2024		2023		2022	
United States	1,847.8	67%	3,010.9	79%	12,709.7	73%
Germany	706.9	26%	482.7	13%	3,031.0	18%
Rest of the World	196.4	7%	325.4	8%	1,569.9	9%
Total	**2,751.1**	**100%**	**3,819.0**	**100%**	**17,310.6**	**100%**

COVID-19 vaccine revenues

During the year ended December 31, 2024, COVID-19 vaccines revenues were recognized from the supply and sales of our COVID-19 vaccine worldwide, mainly comprising our share of the collaboration partner's gross profit derived from sales in the collaboration partner's territory. During the year ended December 31, 2024, our commercial revenues decreased as compared to the year ended December 31, 2023, in line with a lower COVID-19 vaccine market demand. In addition, write-downs by our collaboration partner Pfizer, significantly reduced our gross profit share and hence negatively influenced our revenues for the year ended December 31, 2024. Our COVID-19 vaccine revenues are subject to seasonal effects in the fall / winter of the northern hemisphere.

Other revenues

During the year ended December 31, 2024, our other revenues were mainly derived from a pandemic preparedness contract with the German government effectively supplemented in the three months ended March 31, 2024.

The revenues from contracts with customers disclosed above were recognized as follows:

(in millions €)	Years ended December 31, 2024	2023	2022
Timing of revenue recognition			
Goods and services transferred at a point in time	611.4	776.3	4,447.2
Goods and services transferred over time	298.5	15.4	127.2
Revenue recognition applying the sales-based or usage-based royalty recognition constraint model[(1)]	1,841.2	3,027.3	12,736.2
Total	**2,751.1**	**3,819.0**	**17,310.6**

(1) Represents sales based on the share of the collaboration partners' gross profit and sales milestones.

6.2 Contract Assets

The contract assets developed as follows:

(in millions €)	2024 Current	2024 Non-current	2024 Total	2023 Current	2023 Non-current	2023 Total
As of January 1	**4.9**	**—**	**4.9**	**—**	**—**	**—**
Additions	—	28.4	28.4	4.2	—	4.2
thereof: attributable to performance obligations satisfied in prior periods	—	23.6	23.6	—	—	—
Reclassification to trade accounts receivables	(13.5)	—	(13.5)	—	—	—
Reclassification from non-current to current	18.6	(18.6)	—	—	—	—
Changes in scope of consolidation	—	—	—	0.7	—	0.7
As of December 31	10.0	9.8	19.8	4.9	—	4.9

During the year ended December 31, 2024, the contract assets were significantly influenced by the rendering of services under the pandemic preparedness contract with the German government.

6.3 Contract Liabilities

The development of the contract liabilities is as follows:

(in millions €)	2024 Current	2024 Non-current	2024 Total	2023 Current	2023 Non-current	2023 Total
As of January 1	**353.3**	**398.5**	**751.8**	**77.1**	**48.4**	**125.5**
Additions	—	—	—	387.2	444.0	831.2
Recognition as revenues	(272.7)	—	(272.7)	(202.2)	—	(202.2)
Reclassification from non-current to current	215.5	(215.5)	—	93.9	(93.9)	—
Currency effects	(1.2)	—	(1.2)	(2.7)	—	(2.7)
As of December 31	294.9	183.0	477.9	353.3	398.5	751.8

Contract liabilities significantly decreased compared to the previous year as advance payments in connection with the amendment of the COVID-19 vaccine purchase agreement with the European Commission, or EC, were consumed. As of December 31, 2024, the contract liabilities included €416.2 million of such payments and €61.1 million of remaining upfront fees from our collaboration agreement with Pfizer (Zoster) (as of December 31, 2023: €688.7 million payments under our COVID-19 vaccine purchase agreement with the European Commission and €62.3 million of remaining upfront fees from our collaboration agreement with Pfizer (Zoster)).

Set out below is the amount of revenue recognized for the periods indicated:

(in millions €)	Years ended December 31, 2024	2023	2022
Amounts included in contract liabilities at the beginning of the year	272.7	3.5	63.1

7 Income and Expenses

7.1 General Expenses

Cost of Sales

From the year ended December 31, 2023, to the year ended December 31, 2024, cost of sales decreased by €58.5 million, or 10%, from €599.8 million to €541.3 million, mainly due to recognizing lower cost of sales from our decreased COVID-19 vaccine sales, which included the share of gross profit that we owe our collaboration partner Pfizer based on our sales. The same reasoning applies to the change while comparing the years ended December 31, 2023 and 2022, which decreased by €2,395.2 million, or 1%, from €2,995.0 million to €599.8 million. In addition, cost of sales was impacted by expenses arising from inventory write-downs and scrapings in the context of the launch of our variant adapted COVID-19 vaccine in the amount of €125.8 million during the year ended December 31, 2024 (€94.5 million for year ended December 31, 2023, and nil for year ended December 31, 2022).

Research and Development Expenses

From the year ended December 31, 2023 to the year ended December 31, 2024, our research and development expenses increased by €471.1 million, or 26%, from €1,783.1 million to €2,254.2 million, mainly influenced by advancing key pipeline candidates, such as our ADC antibody and individualized cancer-immunotherapy product candidates. Further contributions to the increase came from higher personnel expenses resulting from an increase in headcount. The same reasoning applies to the change in our research and development expenses while comparing the years ended December 31, 2023 and 2022, which increased by €246.1 million, or 16%, from €1,537.0 million to €1,783.1 million.

Sales and Marketing Expenses

From the year ended December 31, 2023, to the year ended December 31, 2024, our sales and marketing expenses increased by €5.2 million, or 8%, from €62.7 million to €67.9 million, mainly due to increased expenses for setup and enhancement of commercial IT platforms and an increase in personnel expenses resulting from an increase in headcount. The same reasoning applies to the change in sales and marketing expenses while comparing the years ended December 31, 2023 and 2022, which increased by €3.2 million, or 5%, from €59.5 million to €62.7 million.

General and Administrative Expenses

From the year ended December 31, 2023 to the year ended December 31, 2024, our general and administrative expenses increased by €36.1 million, or 7%, from €495.0 million to €531.1 million, mainly influenced by increased expenses for IT services as well as by an increase in personnel expenses resulting from an increase in headcount. The same reasoning applies to the change in general and administrative expenses while comparing the years ended December 31, 2023 and 2022, which increased by €13.3 million, or 3%, from €481.7 million to €495.0 million.

7.2 Other Operating Result

(in millions €)	Years ended December 31, 2024	2023	2022
Other operating result			
Other operating income	**140.6**	**105.0**	**815.3**
Gain on derivative instruments at fair value through profit or loss	—	67.6	—
Grants	31.5	2.2	1.4
Foreign exchange differences, net	84.9	—	727.4
Other	24.2	35.2	86.5
Other operating expenses	**(811.5)**	**(293.0)**	**(410.0)**
Contractual disputes / settlements	(657.4)	—	—
Litigation costs[1]	(113.7)	(29.4)	(3.0)
Loss on derivative instruments at fair value through profit or loss	(32.4)	—	(385.5)
Foreign exchange differences, net	—	(252.0)	—
Other	(8.0)	(11.6)	(21.5)
Total other operating result	**(670.9)**	**(188.0)**	**405.3**

(1) Adjustments to the year 2022 figures relate to reclassifying legal costs in connection with certain litigation as other operating expenses, rather than general and administrative expenses, to reflect changes in reporting.

During the year ended December 31, 2024, the other operating income increased compared to the year ended December 31, 2023, as foreign exchange differences arising on operating items changed from a negative effect to a positive effect. Comparing the year ended December 31, 2023, to the year ended December 31, 2022, we had a negative effect from exchange differences.

During the year ended December 31, 2024, the other expenses increased compared to the year ended December 31, 2023, which was mainly due to the settlement of contractual disputes and related expenses to such disputes and other litigations. The amounts shown for contractual disputes are net of the related reimbursements to be received. For further information see Note 12.2. During the year ended December 31, 2023, the other operating expenses decreased compared to the year ended December 31, 2022, as the fair value measurement effect of our derivatives changing from a negative to a positive effect.

7.3 Finance Result

(in millions €)	Years ended December 31, 2024	2023	2022
Finance result			
Finance income	**664.0**	**519.6**	**330.3**
Gains from financial instruments measured at amortized cost	437.6	357.6	48.5
Gains from financial instruments measured at fair value	210.9	162.0	216.8
Foreign exchange differences, net	15.5	—	65.0
Finance expenses	**(27.4)**	**(23.9)**	**(18.9)**
Loss from financial instruments measured at fair value	(6.0)	—	—
Loss from financial instruments measured at amortized cost without expected credit losses	(4.6)	—	—
Loss from financial instruments measured at amortized cost, expected credit losses	(4.2)	—	—
Foreign exchange differences, net	—	(16.0)	—
Other	(12.6)	(7.9)	(18.9)
Total finance result	**636.6**	**495.7**	**311.4**

During the year ended December 31, 2024, the finance income increased compared to the year ended December 31, 2023, mainly due to interest income earned on security investments as bonds, commercial paper, reverse repos and deposits as well as fair value adjustments in relation to our money market funds. The same effect applies for the year ended December 31, 2023, compared to the year ended December 31, 2022.

During the year ended December 31, 2024, the finance expenses increased compared to the year ended December 31, 2023, mainly due to interest expenses for financial liabilities that have been discounted at inception date, interests on leases and tax liabilities and impairments for expected credit losses of financial assets. This was partially compensated by positive exchange rate effects . During the year ended December 31, 2023, the other finance income increased compared to the year ended December 31, 2022.

7.4 Employee Benefits Expense

(in millions €)	Years ended December 31, 2024	2023	2022
Wages and salaries	814.0	617.8	544.8
Social security costs	113.7	76.7	58.6
Pension costs	3.5	4.1	2.1
Total	**931.2**	**698.6**	**605.5**

Wages and salaries include, among other things, expenses for share-based payments. The increase is mainly due to an increase in headcount between the years ended December 31, 2024 and 2023.

8 Income Tax

Income tax for the years ended December 31, 2024, December 31, 2023, and December 31, 2022, comprised current income taxes, other taxes and deferred taxes. We are subject to corporate taxes, the solidarity surcharge and trade taxes. Our corporate tax rate in the reporting year remained unchanged (15.0%) as did the solidarity surcharge (5.5%) whereas the average trade tax rate changed resulting in a combined income tax rate of 27.6% in the year ended December 31, 2024 (during the years ended December 31, 2023 and 2022: 27.1% and 27.2%, respectively). Deferred taxes are calculated at a rate of 30.8%. BioNTech USA Holding, LLC is subject to Federal Corporate Income Tax (21.0%) as well as State Income Tax in various state jurisdictions (effective rate of 3.4%).The deferred tax rates calculations basis remained unchanged compared to the previous period.

The following table illustrates the current and deferred taxes for the periods indicated:

	Years ended December 31,		
(in millions €)	**2024**	**2023**	**2022**
Current income taxes	(2.3)	243.1	3,629.6
Deferred taxes	(10.1)	12.7	(109.9)
Income taxes expenses / (income)	**(12.4)**	**255.8**	**3,519.7**

The following table reconciles the expected income taxes to the income tax expenses. The expected income taxes were calculated using the combined income tax rate of BioNTech SE applicable to the Group and mentioned above which was applied to profit before taxes to calculate the expected income taxes.

(in millions €)	Years ended December 31, 2024	2023	2022
Profit / (Loss) before tax	**(677.7)**	**1,186.1**	**12,954.1**
Expected tax credit	(186.8)	321.8	3,529.7
Effects			
Deviation due to local tax basis	12.6	6.6	8.9
Deviation due to deviating income tax rate (Germany and foreign countries)	6.6	(0.1)	7.3
Change in valuation allowance	(16.4)	(14.3)	30.6
Effects from tax losses and tax credits	241.1	(66.5)	23.2
Change in deferred taxes due to tax rate change	9.1	(2.4)	(2.3)
Non-deductible expenses	(49.1)	3.1	2.5
Non tax-effective income	(2.1)	(0.6)	(87.9)
Non tax-effective share-based payment expenses	(37.2)	7.7	8.7
Tax-effective equity transaction costs	—	—	—
Adjustment prior year taxes	—	5.5	(31.5)
Non-tax effective bargain purchase	—	—	—
Other effects	9.8	(5.0)	30.5
Income taxes	**(12.4)**	**255.8**	**3,519.7**
Effective tax rate	**1.8%**	**21.6%**	**27.2%**

Taxes

Deferred taxes for the periods indicated relate to the following:

Year ended December 31, 2024

(in millions €)	January 1, 2024	Recognized in P&L	Recognized in OCI	Recognized directly in equity	December 31, 2024
Fixed assets	(8.4)	11.5	—	—	3.1
Right-of-use assets	(56.6)	(8.3)	—	—	(64.9)
Inventories	113.6	(31.7)	—	—	81.9
Trade and other receivables	(90.0)	(412.1)	—	—	(502.1)
Lease liabilities	57.2	13.3	—	—	70.5
Contract liabilities	(43.0)	(47.3)	—	—	(90.3)
Loans and borrowings	4.8	20.4	—	—	25.2
Net employee defined benefit liabilities	0.6	0.1	—	—	0.7
Share-based payments	142.1	20.3	—	(85.0)	77.4
Other provisions	9.8	4.4	—	—	14.2
Other (incl. deferred expenses)	(44.9)	413.1	—	—	368.2
Tax losses / tax credits	94.4	230.2	63.2	—	387.8
Deferred tax assets net (before valuation adjustment)	179.6	213.9	63.2	(85.0)	371.7
Valuation adjustment	(138.0)	(133.9)	(60.5)	—	(332.4)
Deferred tax assets / (liabilities), net (after valuation adjustment)	41.6	80.0	2.7	(85.0)	39.3
Thereof deferred tax assets	81.3	82.7	2.7	(85.0)	81.7
Thereof deferred tax liability	(39.7)	(2.7)	—	—	(42.4)

Year ended December 31, 2023

(in millions €)	January 1, 2023	Recognized in P&L	Recognized in OCI	Recognized directly in equity	December 31, 2023
Fixed assets	15.8	20.2	—	(44.4)	(8.4)
Right-of-use assets	(55.8)	(0.8)	—	—	(56.6)
Inventories	148.9	(35.3)	—	—	113.6
Trade and other receivables	(162.7)	72.7	—	—	(90.0)
Lease liabilities	55.2	2.0	—	—	57.2
Loans and borrowings	7.6	(2.8)	—	—	4.8
Contract liabilities	(10.0)	(33.0)	—	—	(43.0)
Net employee defined benefit liabilities	0.7	(0.1)	—	—	0.6
Other provisions	11.0	(1.2)	—	—	9.8
Share-based payments	188.4	12.0	—	(58.3)	142.1
Other (incl. deferred expenses)	61.5	(106.4)	—	—	(44.9)
Tax losses / tax credits	99.5	(5.1)	—	—	94.4
Deferred tax assets net (before valuation adjustment)	**360.1**	**(77.8)**	**—**	**(102.7)**	**179.6**
Valuation adjustment	(136.7)	65.1	—	(66.4)	(138.0)
Deferred tax assets / (liabilities), net (after valuation adjustment)	**223.4**	**(12.7)**	**—**	**(169.1)**	**41.6**
Thereof deferred tax assets	**229.6**	**20.8**	**—**	**(169.1)**	**81.3**
Thereof deferred tax liability	**(6.2)**	**(33.5)**	**—**	**—**	**(39.7)**

As of December 31, 2024, our accumulated tax losses comprised tax losses of German entities that were incurred prior to the establishment of a tax group with BioNTech SE or by entities that are not within the tax group or U.S. tax group. Up until the year ended December 31, 2024, our accumulated tax losses also comprised those of the German tax group. Our accumulated tax losses for the periods indicated amounted to the following:

	Years ended December 31,		
(in millions €)	2024	2023	2022
Corporate tax	1,236.7	260.7	352.3
Trade tax	989.6	140.1	204.1

	Years ended December 31,		
(in millions €)	2024	2023	2022
Federal tax credits	25.4	21.3	4.0
State tax credits	7.1	8.7	1.6

Up until the year ended December 31, 2024, deferred tax assets on tax losses were only partially recognized, as there was not sufficient probability in terms of IAS 12 that future taxable profits would have been available against which all the unused tax losses could have been utilized.

The amount of deductible temporary differences, unused tax losses, and unused tax credits for which no deferred tax asset is recognized in the statement of financial position as of December 31, 2024, is €2,028.8 million. Therefore, as of December 31, 2024, we have not recognized deferred tax assets for unused tax losses and temporary differences in an amount of €332.4 million (December 31, 2023: €138.0 million, December 31, 2022: €136.7 million).

As of December 31, 2024, we maintain the partial non-recognition of deferred tax assets for unused U.S. federal and state tax losses and tax credits at an amount of €30.5 million and €4.0 million, respectively, as there is not sufficient probability in terms of IAS 12 that future taxable income will be available against which these unused tax losses and tax credits can be utilized. The material unrecognized U.S. federal and state tax losses and tax credits will begin to expire in 2036.

We do not recognize deferred tax liabilities for taxable temporary differences associated with investments in subsidiaries, in cases where we are able to control the timing of the reversal of the temporary difference and it is probable that the temporary differences will not reverse in the foreseeable future. The aggregate amount of temporary differences associated with investments in subsidiaries, for which deferred tax liabilities have not been recognized, is €14.5 million.

The global minimum taxation for large multinational groups (known as The Pillar Two regulations) based on Base Erosion and Profit Shifting (BEPS) project by the Organization for Economic Co-operation and Development (OECD) were transposed into German law at the end of 2023 (MinStG) and came into force on January 1st, 2024. We do fall within the scope of these regulations. As of December 31, 2024 we carried out an analysis to determine the impact and jurisdictions from which we are exposed to potential effects in connection with a Pillar Two top-up tax. It was checked whether the CbCR Safe Harbor Regulations were fulfilled. In Jurisdictions where the CbCR Regulations do not apply, the effective tax rate was calculated on a simplified basis. Since our relevant effective tax rate calculated for Pillar Two purposes is mainly above 15% in all jurisdictions in which it operates, it has been determined that we are not materially subject to Pillar Two top-up taxes. We apply the exception in IAS 12, according to which no deferred tax assets and liabilities are recognized in connection with the second pillar (Pillar Two) income taxes of the OECD and no disclosures are made in this regard. We closely monitor the progress of the legislative process in each country in which we operate.

9 Earnings per Share

Basic earnings per share (EPS) is calculated by dividing the profit for the year attributable to ordinary equity holders of the parent by the weighted average number of ordinary shares outstanding during the year.

Diluted EPS is calculated by dividing the profit attributable to ordinary equity holders of the parent by the weighted average number of ordinary shares outstanding during the year, plus the weighted average number of ordinary shares that would be issued on conversion of all the dilutive potential ordinary shares into ordinary shares.

The following table reflects the income and share data used in the basic and diluted EPS calculations:

(in millions €, except per share data)	Years ended December 31, 2024	2023	2022
Profit attributable to ordinary equity holders of the parent for basic earnings	**(665.3)**	**930.3**	**9,434.4**
Weighted average number of ordinary shares outstanding for basic EPS	**240.4**	**240.6**	**243.3**
Effects of dilution from share options	—	2.1	6.5
Weighted average number of ordinary shares outstanding adjusted for the effect of dilution	**240.4**	**242.7**	**249.8**
Earnings / (Loss) per share			
Basic earnings / (loss) per share	—	—	—
Diluted earnings / (loss) per share	—	—	—

10 Other Intangible Assets and Goodwill

Goodwill

(in millions €)	Goodwill
Acquisition costs	
As of January 1, 2023	61.2
Currency differences	(5.6)
Acquisition of subsidiaries and businesses	306.9
As of December 31, 2023	**362.5**
Acquisition of subsidiaries and businesses	—
Currency differences	18.1
As of December 31, 2024	**380.6**

Intangible Assets with Indefinite Useful Lives

	CGU Immunotherapies		CGU External Product Sales of JPT		CGU External Business of InstaDeep		Total	
(in millions €)	As of December 31, 2024	As of December 31, 2023	As of December 31, 2024	As of December 31, 2023	As of December 31, 2024	As of December 31, 2023	As of December 31, 2024	As of December 31, 2023
Goodwill	369.8	352.2	0.5	0.5	10.3	9.8	380.6	362.5
Intangible assets with indefinite useful life	486.5	444.5	—	—	—	—	486.5	444.5
Total	**856.3**	**796.7**	**0.5**	**0.5**	**10.3**	**9.8**	**867.1**	**807.0**

For the year ended December 31, 2024, our goodwill relates almost completely to the CGU Immunotherapies. The CGU Immunotherapies focuses on the development of therapies in the field of oncology and infectious diseases and comprises our broad pipeline that includes mRNA-based immune activators, antigen-targeting T cells and antibodies and defined immunomodulators of various immune cell mechanisms.

We performed our annual Goodwill impairment test in October 2024.

The recoverable amount of the CGU Immunotherapies has been determined based on a fair value less cost of disposal (FVLCD), which we derived based on our market capitalization as an observable input parameter.

The recoverable amounts of the CGU External Product Sales of JPT and the CGU External Business of InstaDeep have been determined based on their value in use. In assessing value in use, the estimated future cash flows, which are derived based on a bottom-up business plan provided by the management of the respective entities, are discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the assets. A long-term growth rate of 1.5% is applied to project future cash flows after the last year of the detailed planning period.

As a result of the analysis in October 2024, we did not identify an impairment for these CGUs. Even if our market capitalization had been approximately 10% lower, FVLCD would have still been above the respective carrying amount of the CGU Immunotherapies.

Intangible assets with indefinite useful lives mainly comprised acquired intangible assets not yet available for use, or In-process R&D, of €485.5 million (as of December 31, 2023: €443.5 million). Such assets are not amortized and therefore reviewed for impairment annually. The annual impairment test was performed on an individual basis of the assets during the three months ended December 31, 2024. The recoverable amounts were determined based on the value in use. The results gave rise to impairment losses in total of €55.1 million that were related to the CGU Immunotherapies. The impairment losses were recorded under R&D expenses in the consolidated statements of profit or loss. The impairments resulted from revised prioritization of product candidates in the overall portfolio.

We examine the existence of indications of impairment using various factors, particularly deviations from sales forecasts and the analysis of changes in medium-term planning. The identification of indications of impairment takes place with the involvement of the responsible departments, taking external and internal information sources into consideration.

During the three months ended June 30, 2024, we identified a triggering event in connection with the asset related to the product candidate BNT326/YL202 due to the partial clinical hold placed on the Phase 1 trial of our partner, MediLink Therapeutics (Suzhou) Co., Ltd, or MediLink by the U.S. Food and Drug Administration, or FDA. The impairment test performed did not reveal any impairment loss. Further triggering events were identified in connection with the asset related to the product candidate BNT316/ONC-392. During the three months ended September 30, 2024, a triggering event was identified based on the operational hold of the trial. During the three months ended December 31, 2024, the trial was then placed on partial clinical hold. The FDA subsequently lifted the partial clinical holds related to both product candidates. During the three months ended December 31, 2024, we identified a triggering event based on our analysis of changes in medium-term planning. We have performed impairment tests in connection with the identified triggering events which did not give rise to any impairment loss.

A sensitivity analysis of the key assumptions, future cash flows and weighted average cost of capital, was performed as part of the scheduled impairment testing of the intangible assets not yet available for use. For those assets that have not been impaired, the sensitivity analysis did not give rise to any impairment loss, either for a reduction of 10% in future cash flows or for a 10% increase in the weighted average cost of capital.

Other Intangible Assets

(in millions €)	In-process R&D	Concessions, licenses and similar rights	Advance payments	Total
Acquisition costs				
As of January 1, 2023	—	222.3	13.1	235.4
Additions	443.5	45.7	15.8	505.0
Disposals	—	(1.6)	(1.6)	(3.2)
Reclassifications	—	4.9	(4.9)	—
Currency differences	—	(3.6)	—	(3.6)
Acquisition of subsidiaries and businesses	—	187.4	—	187.4
As of December 31, 2023	**443.5**	**455.1**	**22.4**	**921.0**
Additions	97.1	6.2	11.9	115.2
Disposals	—	(2.9)	—	(2.9)
Reclassifications	—	11.6	(11.6)	—
Currency differences	—	11.1	—	11.1
As of December 31, 2024	**540.6**	**481.1**	**22.7**	**1,044.4**

(in millions €)	In-process R&D	Concessions, licenses and similar rights	Advance payments	Total
Cumulative amortization and impairment charges				
As of January 1, 2023	—	76.9	—	76.9
Amortization	—	40.5	—	40.5
Disposals	—	(0.3)	—	(0.3)
Currency differences	—	(0.2)	—	(0.2)
As of December 31, 2023	**—**	**116.9**	**—**	**116.9**
Amortization	—	54.8	—	54.8
Impairment	55.1	28.2	—	83.3
Disposals	—	(2.8)	—	(2.8)
Currency differences	—	1.8	—	1.8
As of December 31, 2024	**55.1**	**198.9**	**—**	**254.0**

(in millions €)	In-process R&D	Concessions, licenses and similar rights	Advance payments	Total
Carrying amount				
As of December 31, 2023	**443.5**	**338.2**	**22.4**	**804.1**
As of December 31, 2024	**485.5**	**282.2**	**22.7**	**790.4**

The intangible assets resulting from licensing and collaboration agreements are combined into one class of assets, In-process R&D, due to their similar nature and use in our operations and are attributed to the CGU Immunotherapies.

The amortization of the concessions, licenses and similar rights during the year ended December 31, 2024, has been mainly recorded under R&D expenses in the consolidated statements of profit or loss.

During the year ended December 31, 2024, triggering events with respect to two intangible assets with definite useful life occurred. We performed impairment tests based on decisions to stop the development of the compounds that were acquired as part of business combinations in the past. The recoverable amounts were determined based on the value in use. The impairment tests gave rise to the full impairment of the compounds in the amount of €26.4 million. The remaining insignificant impairments relate to intangibles which are not significant for the group. The majority of these impairment losses were recorded under R&D expenses in the consolidated statements of profit or loss.

The decrease in other intangible assets by €13.7 million from December 31, 2023, to December 31, 2024, was mainly related to impairment losses of €83.3 million in total (as of December 31, 2023: nil). This was partially offset by the payments made in connection with the purchase of intangible assets. We entered into license and collaboration agreements in which we work together with partners to develop pharmaceutical products and, provided regulatory approval is granted, commercialize them. Thereof €9.4 million (as of December 31, 2023: €443.5 million) was related to upfront payments and €87.7 million (as of December 31, 2023: nil) was related to milestone payments as part of the purchase of intangible assets that were recognized as subsequent acquisition cost of the intangible assets acquired. The payments in connection with the license and collaboration agreements resulted in the recognition of intangible assets not yet available for use.

11 Property, Plant and Equipment

(in millions €)	Land and buildings	Equipment, tools and installations	Construction in progress and advance payments	Total
Acquisition and production costs				
As of January 1, 2023	217.0	273.0	235.5	725.5
Additions	9.7	50.3	189.4	249.4
Disposals	—	(2.4)	(0.2)	(2.6)
Reclassifications	9.3	22.3	(31.6)	—
Currency differences	(0.6)	(1.2)	(3.6)	(5.4)
Acquisition of subsidiaries and businesses	—	2.1	—	2.1
As of December 31, 2023	**235.4**	**344.1**	**389.5**	**969.0**
Additions	46.2	49.3	192.4	287.9
Disposals	(0.3)	(4.7)	—	(5.0)
Reclassifications	86.6	36.3	(122.9)	—
Currency differences	1.5	2.7	1.6	5.8
As of December 31, 2024	**369.4**	**427.7**	**460.6**	**1,257.7**

(in millions €)	Land and buildings	Equipment, tools and installations	Construction in progress and advance payments	Total
Cumulative depreciation and impairment charges				
As of January 1, 2023	22.0	94.3	—	116.3
Depreciation	14.4	83.3	—	97.7
Disposals	—	(1.7)	—	(1.7)
Currency differences	(0.2)	(0.3)	—	(0.5)
As of December 31, 2023	**36.2**	**175.6**	**—**	**211.8**
Depreciation	12.3	38.3	4.3	54.9
Impairment	26.0	32.1	—	58.1
Disposals	(0.1)	(4.0)	—	(4.1)
Currency differences	0.4	1.0	0.3	1.7
As of December 31, 2024	**74.8**	**243.0**	**4.6**	**322.4**

(in millions €)	Land and buildings	Equipment, tools and installations	Construction in progress and advance payments	Total
Carrying amount				
As of December 31, 2023	**199.2**	**168.5**	**389.5**	**757.2**
As of December 31, 2024	**294.6**	**184.7**	**456.0**	**935.3**

Non-Current Assets by Region

As of December 31, 2024, non-current assets comprised €177.6 million in other intangible assets, goodwill, property, plant and equipment, right-of-use assets and other assets of our subsidiaries incorporated in the United States (as of December 31, 2023: €158.2 million) as well as €529.6 million in the United Kingdom (as of December 31, 2023: €511.7 million), respectively. The remaining non-current assets of €1,683.3 million (as of December 31, 2023: €1,469.0 million) mainly relate to entities incorporated in Germany.

12 Financial Assets and Financial Liabilities

12.1 Capital Risk Management

Our capital management objectives are designed primarily to finance our growth strategy.

Our treasury committee reviews the total amount of cash and cash equivalents on a regular basis. As part of this review, the committee considers total cash and cash equivalents, cash outflow, currency translation differences and refinancing activities. We monitor cash using a burn rate. The cash burn rate is defined as the average monthly net cash flow from operating and investing activities during a financial year.

(in millions €)	December 31, 2024	December 31, 2023
Cash at banks and on hand	**450.0**	**453.1**
Security investments disclosed as cash and cash equivalents	**9,311.9**	**11,210.6**
Bank deposits	1,849.4	2,589.5
Money market funds	6,947.5	7,446.1
Reverse Repo	515.0	1,175.0
Total	**9,761.9**	**11,663.7**

In general, the aim is to protect and maximize the financial resources available for further research and development projects.

Since December 2021, we have had an investment and asset management policy in place that contains policies and processes for managing cash and cash equivalents. Under this policy, our investment portfolio is to be maintained in a manner that minimizes risks to the invested capital. These risks include mainly credit risk and concentration risk. The portfolio must provide liquidity in a timely manner to accommodate operational and capital needs. The portfolio is managed by the Treasury department.

We are not subject to externally imposed capital requirements. Our capital management objectives were achieved in the years ended December 31, 2024 and 2023.

12.2 Categories of Financial Instruments

Financial Assets and Liabilities at Amortized Cost and at Fair Value through OCI and Profit or Loss

Set out below is an overview of financial assets and liabilities at amortized cost and at fair value through OCI and profit or loss, as of the dates indicated:

December 31, 2024

	Carrying amount			Fair value			
(in millions €)	Current	Non-current	Total	Level 1 (Fair value)	Level 2 (Fair value)	Level 3 (Fair value)	Total
Financial assets subsequently measured at fair value through profit or loss							
Foreign exchange forward contracts	11.9	—	11.9	—	11.9	—	11.9
Security investments disclosed as cash and cash equivalents	6,947.5	—	6,947.5	6,947.5	—	—	6,947.5
Other financial assets	—	39.6	39.6	—	—	39.6	39.6
Financial assets subsequently measured at fair value through OCI							
Non-listed equity investments	—	1.5	1.5	—	—	1.5	1.5
Listed equity investments	—	92.7	92.7	92.7	—	—	92.7
Financial assets subsequently measured at amortized costs[(1)]							
Security investments disclosed as other financial assets	6,536.2	1,061.1	7,597.3	—	—	—	7,597.3
Security investments disclosed as cash and cash equivalents	2,364.4	—	2,364.4	—	—	—	2,364.4
Cash at banks and on hand	450.0	—	450.0	—	—	—	450.0
Trade and other receivables	1,463.9	—	1,463.9	—	—	—	1,463.9
Reimbursement asset	473.6	40.9	514.5	—	—	—	514.5
Other financial assets	—	18.2	18.2	—	—	—	18.2
Financial liabilities subsequently measured at fair value							
Foreign exchange forward contracts	16.3	—	16.3	—	16.3	—	16.3
Contingent consideration	0.9	46.9	47.8	—	—	47.8	47.8
Financial liabilities subsequently measured at amortized costs[(1)]							
Loans and borrowings	—	—	—	—	—	—	—
Trade payables and other payables	426.7	—	426.7	—	—	—	426.7
Other financial liabilities	1,426.2	—	1,426.2	—	—	—	1,426.2
Financial liabilities subsequently not measured according to IFRS 9							
Lease liabilities	39.5	214.7	254.2	—	—	—	254.2

(1) Fair values for financial assets and liabilities at amortized costs are not disclosed as the book values represent a reasonable approximation.

December 31, 2023

(in millions €)	Carrying amount			Fair value			
	Current	Non-current	Total	Level 1 (Fair value)	Level 2 (Fair value)	Level 3 (Fair value)	Total
Financial assets subsequently measured at fair value through profit or loss							
Security investments disclosed as cash and cash equivalents	7,446.1	—	7,446.1	7,446.1	—	—	7,446.1
Financial assets subsequently measured at fair value through OCI							
Non-listed equity investments	—	27.1	27.1	—	—	27.1	27.1
Listed equity investments	—	26.0	26.0	26.0	—	—	26.0
Financial assets subsequently measured at amortized costs(1)							
Security investments disclosed as other financial assets	4,885.1	1,104.6	5,989.7	—	—	—	5,989.7
Security investments disclosed as cash and cash equivalents	3,764.5	—	3,764.5	—	—	—	3,764.5
Cash at banks and on hand	453.1	—	453.1	—	—	—	453.1
Trade and other receivables	2,155.7	—	2,155.7	—	—	—	2,155.7
Other financial assets	0.2	18.4	18.6	—	—	—	18.6
Financial liabilities subsequently measured at fair value							
Foreign exchange forward contracts	0.4	—	0.4	—	0.4	—	0.4
Contingent consideration	—	38.8	38.8	—	—	38.8	38.8
Financial liabilities subsequently measured at amortized costs(1)							
Loans and borrowings	—	2.3	2.3	—	—	—	2.3
Trade payables and other payables	354.0	—	354.0	—	—	—	354.0
Other financial liabilities	414.9	—	414.9	—	—	—	414.9
Financial liabilities subsequently not measured according to IFRS 9							
Lease liabilities	28.1	188.6	216.7	—	—	—	216.7

(1) Fair values for financial assets and liabilities at amortized costs are not disclosed as the book values represent a reasonable approximation.

Trade and other receivables

Trade and other receivables significantly decreased compared to the previous year and predominantly comprise trade receivables from our COVID-19 collaboration with Pfizer as well as our direct product sales to customers in our territory. The contractual settlement of the gross profit share has a temporal offset of more than one calendar quarter. As Pfizer's financial quarter for subsidiaries outside the United States differs from ours, it creates an additional time lag between the recognition of revenues and the payment receipt. Consequently, as of December 31, 2024, our trade receivables included, in addition to the profit share for the fourth quarter of 2024, trade receivables which related to the gross profit share for the third quarter of 2024.

Reimbursement asset

For the year ended December 31, 2024, we recognized a reimbursement asset in the amount of €514.5 million, derived from the settlement as described below under other financial liabilities.

In connection with the Settlement Agreement with the National Institutes of Health, or the NIH, Pfizer has agreed to reimburse us for $364.5 million (as of December 31, 2024, amounted to €350.9 million) of the claimed royalties paid to the NIH for 2020-2023 sales under the Settlement Agreement.

In connection with the Term Sheet and the proposed Settlement Agreement with the University of Pennsylvania, or UPenn, Pfizer has agreed to reimburse us for up to $170.0 million (as of December 31, 2024, amounts to €163.6 million) of the claimed royalties payable to UPenn for 2020-2023 sales in connection with the proposed Settlement Agreement.

Other financial liabilities

During the year ended December 31, 2024, the other financial liabilities increased compared to the year ended December 31, 2023, which is essentially related to the settlement of the contractual disputes with the NIH and UPenn in the amount of €1,146.9 million.

On December 20, 2024, we entered into a Settlement Agreement with the NIH. Under the terms of the Settlement Agreement, we will, among other things, pay $791.5 million (as of December 31, 2024, amounts to €761.9 million) to the NIH.

On December 23, 2024, we entered into a binding Term Sheet with UPenn to provide terms on which we retain license rights under certain UPenn patent rights in order to allow it to continue to pursue development and commercialization of Licensed Products. Under the terms of the Term Sheet, we and UPenn intend to enter into a Settlement Agreement, pursuant to which we would, among other things, pay $400.0 million (as of December 31, 2024, amounts to €385.0 million) as royalties for calendar years 2020-2023 to UPenn as well as $52.0 million as a contribution to a research and development investment fund to be jointly managed by us and UPenn.

Equity investments designated at Fair Value through OCI

Financial investments in equity securities measured at fair value through other comprehensive income comprise the following effects:

	Years ended December 31,		
(in millions €)	**2024**	**2023**	**2022**
Net gain / (loss) on equity instruments designated at fair value through other comprehensive income	(146.6)	3.7	10.5
Total	**(146.6)**	**3.7**	**10.5**

During the year ended December 31, 2024, the non-listed and listed equity investments increased by €41.1 million compared to year-end 2023 mainly due to our investment in Autolus Therapeutics plc in February 2024 and offsetting subsequent fair value changes amounting to €146.6 million during the year ended December 31, 2024.

Measurement of fair values

The following table shows the valuation techniques used in measuring fair values for financial instruments in our consolidated statements of financial position, as well as the significant unobservable inputs used.

Type	Valuation technique	Significant unobservable inputs
Forward exchange contracts	Discounted cash flow using par method. Expected future cash flows based on foreign exchange forwards discounted over the respective remaining term of the contracts using the respective deposit interest rates and spot rates.	n/a
Non-listed equity investments	Quantitative and qualitative factors such as actual and forecasted results, cash position and financing round valuations.	• Actual and forecasted results • Net Asset Value • Cash position • Nature and pricing indication of latest financing round
Listed equity investments	Stock prices of the listed companies and applicable exchange rates, if the listing is in a foreign currency.	n/a
Money market funds	Quoted prices on an active market.	n/a
Contingent consideration	Present value of expected future payments and reflecting changes in expected achievement of underlying performance parameters and compounding effects.	• Expected future payments • Applied cost of capital
Royalty assets	Present value of expected future cash flows.	• Expected future cash flows • – Applied cost of capital

12.3 Recurring Fair Values (Level 3)

The following table shows the recurring fair value measurement of the royalty assets included in other financial assets as well as contingent considerations and the effect of the measurements on our consolidated statements of profit or loss for the current period.

(in millions €)	Financial assets Other financial assets	Financial liabilities Contingent consideration
As of January 1, 2023	**—**	**(6.1)**
Additions	—	(31.8)
Net effect on profit or loss - Finance income / (expense)		
Net change in fair value	—	(0.9)
As of December 31, 2023	**—**	**(38.8)**
As of January 1, 2024	**—**	**(38.8)**
Additions	43.4	—
Disposals	—	—
Net effect on profit or loss - Finance income / (expense)		
Net change in fair value	(3.8)	(9.0)
As of December 31, 2024	**39.6**	**(47.8)**

The sensitivity of the fair values of contingent considerations in fair value level 3 to the significant, unobservable, variable input factors, with all other factors remaining constant, is shown in the following table:

Contingent consideration

Input factor	Change in assumptions	Change in fair value with increasing input factor (in millions €)	Change in fair value with decreasing input factor (in millions €)
Cash flow projections	10%	4.4	(4.4)
Discount rate	1%	(0.6)	0.6

The sensitivity of the fair values of royalty assets included in other financial assets to the significant, unobservable, variable input factors, with all other factors remaining constant, is shown in the following table:

Royalty assets

Input factor	Change in assumptions	Change in fair value with increasing input factor (in millions €)	Change in fair value with decreasing input factor (in millions €)
Cash flow projections	10%	4.1	(4.1)
Discount rate	1%	(3.1)	3.5

The estimated fair value of non-listed equity investments would, for example, increase (decrease) if the price of the latest financing round of the respective investment were to increase (decrease) and the overall company value were higher (lower).

12.4 Financial Instruments Risk Management Objectives and Policies

Our financial liabilities mainly comprise obligations derived from other financial liabilities such as obligation from transactions with licensors, trade and other payables, lease liabilities, contingent consideration, liabilities from exchanges forward contracts. The main purpose of these financial liabilities is to enable our operations. Our principal financial assets include mainly cash, security investments, trade receivables and reimbursement assets that derive directly from our operations.

We are exposed to market risk, credit risk and liquidity risk. Our Management Board oversees the management of these risks.

The treasury committee provides assurance to our Management Board that our financial risk activities are governed by appropriate policies and procedures and that financial risks are identified, measured and managed in accordance with our policies and risk objectives. The Management Board reviews and agrees policies for managing each of these risks, which are summarized below.

12.5 Market Risks

Market risks address the risks that the fair value or future cash flows of a financial instrument will fluctuate due to changes in market prices. Market risks comprise three types of risk: interest risks, foreign currency risks and other price risks. Financial instruments affected by market risks include financial assets such as security investments, trade and other receivables, cash and cash equivalents as well as financial liabilities such as trade payables and other financial liabilities. We do not consider interest risks as well as other price risks as material risks to us.

There were no material changes in the way the risks were managed and valued during the years ended December 31, 2024 and 2023.

Foreign Currency Risks

Foreign currency risks address the risks that the fair value or future cash flows of an exposure will fluctuate because of changes in foreign exchange rates. We are subject to currency risks, as our income and expenditures are denominated in Euro and the U.S. dollar. As such, we are exposed to exchange rate fluctuations between these currencies. Cash inflows denominated in U.S. dollar mainly result from generating proceeds under our collaboration agreements. Our commercial revenues are primarily collaboration revenues from earnings based on our partners' gross profit, which is shared under the respective collaboration agreements and represents payments we receive in U.S. dollar. Cash outflows dominated in U.S. dollar mainly result from amounts spent on research and development activities and license obligations as well as expanding our global footprint further. With the aim of preserving capital, surplus liquidity is mainly invested in domestic currency investments as exchange rate fluctuations can reduce the value of our financial positions. We limit the effects of the identified risks by means of a coordinated and consistently implemented risk strategy. Besides applying natural hedging relationships where possible, foreign exchange forward contracts are concluded, as a matter of principle, as instruments to mitigate foreign currency exchange risk associated with foreign currency-denominated payments. However, the foreign exchange forward contracts which we entered into were not designated as hedging instruments under IFRS.

The carrying amount of the monetary assets and liabilities denominated in U.S. dollar at the dates indicated are as follows:

(in millions €)	December 31, 2024	December 31, 2023
Cash and cash equivalents in U.S. dollar	617.6	122.6
Monetary assets in U.S. dollar	1,484.7	1,191.9
Monetary liabilities and provisions in U.S. dollar	1,858.1	567.3
Total	**244.2**	**747.2**

The following tables demonstrate the sensitivity to a reasonable, possible change in U.S. dollar exchange rates or U.S. dollar forward rates, with all other variables held constant. The impact on our profit before tax is due to changes in the fair value of monetary assets and liabilities. The exposure to foreign currency changes for all other currencies is not material.

Currency	Country	1 € =	Closing rate 2024	Closing rate 2023	Average rate 2024	Average rate 2023
U.S. dollar	United States		1.0389	1.105	1.0824	1.0813

(in millions €)	Change in U.S. dollar rate	Effect on profit / (loss) before tax	Effect on pre-tax equity
2024	+5%	(11.6)	(11.6)
	-5%	12.9	12.9
2023	+5%	(35.5)	(35.5)
	-5%	39.2	39.3

12.6 Credit Risk Management

Credit risks address the risks that a counterparty will not meet its obligations under a financial instrument or customer contract, leading to a financial loss. We are exposed to credit risks from our operating activities, including security investments, bank deposits, reverse repos, foreign exchange transactions, trade and other receivables and cash at banks. The maximum exposure to credit risk for the components of the consolidated statements of financial position as of December 31, 2024, and December 31, 2023, are the carrying amounts as illustrated in Note 12.1 and Note 12.2.

Security Investments, Bank Deposits, Reverse Repos and Cash at banks

Our financial management is dedicated predominantly to the goal of capital preservation. Thus, all our financial activities are focused towards avoiding risks and, where they cannot be avoided, actively managing and minimizing them. Credit risks from balances with security investments, bank deposits, reverse repos and cash at banks are managed by our Treasury department in accordance with our investment and asset management policy.

Our security investments are solely invested in the highest-quality liquid assets (e.g. core European sovereign, supranational and agency bonds) and bank deposits with a maturity of more than 3 months (held at selected banks, exclusively rated as investment grade). They do not bear any currency risks or material credit risks. The bank deposits are held at selected banks, exclusively rated as investment grade. We limit our investment engagements individually and track each credit risk continuously. For reverse repos, only investment-grade counterparties qualify as our business partners and secured investments are solely collateralized by high-quality liquid assets.

Accordingly, credit risks from these financial assets are limited. Before entering into new business relationships and during ongoing business relationships, we evaluate our business partners with regard to their individual default risk. Therefore, we do not presume an increased credit risk as of the balance sheet date and determine the impairment loss based on the upcoming twelve months.

The calculated expected credit losses were not material as of December 31, 2024, and December 31, 2023.

Trade and Other Receivables

Our exposure to credit risks of trade and other receivables is primarily related to transactions with corporate customers in the biopharma / biotech industry that operate in the United States or Germany, as well as governments which are customers, in connection with fulfilling our commercial obligations in our territories as defined in our contracts with customers. An analysis of the aging of receivables and the creditworthiness of customers is used to evaluate this risk at each reporting date. We follow risk control procedures to assess the credit quality of our customers taking into account their financial position, past experience and other factors.

As of December 31, 2024, outstanding trade and other receivables were mainly due from our collaboration partner Pfizer. Besides well-established pharmaceutical companies and governmental institutions, our other customers – to a smaller extent – are medical universities, other public institutions and peers in the biopharma industry. The balances with those customers are not material. Due to this customer portfolio, the credit risk on trade and other receivables is generally very low. We have not incurred material bad debt expense and do not expect that this will change with respect to the trade and other receivables outstanding as of December 31, 2024.

The expected credit risk on trade and other receivables and contract assets derived from applying the simplified approach in calculating expected credit losses was not material as of December 31, 2024, and December 31, 2023.

12.7 Liquidity Risk

We plan to invest heavily in R&D as we make a strong drive to build out our global development organization and diversify our therapeutic area footprint. Additionally, we plan to enhance capabilities through complementary acquisitions, technologies, infrastructure and manufacturing. Our liquidity management ensures the availability of cash and cash equivalents, short term financial instruments for operational activities and further investments through appropriate budget planning. In addition, a sufficient level of cash and cash equivalents, which are managed centrally, is always maintained to finance the operational activities.

We monitor liquidity risks using a liquidity planning tool.

Ultimately, the responsibility for liquidity risk management lies with our Management Board, which has established an appropriate approach to managing short-, medium- and long-term financing and liquidity requirements. We manage liquidity risks by holding appropriate reserves based on our COVID-19 sales, as well as by monitoring forecasted and actual cash flows and reconciling the maturity profiles of financial assets and liabilities. Significant reserves currently exist and were generated during the Covid-19 pandemic.

Risk Concentration

Concentrations arise when the number of counterparties is small or when a larger number of counterparties is engaged in similar business activities, or activities in the same geographical region, or has economic features that would cause their ability to meet contractual obligations to be affected similarly by changes in economic, political or other conditions. Concentrations indicate the relative sensitivity of our performance to developments affecting a particular industry. We only have a limited number of customers mainly comprising pharmaceutical companies and governmental institutions.

The maturity profile of our financial liabilities based on contractual undiscounted payments is summarized as follows:

Year ended December 31, 2024

(in millions €)	Less than 1 year	1 to 5 years	More than 5 years	Total
Trade and other payables	426.7	—	—	**426.7**
Lease liabilities	48.1	152.7	90.3	**291.1**
Contingent consideration	—	62.5	0.1	**62.6**
Foreign exchange forward contracts	16.3	—	—	**16.3**
Other financial liabilities	1,426.2	—	—	**1,426.2**
Total	**1,917.3**	**215.2**	**90.4**	**2,222.9**

Year ended December 31, 2023

(in millions €)	Less than 1 year	1 to 5 years	More than 5 years	Total
Loans and borrowings	—	2.3	—	**2.3**
Trade and other payables	354.0	—	—	**354.0**
Lease liabilities	34.1	136.6	73.7	**244.4**
Contingent consideration	—	57.5	0.3	**57.8**
Foreign exchange forward contracts	0.4	—	—	**0.4**
Other financial liabilities	414.9	—	—	**414.9**
Total	**803.4**	**196.4**	**74.0**	**1,073.8**

12.8 Changes in Liabilities Arising from Financing Activities

Year ended December 31, 2024

(in millions €)	January 1, 2024	Cash flows	New leases and disposals	Reclassifi-cation	Other	December 31, 2024
Current obligations under lease contracts	28.1	(43.6)	19.4	35.6	—	39.5
Non-current obligations under lease contracts	188.6	—	56.0	(35.6)	5.7	214.7
Loans and borrowings	2.3	(2.3)	—	—	—	—
Total	**219.0**	**(45.9)**	**75.4**	**—**	**5.7**	**254.2**

Year ended December 31, 2023

(in millions €)	January 1, 2023	Cash flows	New leases and disposals	Reclassifi-cation	Other	December 31, 2023
Current obligations under lease contracts	36.0	(40.3)	(0.6)	34.1	(1.1)	28.1
Non-current obligations under lease contracts	174.1	—	51.1	(34.1)	(2.5)	188.6
Loans and borrowings	2.1	0.2	—	—	0.0	2.3
Total	**212.2**	**(40.1)**	**50.5**	**—**	**(3.6)**	**219.0**

13 Inventories

(in millions €)	December 31, 2024	December 31, 2023
Raw materials and supplies	268.1	347.5
Unfinished goods	7.3	4.0
Finished goods	7.9	6.2
Total	**283.3**	**357.7**

During the year ended December 31, 2024, expenses from inventory write-downs to net realizable value and scrapings due to inventories expected to be unsellable, not fulfilling the specification defined by our quality standards and shelf-life expiry resulted in €125.8 million, compared to€94.5 million in the previous period. The inventories valued at net realizable value in our consolidated statements of financial position as of December 31, 2024, take contractual compensation payments into consideration. We have not pledged any inventories as securities for liabilities. During the years ended December 31, 2024 and 2023, inventories in the amount of €129.5 million and €354.4 million, respectively, were recognized as cost of sales.

14 Other Non-Financial Assets

(in millions €)	December 31, 2024	December 31, 2023
Deferred expenses	166.8	284.9
Prepayments related to service contracts	27.7	28.3
Other	44.5	51.1
Total	**239.0**	**364.3**
Total current	212.7	280.9
Total non-current	**26.3**	**83.4**

Deferred expenses mainly comprise prepayments for future expenses of €83.1 million (€151.1 million as of December 31, 2023) for the settlement fee of the European Commission to our collaboration partner and prepayments for our collaborations with Ryvu Therapeutics S.A., Krakow, Poland, €8.5 million (€15.7 million as of December 31, 2023) and MediLink Therapeutics Co., Ltd, Suzhou, China, €17.7 million (nil as of December 31, 2023). The remaining deferred expenses mainly comprise insurance obligations of €18.2 million and service contracts.

15 Issued Capital and Reserves

As of December 31, 2024, the number of shares outstanding was 239,970,804. This amount excludes 8,581,396 shares held in treasury. As of December 31, 2023, the number of shares outstanding was 237,725,735, excluding 10,826,465 shares held in treasury.

16 Share-Based Payments

During the years ended December 31, 2024, 2023, and 2022, our share-based payment arrangements led to the following expenses:

(in millions €)	Note	Years ended December 31, 2024	2023	2022
Expense arising from equity-settled share-based payment arrangements		**85.0**	**44.1**	**46.5**
Employee Stock Ownership Plan	16.5	—	—	13.8
Chief Executive Officer Grant	16.4	—	1.2	3.1
Management Board Grant[1]	16.3	5.2	3.2	4.3
BioNTech 2020 Employee Equity Plan for Employees Based Outside North America	16.1	58.3	36.3	25.3
InstaDeep Employee Incentive Plan[2]	16.1,16.5	11.4	3.4	—
2024 North America Employee Participation Plan	16.1	10.1	—	
Expense / (Income) arising from cash-settled share-based payment arrangements		**15.9**	**7.3**	**61.5**
Employee Stock Ownership Plan	16.5	0.1	(0.9)	53.4
Management Board Grant[1]	16.2,16.3	2.6	(2.4)	—
BioNTech 2020 Restricted Stock Unit Plan for North America Employees	16.1	13.2	10.6	8.1
Total		**100.9**	**51.4**	**108.0**
Cost of sales		9.0	6.5	3.0
Research and development expenses		63.5	33.4	84.6
Sales and marketing expenses		2.5	1.0	0.8
General and administrative expenses		25.9	10.5	19.6
Total		**100.9**	**51.4**	**108.0**

(1) In May 2022, phantom options were granted under the Management Board Grant for the year 2022 which led to a modification from an equity-settled to cash-settled share-based payment arrangement and a reclassification of €3.3 million between equity and non-current other liabilities, respectively. Expenses incurred before and after the modification dates have been disclosed as equity-settled or cash-settled share-based payment arrangement, respectively. The amount includes expenses incurred with respect to a one-time signing bonus granted to Jens Holstein and Annemarie Hanekamp as of their appointment to the Management Board (see Note 21.2).

(2) The first tranche of 40,249 RSUs vested in July 2024 and was settled in the three months ended December 31, 2024, in cash.

During the years ended December 31, 2024, 2023 and 2022, our share-based payment arrangements led to a cash outflow of €154.5 million, €766.2 million and €51.8 million, respectively. We expect to settle the equity-settled share-based payment arrangements remaining from our 2020 Management Board Grant (see Note 16.3) and the Employee Stock Ownership Plan (see Note 16.5) on a net basis by delivering to the participant a number of ADSs equal to the net value of the exercised option rights after deduction of (i) the exercise price and (ii) the applicable wage taxes (including solidarity surcharge thereon and church tax, if applicable) and social security contributions resulting from such exercise. This reduces the dilutive impact of the respective rights compared to an all-equity settlement. If all of the equity-settled rights outstanding as of December 31, 2024, were to be exercised accordingly, the cash outflow to the tax authority in 2025 would amount to approximately €9.9 million (based on the share price as of December 31, 2024).

16.1 BioNTech Employee Equity Plan

BioNTech 2020 Employee Equity Plan for Employees Based Outside North America (Equity-Settled)

In December 2020, we approved the BioNTech 2020 Employee Equity Plan for employees based outside North America, or the European Plan. Under the European Plan, Restricted Stock Units, or RSUs, are offered to our employees.

Award agreements were entered as of the respective grant dates in February 2021 (LTI 2020), January 2022 (LTI 2021 program), December 2022 (LTI 2022 program) and January 2024 (LTI 2023). RSUs issued under the LTI 2020, LTI 2021, LTI 2022 and LTI 2023 programs vest annually in equal installments over respective waiting periods of four years, commencing in December 2020, December 2021, December 2022 and December 2023, respectively. All programs were classified as equity-settled as we have the ability to determine the method of settlement.

The fair values of the awards issued under the European Plan were based upon the price of our ADSs representing ordinary shares at the grant date.

	LTI 2020 program	LTI 2021 program	LTI 2022 program	LTI 2023 program
Weighted average fair value	€ 92.21	€203.22	€165.03	€ 97.99
Waiting period (in years)	4.0	4.0	4.0	4.0

The RSUs outstanding as of the respective dates are presented in the table below.

	LTI 2020 program	LTI 2021 program	LTI 2022 program	LTI 2023 program
As of January 1, 2023	235,305	104,608	396,110	—
Forfeited / Modified	(4,400)	(3,497)	(16,141)	—
As of December 31, 2023	**230,905**	**101,111**	**379,969**	**—**
As of January 1, 2024	230,905	101,111	379,969	—
Granted / Allocated	—	—	—	834,211
Settled	(225,201)[1]	—	—	—
Forfeited / Modified	(4,541)	(2,332)	(12,507)	(62,902)
As of December 31, 2024	**1,163**	**98,779**	**367,462**	**771,309**
thereof vested	1,163	75,920	187,812	194,636
thereof unvested	—	22,859	179,650	576,673

(1) The closing price of an American Depositary Share of BioNTech on Nasdaq on December 13, 2024, the last trading day before the settlement date, converted from USD to Euro using the exchange rate published by the German Central Bank (Deutsche Bundesbank) on the same day was €114.45.

BioNTech 2024 North America Employee Participation Plan (Equity-Settled)

During the year ended December 31, 2024, a new long-term incentive program for employees resident in North America was established. Within this plan, BioNTech SE has granted RSUs and Performance-RSUs (for individuals at the Job Level Vice President or above) with an equity-based LTI program to all of their employees. The number of RSUs granted to each participant is determined by multiplying the eligible earnings by a percentage within the applicable range for such individual's BioNTech Job Level and dividing such amount by the Share Price at Grant, rounding the result down to the nearest whole number. The number of PRSUs is subject to adjustments based on the performance of BioNTech ADSs against the Nasdaq Biotechnology Index (Index). In May 2024, 356,757 RSUs and 34,481 PRSUs were granted to the participants. In December 2024, 47,115 further RSUs were granted to New-Joiners. The weighted average fair value at grant dates was €93.00. Between the grant date in May and December 31, 2024, 24,284 RSUs and 2,915 PRSUs were forfeited. As of December 31, 2024, 379,588 RSUs and 31,566 PRSUs are outstanding.

All RSUs, except the PRSUs, shall vest with annually in equal tranches of 25% over a period of 4 years, starting from the date of the grant. In contrast to the German LTI employee programs 2020-2023, there is no 4-year waiting period.

InstaDeep RSU Program Employees (Partly Equity-Settled, Partly Cash-Settled)

As part of the acquisition of InstaDeep in 2023, it was agreed to issue a long-term RSU award with a total target incentive value of £15.0 million. The start of the vesting period was July 2023. The 160,997 RSUs granted under this award vest annually in equal tranches of 25% over a period of 4 years. There is no waiting period and each tranche will be settled with vesting. The weighted average fair value at grant date was €92.08.

The first tranche of 40,249 RSUs vested in July 2024 and was settled in the three months ended December 31, 2024, in cash. As of December 31, 2024, 120,748 RSUs were outstanding. The gross payout amount of the settlement of the first tranche was €2.1 million. The program is accounted for as equity-settled and it is at the discretion of the company whether the following three tranches will be settled in equity or in cash in the years 2025-2027.

BioNTech 2020 Restricted Stock Unit Plan for North America Employees (Cash-Settled)

In December 2020, we approved the BioNTech 2020 Restricted Stock Unit Plan for North America Employees, or the North American Plan. Under the North American Plan, RSUs are offered to our employees. These RSUs vest over four years, with 25% vesting one year after the service commencement date and the remainder vesting in equal quarterly installments thereafter. The first awards under the North American Plan were granted in February 2021. The service date for these awards is the date as of which the employee became employed by BioNTech US. As these RSUs are intended to be cash-settled upon vesting, the awards were defined as a cash-settled share-based payment arrangement. During the years ended December 31, 2024, 2023 and 2022, the settlement of RSUs resulted in a cash outflow of €13.9 million, €10.0 million and €9.4 million, respectively.

As of December 31, 2024, the liability related to these awards amounted to €11.2 million (€14.4 million as of December 31, 2023).

16.2 Management Board Grant – Short-Term Incentive (Cash-Settled)

Management Board's service agreements also include an STI compensation component, which is an annual performance-related bonus for the years of their respective service periods.

50% of each annual award is paid out at the end of the calendar month following the date on which the Supervisory Board has approved the consolidated financial statements of the Company for the financial / bonus year that is relevant for the determination of the STI (first installment). The remaining 50% of each annual award is paid out one year after the achievement of the performance targets for the respective bonus year has been determined, subject to an adjustment relative to the performance of the price of the American Depositary Shares representing our ordinary shares during that year (second installment). The second installments represent cash-settled share-based payment arrangements. The fair values of the liabilities are recognized over the awards' vesting periods beginning when entering or renewing service agreements, i.e., the service commencement date, until each separate determination date and are remeasured until the settlement date. As of December 31, 2024, the liability related to these awards amounted to €2.8 million (€2.1 million as of December 31, 2023).

16.3 Management Board Grant Long-Term Incentive (Partly Equity-Settled, Partly Cash-Settled)

Our Management Board's service agreements provide for long-term, four-year incentive compensation (Management Board Grant - LTI) through an annual grant of options to acquire BioNTech shares at the end of the respective waiting periods of such agreements. The options are subject to the terms and conditions of the respective authorizations of the AGM creating our Employee Stock Ownership Plan, or ESOP, and the applicable option agreements.

The options vest annually in equal installments over four years commencing on the first anniversary of the allocation date and are exercisable four years after the allocation date. Vested options can only be exercised if each of the following performance criteria has been achieved: (i) at the time of exercise, the current price is equal to or greater than the threshold amount (that is, the exercise price, provided that such amount increases by seven percentage points on each anniversary of the allocation date); (ii) at the time of exercise, the current price is at least equal to the target price (that is, (a) for the twelve-month period starting on the fourth anniversary of the allocation date, $8.5 billion divided by the total number of the ordinary shares outstanding immediately following the initial public offering (other than ordinary shares owned by BioNTech), and (b) for each twelve-month period starting on the fifth or subsequent anniversary of the allocation date, 107% of the target share price applicable for the prior twelve-month period); and (iii) the closing price for the fifth trading day prior to the start of the relevant exercise window is higher than the exercise price by at least the same percentage by which the Nasdaq Biotechnology Index (or a comparable successor index) is higher than it was on the last trading day before the allocation date. Following the expiry of the waiting period, option rights may be exercised during the exercise windows set out in the ESOP agreement. Option rights can be exercised up to ten years after the allocation date, after which they will be forfeited without compensation.

The right to receive options generally represents an equity-settled share-based payment arrangement. The allocation of options in 2020 occurred in February 2020. In May 2021 and May 2022, Management Board members received phantom options equivalent to the number of options they would have been entitled to receive for 2021 and 2022, which led to a modification from equity-settled to cash-settled share-based payment arrangement and a reclassification of €1.1 million and €3.3 million between equity and non-current other liabilities as of the respective allocation dates. During 2023 and 2024, options were granted in May 2023 and August 2024, respectively.

A Monte-Carlo simulation model has been used to measure the fair values at the (estimated) allocation dates of the Management Board Grant. This model incorporates the impact of the performance criteria regarding share price and index development described above. The parameters used for measuring the fair values as of the respective (estimated) allocation dates were as follows:

	Allocation date February 2020	Allocation date May 12, 2021[1]	Allocation date May 17, 2021[1]	Allocation date May 2022[1]	Allocation date May 2023	Allocation date August 2024
Weighted average fair value	€ 10.83	€ 36.13	€ 31.61	€ 42.24	€ 45.73	€ 37.88
Weighted average share price	€ 28.20	€ 179.16	€ 190.87	€ 157.24	€ 98.93	€ 84.23
Exercise price[2]	€ 28.32	€ 178.29	€ 179.83	€ 146.40	€ 104.86	€ 75.91
Expected volatility	36.6%	56.2%	52.3%	53.5%	47.2%	48.9%
Expected life (years)	4.8	4.6	4.6	5.8	5.8	5.8
Risk-free interest rate	1.6%	4.5%	4.2%	4.5%	3.7%	3.8%

(1) Classified as cash-settled share-based payment arrangement; all other share-based payment arrangements are classified as equity-settled.
(2) The share options allocated as of February 2020 and May 2023 as well as the phantom share options allocated as of May 2021 and 2022 are subject to an effective exercise price cap.

For the awards with estimated allocation dates, the exercise prices of options expected to be allocated have been derived from the Monte-Carlo simulation model. Those will be adjusted until the actual allocation has occurred and the exercise price has ultimately been determined.

	Estimated allocation date 2025	Estimated allocation date 2026	Estimated allocation date 2027	Estimated allocation date 2028
Weighted average fair value[1]	€ 49.89	€ 45.98	€ 43.98	34.74
Weighted average share price[1]	€ 109.68	€ 109.68	€ 109.68	€ 109.68
Exercise price[1]	€ 112.63	€ 119.48	€ 123.00	€ 130.37
Expected volatility	49.2%	47.8%	47.8%	43.7%
Expected life (years)[1]	5.8	5.8	5.8	5.8
Risk-free interest rate	4.6%	4.7%	4.7%	4.8%

(1) Valuation parameter for estimated allocation dates derived from the Monte-Carlo simulation model.

All options are subject to an effective exercise price cap, which means that the exercise price shall be adjusted to ensure that the current price of an ADS as of the exercise date does not exceed 800% of the exercise price. For the LTI 2020, the maximum economic benefit receivable is capped at $246.24, and the effective exercise price is capped at a Euro amount equivalent to $30.78. For the phantom share options issued under the LTI 2021 and 2022 programs and the options issued under the LTI 2023 and 2024 programs, the maximum compensation that each member is entitled to receive, together with other compensation components received in the respective grant year, shall not exceed €20.0 million for Ugur Sahin and €10.0 million for all others.

Expected volatility was based on an evaluation of the historical volatilities of comparable companies over the historical period commensurate with the expected option term. The expected term was based on general option holder behavior for employee options.

The share options (including phantom share options) allocated to our Management Board as of the dates indicated are presented in the table below.

	Allocation date February 2020	Allocation date May 12, 2021[1]	Allocation date May 17, 2021[1]	Allocation date May 2022[1]	Allocation date May 2023	Allocation date August 2024
(Phantom) share options outstanding as of January 1, 2023	**248,096**	**45,279**	**6,463**	**86,118**	**—**	**—**
Granted / Allocated	—	—	—	—	130,586	—
(Phantom) share options outstanding as of December 31, 2023	248,096	45,279	6,463	86,118	130,586	—
(Phantom) share options outstanding as of January 1, 2024	**248,096**	**45,279**	**6,463**	**86,118**	**130,586**	**—**
Granted / Allocated	—	—	—	—	—	193,257
Exercised[2]	(209,128)	—	—	—	—	—
Forfeited / Modified	—	(1,778)	—	(7,332)	(13,812)	(12,729)
(Phantom) share options outstanding as of December 31, 2024	**38,968**	**43,501**	**6,463**	**78,786**	**116,774**	**180,528**
thereof allocated and vested but subject to performance and/or waiting requirements	38,968	30,878	4,848	43,060	32,646	—
thereof allocated and unvested	—	12,623	1,615	35,726	84,128	180,528

(1) Classified as cash-settled share-based payment arrangement; all other share-based payment arrangements are classified as equity-settled.

(2) The average closing price of an American Depositary Share of BioNTech on Nasdaq weighted over the various dates immediately preceding the settlement dates, converted from USD to Euro using the exchange rate published by the German Central Bank (Deutsche Bundesbank) on the same days was €75.00 for all options exercised in 2024.

For the awards with estimated allocation dates, the numbers of options expected to be allocated have been derived from a Monte-Carlo simulation model. Those will be adjusted until the actual allocation has occurred and the number of options granted has ultimately been determined.

The share options expected to be allocated to our Management Board as of the dates indicated are presented in the table below.

	Estimated allocation date 2025[1]	Estimated allocation date 2026[1]	Estimated allocation date 2027[1]	Estimated allocation date 2028[1]
Share options estimated to be allocated	122,211	98,760	26,616	7,533

(1) Valuation parameter derived from the Monte-Carlo simulation model.

As of December 31, 2024, the share options allocated and expected to be allocated under our equity-settled share-based payment arrangements had a remaining weighted average expected life of 5.0 years (as of December 31, 2023: 4.1 years).

As of December 31, 2024, the liability related to the phantom option awards amounted to €5.1 million (€3.6 million as of December 31, 2023).

16.4 Chief Executive Officer Grant (Equity-Settled)

In September 2019, we granted Prof. Ugur Sahin, M.D., an option to purchase 4,374,963 of our shares under the ESOP 2017/2019 program. All of these option rights vested and became exercisable in 2023, and were exercised on August 9, 2024, with an exercise price for each option of €13.74 ($15.00) calculated using the foreign exchange rate published by the German Central Bank (Deutsche Bundesbank) on the day before the exercise date and by applying the effective exercise cap and the maximum cap mechanism as disclosed above. The closing price of one ADS on Nasdaq on the settlement date converted from U.S. Dollars to Euro using the exchange rate published by the German Central Bank (Deutsche Bundesbank) on the same day was €73.68 and led to an intrinsic value of the exercised options of €259.5 million.

In August 2024, the Supervisory Board determined that the award would be settled by the delivery of treasury shares (in the form of ADSs) equal to the net value of the exercised option rights after deduction of (i) the exercise price and (ii) the applicable wage taxes (including solidarity surcharge and church tax, if applicable) and social security contributions resulting from the exercise. The applicable taxes and social security contributions resulting from and withheld upon the exercise amounted to €123.2 million and were paid by us in September 2024 in cash directly to the respective authorities. The settlement mechanism decision changed neither the rights nor the classification of the grant as equity-settled. As a result of the settlement, no additional share-based payments under IFRS 2 were recorded during the year ended December 31, 2024.

16.5 Employee Stock Ownership Plan (Partly Equity-Settled, Partly Cash-Settled)

Employee Stock Ownership Plan (Equity-Settled)

Based on an authorization of the general meeting on August 18, 2017, we established a share option program under which we granted selected employees options to receive our shares. The program is designed as an Employee Stock Ownership Plan, or ESOP. We offered participants a certain number of option rights by their explicit acceptance of an option rights agreement. The exercise of option rights in accordance with the agreement gives the participants the right to obtain shares against payment of the exercise price. With respect to the Management Board members serving at the time of allocation, the options are subject to the effective exercise price cap and maximum cap mechanisms. Under the exercise price cap, the exercise price shall be adjusted to ensure that the current price of an ADS as of the exercise date does not exceed 800% of the exercise price. Under the maximum cap mechanism, the maximum economic benefit receivable in respect of any exercised option, was capped at $240.00, with the effective exercise price being capped at a Euro amount equivalent to $30.00. Under the ESOP, the option rights (other than Özlem Türeci's, and Ryan Richardson's options) fully vest after four years and can be exercised if: (i) the waiting period of four years has elapsed; and (ii) at the time of exercise, the average closing price of the shares of the Company or the average closing price of the right or certificate to be converted into an amount per share on the previous ten trading days preceding the exercise of the option right exceeds the strike price by a minimum of 32%, with this percentage increasing by eight percentage points as of the fifth anniversary of the respective issue date and as of each subsequent anniversary date. Following the expiry of the waiting period,

option rights may be exercised within a period of four weeks from the date of the Annual General Meeting or the publication of the annual financial statements, the semi-annual report or our most recent quarterly report or interim report (exercise windows). The option rights can be exercised up to eight years after the allocation date. If they have not been exercised by that date, they will be forfeited without compensation.

By way of a shareholders' resolution of the general meeting on August 19, 2019, the authorization to issue such option rights was amended such that, in order for the options to be exercisable, the average closing price of the Company's shares or the average closing price of the right or certificate to be converted into an amount per share on the ten trading days immediately preceding the exercise must exceed the strike price by a minimum of 28%, with this percentage increasing by seven percentage points as of the fifth anniversary of the issue date and as of each subsequent anniversary date. Furthermore, in addition to the aforementioned requirements, the exercise is only possible if the share price (calculated by reference to the price of the ordinary share underlying the ADS) has performed similar to or better than the Nasdaq Biotechnology Index. The changes made do not affect option rights already issued.

The fair value of the ESOP has been measured using a binomial model. Service conditions attached to the arrangement were not taken into account in measuring the fair value.

The share options can only be exercised by the grantee if the price of the share is equal or greater to the threshold amount as defined in the ESOP agreement. Moreover, the option rights can only be exercised if the IPO has occurred. Both conditions have been incorporated into the fair value at the grant date.

The inputs used in the measurement of the fair values at the grant date of the ESOP were as follows:

	Grant date November 15, 2018		Grant dates between February 21 and April 3, 2019	
Weighted average fair value	€	7.41	€	6.93
Weighted average share price	€	14.40	€	15.72
Exercise price[1]	€	10.14	€	15.03
Expected volatility		46.0%		46.0%
Expected life (years)		5.8		6.0
Risk-free interest rate		0.1%		0.1%

(1) With respect to the Management Board members appointed as such at the time the options were granted, the options are subject to the effective exercise price cap as well as the maximum cap mechanism.

Expected volatility has been based on an evaluation of the historical and the implied volatilities of comparable companies over the historical period commensurate with the expected term. The expected term has been based on general option holder behavior for employee options.

Set out below is an overview of changes to share options outstanding and number of ordinary shares underlying these options that occurred during the periods indicated:

	Share options outstanding	Number of ordinary shares underlying options	Weighted average exercise price (€)[1]
As of January 1, 2023	57,584	1,036,514	11.10
Exercised[2]	(39,785)	(716,121)	11.04
As of December 31, 2023	**17,799**	**320,393**	**11.24**
As of January 1, 2024	17,799	320,393	11.24
Exercised[2]	(7,725)	(139,053)	10.14
As of December 31, 2024	**10,074**	**181,340**	**12.08**
thereof vested	10,074	181,340	12.08
thereof unvested	—	—	—

(1) With respect to the Management Board members appointed as such at the time the options were granted, the options are subject to the effective exercise price cap as well as the maximum cap mechanism.

(2) The average closing price of an American Depositary Share of BioNTech on Nasdaq weighted over the various dates immediately preceding the settlement dates, converted from USD to Euro using the exchange rate published by the German Central Bank (Deutsche Bundesbank) on the same days was €83.45 and €96.49 for all settlements during the years ended December 31, 2024 and 2023, respectively.

In September 2022, the Supervisory Board determined the ESOP settlement by the delivery of treasury shares (in the form of ADSs) equal to the net value of the exercised option rights after deduction of (i) the exercise price and (ii) the applicable wage taxes (including solidarity surcharge thereon and church tax, if applicable) and social security contributions resulting from such exercise. The settlement was applied during the exercise windows in 2024 and 2023.

As of December 31, 2024, the share options outstanding under our equity-settled share-based payment arrangements had a remaining weighted average expected life of 0.1 years (as of December 31, 2023: 0.8 years).

InstaDeep Employee Stock Ownership Awards (Equity-Settled)

As part of the acquisition of InstaDeep in 2023, we agreed to issue long-term ESOP awards with a total target incentive value of £15.0 million. With this award, 398,013 options were granted to the InstaDeep employees. The awards are subject to a 4-year cliff vesting and will vest and become exercisable in July 2027. The exercise price is $94.47 for all InstaDeep employees located in France and Rest of World and $100.34 for two employees located in the US. As of December 31, 2024, 398,013 options are outstanding.

The fair value of the ESOP awards has been measured using a Monte Carlo simulation. For the ESOPs granted under the InstaDeep Employee Stock Ownership awards, the same performance requirements that allow the ESOPs to be exercised apply as for the BioNTech Employee Stock Ownership Plan.

Employee Stock Ownership Plan (Cash-Settled)

Phantom options which were granted under the ESOP mainly during the year ended December 31, 2022, each give the participants the right to receive a cash payment equal to the difference between an exercise closing price (average closing price of an American Depositary Share of BioNTech on Nasdaq over the last ten trading days preceding the exercise date) and the exercise price. The phantom options can only be exercised by the grantee if the price of the share is equal or greater to the threshold amount as defined in the ESOP agreement. The majority of options have an exercise price of €10.14. During the years ended December 31, 2024 and 2023, 50,748 and 52,100 cash-settled phantom option rights were exercised and resulted in a cash outflow of €3.8 million and €4.5 million, respectively. The average 10-day closing prices of an American Depositary Share of BioNTech on Nasdaq weighted over the various settlement dates converted from USD to Euro using the exchange rate published by the German Central Bank (Deutsche Bundesbank) on the same days was €92.70 and €96.25. As of December 31, 2024, 58,903 cash-settled option rights remained outstanding. As of December 31, 2024, the liability related to cash-settled share-based payment option rights amounted to €5.0 million (€8.5 million as of December 31, 2023). The liability is based on the fair value of the respective rights. The fair value is measured using a binomial model consistent with the grant date fair value measurement of the equity-based option rights described above, which is updated on every reporting date.

17 Provisions

(in millions €)	**December 31, 2024**	**December 31, 2023**
Contractual disputes / settlements	85.7	118.2
Obligations from onerous CMO contracts	50.7	80.2
Other	29.3	79.7
Total	**165.7**	**278.1**
Total current	144.8	269.3
Total non-current	20.9	8.8

As of December 31, 2024, our current provisions included €85.7 million in contractual disputes mainly related to collaborators regarding, among other things, the interpretation of each party's obligations or the amounts payable under the respective agreements (€118.2 million as of December 31, 2023). Acknowledging a decrease in obligations identified as contractual disputes, the change of €32.5 million compared to the previous period related entirely to consumption.

As of December 31, 2024, our current provisions included €50.7 million (€80.2 million as of December 31, 2023) of obligations for production capacities derived from contracts with Contract Manufacturing Organizations, or CMOs, that became redundant. The change of €29.5 million compared to December 31, 2023, related entirely to release of provision.

As of December 31, 2024, our current provisions included €29.3 million in other obligations mainly comprising employee related obligations (€79.7 million as of December 31, 2023, mainly comprising inventor remunerations as well as customs and duties). The change of €50.4 million compared to the previous period related mainly to consumption.

18 Contingent Liabilities and Other Financial Commitments

Contingent Liabilities

Our contingent liabilities include, but are not limited to, intellectual property disputes and contractual disputes regarding, among other things, the interpretation of each party's obligations or the amounts payable under the respective agreements, product-related disputes and actions by or on behalf of our shareholders.

From time to time, in the normal course and conduct of our business, we may be involved in proceedings with third parties about considering, for example, the use and/or remuneration for use of such third party's intellectual property. As of December 31, 2024, none of the intellectual property-related considerations outlined below, of which we have either been notified, or for which potential claims could be brought against us or our subsidiaries in the future, fulfill the criteria for recording a provision.

We are subject to an increasing number of product-related disputes. Our product liability claims often involve highly complex issues related to medical causation, correctness and completeness of product information (Summary of Product Characteristics/package leaflet) as well as label warnings and reliance thereon, scientific evidence and findings, actual and provable defectiveness and injury, and other matters. These complexities vary from matter to matter. As of December 31, 2024, none of these claims fulfill the criteria for recording a provision.

We are currently subject to certain claims by or on behalf of our shareholders. As of December 31, 2024, these claims do not fulfill the criteria for recording a provision.

Substantially all of our contingent liabilities are subject to significant uncertainties and, therefore, determining the likelihood of a loss and/or the measurement of any loss can be complex. Consequently, we are unable to estimate the range of reasonably possible loss. Our assessments, which result from a complex series of judgments about future events and uncertainties, are based on estimates and assumptions that have been deemed reasonable by management, but that may prove to be incomplete or inaccurate, and unanticipated events and circumstances may occur that might cause us to change those estimates and assumptions. We currently do not believe that any of these matters will have a material adverse effect on our financial position, and will continue to monitor the status of these and other claims that may arise. However, we could incur judgments, enter into settlements or revise our expectations regarding the outcome of matters, which could have a material adverse effect on our results of operations and/or our cash flows in the period in which the amounts are accrued or paid. We will continue to evaluate whether, if circumstances were to change in the future, the recording of a provision may be needed and whether potential indemnification entitlements exist against any such claim.

Certain pending matters to which we are a party are discussed below.

Alnylam Proceedings

In March 2022, Alnylam Pharmaceuticals, Inc., or Alnylam, filed a lawsuit against Pfizer and Pharmacia & Upjohn Co. LLC in the U.S. District Court for the District of Delaware alleging that an existing patent owned by Alnylam, U.S. Patent No. 11,246,933, or the '933 Patent, is infringed by the cationic lipid used in Comirnaty, and seeking monetary relief, which is not specified in their filings. We filed a counterclaim to become party to the Alnylam proceeding, and in June 2022, Alnylam added to its claims allegations that we induced infringement of the '933 Patent. Additionally, in July 2022, Alnylam filed a lawsuit against us, our wholly owned subsidiary, BioNTech Manufacturing GmbH, Pfizer and Pharmacia & Upjohn Co. LLC in the U.S. District Court for the District of Delaware alleging that we also induced infringement of a newly issued patent, U.S. Patent No. 11,382,979, or the '979 Patent, which is a continuation of the '933 Patent. The two lawsuits were consolidated on July 28, 2022. In May 2023, Alnylam filed a third lawsuit against Pfizer Inc. and Pharmacia & Upjohn Co. LLC in the U.S. District Court for the District of Delaware alleging infringement of U.S. Patent Nos. 11,633,479; 11,633,480; 11,612,657; and 11,590,229, all of which are continuations of the '933 Patent. We filed a counterclaim to become party to the new proceeding, and in July 2023, Alnylam added to its claims allegations that we induced infringement of the four new patents. All of the lawsuits have been consolidated into a single proceeding, which is currently expected to go to trial in July 2025.

We believe we have strong defenses against the allegations claimed relative to each of the patents and intend to vigorously defend ourselves in the proceedings mentioned above. However, our analysis of Alnylam's claims is ongoing and complex, and we believe the outcome of the suit remains substantially uncertain. Taking into account discussions with our external lawyers, we do not consider the probability of an outflow of resources to be sufficient to recognize a provision at the balance sheet date. In our opinion, these matters constitute contingent liabilities as of the balance sheet date. However, it is currently impractical for us to estimate with sufficient reliability the respective contingent liabilities.

CureVac Proceedings

Infringement Proceedings – EP'122, DE'961, DE'974, DE'575, and EP'668

In July 2022, CureVac AG (CureVac) filed a lawsuit against us and our wholly owned subsidiaries, BioNTech Manufacturing GmbH and BioNTech Manufacturing Marburg GmbH, in the Düsseldorf Regional Court, alleging Comirnaty's infringement of one European patent, EP1857122B1, or EP'122, and three Utility Models DE202015009961U1, DE202015009974U1, and DE202021003575U1. In August 2022, CureVac AG added European Patent EP3708668B1, or EP'668, to its German lawsuit.

On August 15, 2023, the Düsseldorf Regional Court held a hearing on infringement with respect to all five IP rights. At the hearing, the Court suspended its infringement ruling with respect to EP'122 until December 28, 2023. On September 28, 2023, the Court issued orders suspending its infringement rulings with respect to the remaining four IP rights (DE'961, DE'974, DE'575, and EP'668) pending validity decisions in the DE'961, DE'974, and DE'575 cancellation proceedings before the German Patent and Trademark Office and in the EP'668 opposition proceedings before the Opposition Division of the European Patent Office, or EPO. In the September 28th orders, the Court explained that it was suspending its

infringement rulings until validity decisions are reached, while contemporaneously noting concerns regarding the validity of DE'961, DE'974, DE'575, and EP'668. On December 28, 2023, the Düsseldorf Regional Court stayed the infringement proceedings as to EP'122 until a final appellate decision is rendered as to the validity of EP'122 by the Federal Court of Justice. On June 7, 2024, CureVac AG waived DE'575 and withdrew this utility model from the infringement proceedings. On July 2, 2024, the EPO Opposition Division issued a preliminary opinion noting that it believes EP'668 is likely invalid, and set an oral hearing for March 2025.

Infringement Proceedings – EP'755, DE'123, and DE'130

In July 2023, CureVac filed a second lawsuit against us and our wholly owned subsidiaries, BioNTech Manufacturing GmbH and BioNTech Manufacturing Marburg GmbH, in the Düsseldorf Regional Court, alleging Comirnaty's infringement of one European patent, EP4023755B1, or EP'755, and two Utility Models DE202021004123U1, and DE202021004130U1. On June 7, 2024, CureVac waived DE'123 and withdrew this utility model from the infringement proceedings. A hearing on infringement with respect to EP'755 and DE'130 that was scheduled to occur in the Düsseldorf Regional Court on September 10, 2024 was rescheduled for July 2025 and the Court suspended its infringement ruling with respect to DE'130 until a validity decision was reached in the co-pending cancellation proceeding before the German Patent and Trademark Office. On July 24, 2024, the EPO Opposition Division issued a preliminary opinion noting that it believes EP'755 is likely invalid, and set an oral hearing for May 2025.

Nullity Proceedings – EP'122

In September 2022, we filed a nullity action in the Federal Patent Court of Germany seeking a declaration that EP'122 is invalid. In April 2023, the Federal Patent Court of Germany issued a preliminary opinion in the EP'122 nullity action in support of the validity of EP'122. The preliminary opinion did not address any infringement of EP'122. The preliminary opinion is a preliminary assessment by the court of the merits of a claim, and is non-binding. On December 19, 2023, the Federal Patent Court held an oral hearing, after which it nullified EP'122. On April 30, 2024, the Federal Patent Court issued a judgment containing its written reasons for nullifying EP'122. On May 7, 2024, CureVac appealed the judgment, which is currently pending.

Cancellation Proceedings – DE'961, DE'974, and DE'575

In November 2022, we filed cancellation actions seeking the cancellation of the three German Utility Models in the German Patent and Trademark Office. On December 27, 2023, the German Patent and Trademark Office issued a preliminary opinion that DE'974 is likely to be cancelled. On January 23, 2024, the German Patent and Trademark Office issued a preliminary opinion that DE'961 is likely to be cancelled based on invalidity pursuant to para. 1 (2) no. 5 Utility Model Act. On March 7, 2024, the German Patent and Trademark Office issued a preliminary opinion that DE'575 is likely to be cancelled. On June 6, 2024, CureVac submitted a written statement to the German Patent and Trademark Office waiving DE'575. On June 12, 2024, we withdrew our request for cancellation of DE'575. On June 25 and 26, 2024, the German Patent and Trademark Office heard oral arguments regarding DE'961 and DE'974, and at the conclusion of the hearing on June 26, 2024, confirmed that both DE'961 and DE'974 were cancelled. In November 2024, the German Patent and Trademark Office issued its written decisions cancelling DE'961 and DE'974. CureVac has filed an appeal in both cancellation proceedings, which are currently pending.

Cancellation Proceedings– DE'123 and DE'130

In November 2023, we filed cancellation actions seeking the cancellation of German Utility Models DE'123 and DE'130 in the German Patent and Trademark Office. On June 6, 2024, CureVac submitted a written statement to the German Patent and Trademark Office waiving DE'123. On June 12, 2024, we withdrew our request for cancellation of DE'123. On December 5, 2024, the German Patent and Trademark Office issued a preliminary opinion that DE'130 is likely to be cancelled.

United States

In July 2022, we and Pfizer filed a complaint for a declaratory judgment in the U.S. District Court for the District of Massachusetts, seeking a judgment of non-infringement by Comirnaty of U.S. Patent Nos. 11,135,312; 11,149,278; and 11,241,493. In May 2023, the action in the U.S. District Court for the District of Massachusetts was transferred to the U.S. District Court for the Eastern District of Virginia, where CureVac filed counterclaims asserting infringement of six additional U.S. patents, U.S. Patent Nos. 10,760,070; 11,286,492; 11,345,920; 11,471,525; 11,576,966; and 11,596,686. In July 2023, CureVac filed amended counterclaims to assert an additional U.S. patent, U.S. Patent No. 11,667,910. In June 2024, CureVac voluntarily dismissed with prejudice its claims of infringement with respect to the '493, '525, and '966 patents. Currently, a three-week jury trial is scheduled to begin on March 3, 2025, and an one-week bench trial regarding the prosecution laches defense is scheduled to begin on April 15, 2025.

United Kingdom

In September 2022, we and Pfizer filed a declaration of non-infringement and revocation action against EP'122 and EP'668 in the Business and Property Courts of England and Wales, in the UK High Court of Justice, or the UK High Court. In October 2022, CureVac responded by filing a counterclaim alleging infringement of the EP'122 and EP'668 patents in the Business and Property Courts of England and Wales, in the UK High Court. On December 18, 2023, we and Pfizer amended our pleadings to add a claim for revocation and declarations of invalidity and non-infringement with respect to EP'755. The UK High Court held a trial on EP'668 and EP'755 between July 10, 2024 and July 24, 2024. On October 8, 2024, the UK High Court released a judgment finding both EP'668 and EP'755 invalid. The UK High Court held a hearing on November 15, 2024, during which it denied CureVac permission to appeal the judgment. On December 5, 2024, CureVac sought permission from the UK Appeals Court to appeal the judgment. With respect to EP'122, on October 25, 2024, CureVac agreed to a final and unappealable revocation of the UK designation of EP'122 and to discontinue its counterclaim for infringement.

We believe we have strong defenses against the allegations claimed relative to each of the patents and utility models and intend to vigorously defend ourselves in the proceedings mentioned above. However, our analysis of CureVac's claims is ongoing and complex, and we believe the ultimate outcomes remain substantially uncertain. Taking into account discussions with our external lawyers, we do not consider the probability of an outflow of resources to be sufficient to recognize a provision at the balance sheet date. In our opinion, these matters constitute contingent liabilities as of the balance sheet date. However, it is currently impractical for us to estimate with sufficient reliability the respective contingent liabilities.

Moderna Proceedings

Germany

Infringement Proceedings – EP'949 and EP'565

In August 2022, Moderna filed a lawsuit against us and our wholly owned subsidiaries, BioNTech Manufacturing GmbH, BioNTech Europe GmbH and BioNTech Manufacturing Marburg GmbH, as well as Pfizer, Pfizer Manufacturing Belgium NV and Pfizer Ireland Pharmaceuticals in the Düsseldorf Regional Court alleging Comirnaty's infringement of two European patents, 3590949B1, or EP'949, and 3718565B1, or EP'565. On November 7, 2023, the Opposition Division of the EPO revoked EP'565 after a one-day oral hearing, and on December 7, 2023, it issued its written decision revoking EP'565. On December 8, 2023, the Opposition Division issued a preliminary opinion noting that it believes EP'949 is likely invalid. As a result of those developments in the EPO proceedings, the Düsseldorf Regional Court postponed its hearing on infringement with respect to EP'949, originally scheduled for December 12, 2023, to January 21, 2025. On February 7, 2024, Moderna appealed the Opposition Division's revocation decision on EP'565, and the appeal is currently pending. On May 16, 2024, the Opposition Division decided that EP'949 is valid, in amended form, and issued its written decision regarding the same on July 8, 2024. BioNTech appealed this decision, and the appeal is currently pending.

United Kingdom

In August 2022, Moderna filed a lawsuit asserting Comirnaty's infringement of EP'949 and EP'565 against us and our wholly owned subsidiaries, BioNTech Manufacturing GmbH, BioNTech Europe GmbH and BioNTech Manufacturing Marburg GmbH, and Pfizer Limited, Pfizer Manufacturing Belgium NV and Pfizer Inc. in the Business and Property Courts of England and Wales, in the UK High Court. In September 2022, we and Pfizer filed a revocation action in the Business and Property Courts of England and Wales requesting revocation of EP'949 and EP'565.

The UK High Court held a trial between April 22, 2024, and May 21, 2024. On July 2, 2024, the UK High Court released two judgments. The first judgment concerns the validity of EP'949 and EP'565. In this first judgment, the UK High Court found that EP'565 is invalid and therefore not infringed, while EP'949 is valid and infringed. The second judgment concerns whether Moderna's October 2020 commitment not to "enforce [its] COVID-19 related patents against those making vaccines intended to combat the pandemic," or the Patent Pledge, amounted to a consent under UK law to carry out any acts that would otherwise amount to patent infringement. With respect to this judgment, the UK High Court found that Moderna's Patent Pledge amounted to consent to carry out activities that might otherwise infringe its patents prior to March 2022, but not after March 2022.

The UK High Court held a hearing on September 25, 2024, during which it granted Pfizer and BioNTech permission to appeal its judgment regarding the validity of EP'949, and denied Moderna permission to appeal its judgment regarding validity of EP'565. On October 16, 2024, Moderna sought permission from the UK Appeals Court to appeal the EP'565 judgment. On November 11, 2024, the UK Appeals Court denied Moderna's application to appeal; accordingly, the UK designation of EP'565 is finally revoked with no further opportunity to appeal in the UK. No party sought permission to appeal the UK High Court's judgment on the patent pledge.

United States

U.S. District Court Litigation

In August 2022, Moderna filed a lawsuit in the U.S. District Court for the District of Massachusetts against us and our wholly owned subsidiaries BioNTech Manufacturing GmbH and BioNTech US Inc. and Pfizer Inc. alleging Comirnaty's infringement of U.S. Patent Nos. 10,898,574; 10,702,600 and 10,933,127 and seeking monetary relief. On April 12, 2024, the U.S. District Court for the District of Massachusetts stayed the litigation pending resolution of the inter partes review of U.S. Patent Nos. 10,702,600 and 10,933,127.

Inter Partes Review

In August 2023, Pfizer and we filed petitions seeking inter partes review of U.S. Patent Nos. 10,702,600 and 10,933,127 before the United States Patent Trial and Appeal Board, or the PTAB. On March 6, 2024, the PTAB issued decisions instituting inter partes review proceedings on all challenged claims of U.S. Patent Nos. 10,702,600 and 10,933,127. An oral hearing on the merits occurred on December 10, 2024, and a first-instance decision by the PTAB is expected by March 2025.

Netherlands

In September 2022, Moderna filed a lawsuit against us and our wholly owned subsidiary BioNTech Manufacturing GmbH and Pfizer B.V., Pfizer Export B.V., C.P. Pharmaceuticals International C.V. and Pfizer Inc. in the District Court of The Hague alleging Comirnaty's infringement of EP'949 and EP'565. The District Court of the Hague held a hearing on October 6, 2023, on infringement and validity with respect to EP'949. On December 6, 2023, the Court found EP'949 to be invalid. On March 5, 2024, Moderna appealed this decision, and the appeal is pending. The EP'565 case has been stayed pending the outcome of Moderna's appeal of the Opposition Division's revocation of EP'565.

Ireland

In May 2023, Moderna filed a lawsuit against us and our wholly owned subsidiary BioNTech Manufacturing GmbH, Pfizer Inc., Pfizer Healthcare Ireland, Pfizer Ireland Pharmaceuticals, and C.P. Pharmaceuticals International C.V. alleging Comirnaty's infringement of EP'949 and EP'565 in the High Court of Ireland. On February 26, 2024, the High Court of Ireland stayed the lawsuit pending the final determination of the EPO opposition proceedings for EP'949 and EP'565 (in each case including any appeals).

Belgium

In May 2023, Moderna filed a lawsuit against us, our wholly owned subsidiary BioNTech Manufacturing GmbH, Pfizer Inc. and Pfizer Manufacturing Belgium alleging Comirnaty's infringement of EP'949 and EP'565 in the Brussels Dutch-speaking Enterprise Court. On May 29, 2024, the parties filed a joint request to stay the proceedings, which was entered by the Enterprise Court.

All of the above proceedings are currently pending.

We believe we have strong defenses against the allegations claimed relative to each of the patents and intend to vigorously defend ourselves in the proceedings mentioned above. However, our analysis of Moderna's claims is ongoing and complex, and we believe the outcome of the suit remains substantially uncertain. Taking into account discussions with our external lawyers, we do not consider the probability of an outflow of resources to be sufficient to recognize a provision at the balance sheet date. In our opinion, these matters constitute contingent liabilities as of the balance sheet date. However, it is currently impractical for us to estimate with sufficient reliability the respective contingent liabilities.

Arbutus and Genevant Proceedings

In April 2023, Arbutus and Genevant filed a lawsuit against Pfizer and us in the U.S. District Court for the District of New Jersey alleging that Pfizer and we have infringed the following patents owned by Arbutus: U.S. Patent Nos. 9,504,651; 8,492,359; 11,141,378; 11,298,320; and 11,318,098, through the use of Genevant's lipid nanoparticle technology and methods for producing such lipids in Comirnaty, and seeking monetary relief. This proceeding is currently pending.

We believe we have strong defenses against the allegations claimed relative to each of the patents and intend to vigorously defend ourselves in the lawsuit mentioned above. However, our analysis of Arbutus and Genevant's claims is ongoing and complex, and we believe the outcome of the suit remains substantially uncertain. Taking into account discussions with our external lawyers, we do not consider the probability of an outflow of resources to be sufficient to recognize a provision at the balance sheet date. In our opinion, these matters constitute contingent liabilities as of the balance sheet date. However, it is currently impractical for us to estimate with sufficient reliability the respective contingent liabilities.

GlaxoSmithKline Proceedings

In April 2024, GSK filed a lawsuit against Pfizer, Pharmacia & Upjohn Co. LLC, BioNTech SE, BioNTech Manufacturing GmbH, and BioNTech US Inc. in the United States District Court for the District of Delaware alleging that the cationic lipid used in COMIRNATY® infringes U.S. Patent Nos. 11,638,693; 11,638,694; 11,666,534; 11,766,401; and 11,786,467; and seeking monetary relief. On August 14, 2024, GSK filed an amended complaint to assert infringement of three additional patents, U.S. Patent Nos. 11,759,422; 11,655,475; and 11,851,660. This proceeding is currently pending.

We believe we have strong defenses against the allegations claimed relative to each of the patents and intend to vigorously defend ourselves in the lawsuit mentioned above. However, our analysis of GSK's claims is ongoing and complex, and we believe the outcome of the suit remains substantially uncertain. Taking into account discussions with our external lawyers, we do not consider the probability of an outflow of resources to be sufficient to recognize a provision at the balance sheet date. In our opinion, these matters constitute contingent liabilities as of the balance sheet date. However, it is currently impractical for us to estimate with sufficient reliability the respective contingent liabilities.

Ladewig Proceedings

In January 2024, we and certain of our officers and directors were named as defendants in a securities class action complaint captioned Ladewig v. BioNTech SE filed in the U.S. District Court for the Central District of California brought on behalf of a putative class of investors who purchased our securities from March 30, 2022 through October 13, 2023. Plaintiffs allege that we violated Sections 10(b) and 20(a) of the Exchange Act by stating that we were "well positioned" to remain a "market leader" in vaccines for the prevention of COVID-19 and by purportedly overstating demand for Comirnaty. Plaintiffs further allege that we failed to adapt our inventory to reflect the emergence of new COVID variants. On July 15, 2024, the case was transferred to the U.S. District Court for the Southern District of New York.

We believe we have strong defenses against the allegations claimed and intend to vigorously defend ourselves in the lawsuit mentioned above. We cannot reasonably estimate the maximum potential exposure or the range of possible loss for this matter. Taking into account discussions with our external lawyers, we do not consider the probability of an outflow of resources to be sufficient to recognize a provision at the balance sheet date. In our opinion, these matters constitute contingent liabilities as of the balance sheet date. However, it is currently impractical for us to estimate with sufficient reliability the respective contingent liabilities.

Other Financial Commitments

The other financial commitments were as follows:

(in millions €)	December 31, 2024	December 31, 2023
Commitments under purchase agreements for property, plant and equipment	186.7	154.4
Contractual obligation to acquire intangible assets	1,193.1	1,721.1
Total	**1,379.8**	**1,875.5**

Contractual obligations to acquire intangible assets exist in connection with in-licensing and research and development collaborations. We have entered into obligations to make milestone payments once specific targets have been reached. Provided that all of the milestone events are achieved, we would be obligated to pay up to €1,193.1 million as of December 31, 2024, (€1,721.1 million as of December 31, 2023) in connection with the acquisition of intangible assets. The amounts shown represent the maximum payments to be made, and it is unlikely that they will all fall due. We have excluded any milestone payments subject to in-licensing agreements with Biotheus as such payments are treated as intra-group transactions following the acquisition of Biotheus, which closed in January 2025. Commitments from the acquisition of Biotheus are disclosed under Note 5 Business Combinations. The amounts and the dates of the actual payments may both vary considerably from those stated in the table, since the achievement of the conditions for payment is possible but uncertain. Other financial obligations from possible future sales-based milestone and license payments were not included in the table above.

The expected maturities of payment obligations under purchase agreements for property, plant and equipment and contractual obligations to acquire intangible assets are as follows:

Year ended December 31, 2024 *(in millions €)*	Less than 1 year	1 to 5 years	More than 5 years	Total
Commitments under purchase agreements for property, plant and equipment	109.0	77.7	—	186.7
Contractual obligation to acquire intangible assets	118.9	677.6	396.6	1,193.1
Total	**227.9**	**755.3**	**396.6**	**1,379.8**

Other financial obligations were recognized at nominal value.

19 Other Non-Financial Liabilities

(in millions €)	December 31, 2024	December 31, 2023
Liabilities to employees	99.8	73.3
Liabilities from share-based payment arrangements	26.6	29.0
Liabilities from wage taxes and social securities expenses	22.7	15.1
Grants	85.2	0.8
Other	22.6	20.0
Total	**256.9**	**138.2**
Total current	169.4	125.1
Total non-current	87.5	13.1

Other Non-Financial Liabilities related to funds received based on government grants and similar grants with a total nominal amount of €326.8 million. The received funds for which no related expense has been recognized during the year ended December 31, 2024, were deferred and recognized in the Other Non-Financial Liabilities. The government grants and similar grants are mainly related to assets such as buildings and equipment. The funding will be recognized in profit or loss within other operating income over the respective useful life of the underlying assets, see Note 2.3.9. The grants are related to conditions such as construction milestones.

20 Leases

20.1 Amounts Recognized in the Consolidated Statements of Financial Position

Right-of-Use Assets

The following amounts are presented as right-of-use assets within the consolidated statements of financial position as of the dates indicated:

(in millions €)	December 31, 2024	December 31, 2023
Buildings	238.2	209.8
Production facilities	—	—
Other operating equipment	9.9	4.6
Total	**248.1**	**214.4**

Additions to the right-of-use assets during the year ended December 31, 2024, were€74.4 million (during the year ended December 31, 2023: €66.4 million).

Lease Liability

The following amounts are included in lease liabilities, loans and borrowings as of the dates indicated:

(in millions €)	December 31, 2024	December 31, 2023
Current	39.5	28.1
Non-current	214.7	188.6
Total	**254.2**	**216.7**

20.2 Amounts Recognized in the Consolidated Statements of Profit or Loss

Depreciation Charge of Right-of-Use Assets

	Years ended December 31,		
(in millions €)	**2024**	**2023**	**2022**
Buildings	42.2	40.7	35.2
Production facilities	—	3.0	23.1
Other operating equipment	3.4	1.5	0.5
Total depreciation charge	**45.6**	**45.2**	**58.8**
Interest on lease liabilities	8.6	5.7	5.1
Expense related to short-term leases and leases of low-value assets	43.3	58.9	27.1
Total amounts recognized in profit or loss	**97.5**	**109.8**	**91.0**

20.3 Amounts Recognized in the Consolidated Statements of Cash Flows

During the year ended December 31, 2024, the total cash outflow for leases amounted to €43.6 million (during the year ended December 31, 2023: €46.0 million; during the year ended December 31, 2022: €46.2 million).

20.4 Extension Options

We have several lease contracts that include extension options. These options are negotiated by management to provide flexibility in managing the leased asset portfolio and align with the need of the business. Management exercises judgment in determining whether these extension options are reasonably certain to be exercised. The undiscounted potential future lease payments, which relate to periods after the exercise date of renewal options and are not included in lease liabilities, amount to up to €152.1 million as of December 31, 2024, considering terms up until 2049 (as of December 31, 2023: €157.2 million considering terms up until 2049).

21 Related Party Disclosures

21.1 Parent and Ultimate Controlling Party

ATHOS KG, Holzkirchen, Germany is the sole shareholder of AT Impf GmbH, Munich, Germany and beneficial owner of our ordinary shares. ATHOS KG via AT Impf GmbH has de facto control over BioNTech based on its substantial shareholding, which practically enables it to exercise the majority of voting rights to pass resolutions at our Annual General Meeting, or AGM.

21.2 Transactions with Key Management Personnel

Our key management personnel have been defined as the members of the Management Board and the Supervisory Board. Key management personnel compensation is comprised of the following:

	Years ended December 31,		
(in millions €)	**2024**	**2023**	**2022**
Management Board[1]	**13.0**	**8.3**	**15.0**
Fixed compensation	4.0	3.9	2.9
Fringe benefits	0.2	—	—
Short-term incentive – first installment	0.8	0.7	0.6
Short-term incentive – second installment[2]	0.6	1.0	0.7
Other variable compensation[3]	1.3	0.8	0.1
Share-based payments (incl. long-term incentive)[4]	6.1	1.9	10.7
Supervisory Board	**0.9**	**0.6**	**0.5**
Total compensation of key management personnel	**13.9**	**8.9**	**15.5**

(1) During the year ended December 31, 2024, Sean Marett retired from the Management Board with effect as of July 1, 2024. Therefore, his compensation until his departure date is presented on a pro-rata basis in this table. The following compensation pursuant to his separation agreement subsequent to his departure date and thus as former Management Board member are not included in this table: a severance payment of €275,000, an additional payment of €39,000 in respect of the 2024 STI, a grant of 5,760 phantom options in respect of the 2024 LTI and a payment of €477,030 in relation to his 12-months consultancy agreement.

(2) The fair value of the second installment of the short-term incentive compensation which has been classified as a cash-settled share-based payment arrangement was determined pursuant to the regulations of IFRS 2 “Share-based Payments”. This table shows the pro-rata share of personnel expenses for the respective financial year, which are recognized over the award’s vesting period beginning as of the service commencement date (date when entering or renewing service agreements) until each separate determination date and are remeasured until settlement date.

(3) Represents for the financial year 2024 the cash payment related to the one-time signing bonus granted to Annemarie Hanekamp as part of her appointment to the Management Board, designed to compensate her for lower bonus payments that she would receive as part of her compensation package with BioNTech and to recognize and appreciate her move to BioNTech. For 2023, the amount represents the one-time signing cash payment related to James Ryan’s appointment to the Management Board to provided compensation in lieu of participation in the LTI 2023 program and the one-time special cash payment related to Jens Holstein to honor his contribution to BioNTech’s extraordinary financial performance. For 2022, the amount includes a one-time signing and retention cash payment agreed when renewing the service agreement agreed with Sean Marett in 2022.

(4) The fair value of the share-based payments was determined pursuant to the regulations of IFRS 2 “Stock-based Payments”. This table shows the pro-rata share of personnel expenses resulting from stock-based compensation for the respective financial year. During the years ended December 31, 2024, 2023 and 2022, the amounts included expenses derived from a one-time signing bonus granted to Jens Holstein as of his appointment to the Management Board in the form of 4,246 phantom shares as well as expenses derived from the one-time signing bonus granted to Annemarie Hanekamp as of her appointment to the Management Board in the form of shares in the amount of €500,000.

The amounts disclosed in the table are the amounts recognized as an expense during the period.

Management Board members participated in our ESOP program (see Note 16). Out of the 5,152,410 option rights granted to our Management Board under the ESOP 2018 program, 4,921,630 options were exercised during the year ended December 31, 2022. The remaining 230,780 option rights were exercised by Sean Marett in May 2023. During the year ended December 31, 2024, our CEO Prof. Ugur Sahin, M.D., exercised all 4,374,963 options granted under the CEO Grant 2019 and Members of the Management Board, who participated in the LTI 2020 Board Program, exercised 209,128 options in August 2024 while 38,968 options are outstanding as of December 31, 2024 (see Note 16). For further information regarding outstanding options for each Management Board member from LTI 2021-2024 Board Programs, see Note 16.

21.3 Related Party Transactions

The total amount of transactions with ATHOS KG or entities controlled by it was as follows for the periods indicated:

	Years ended December 31,		
(in millions €)	**2024**	**2023**	**2022**
Purchases of various goods and services from entities controlled by ATHOS KG	0.2	0.3	0.3
Purchases of property and other assets from entities controlled by ATHOS KG	—	—	62.5
Total	**0.2**	**0.3**	**62.8**

The amounts disclosed in the table are the amounts recognized as an expense during the period.

On December 22, 2022, we entered into a purchase agreement with Santo Service GmbH, pursuant to which we acquired the real estate property An der Goldgrube 12 and the existing laboratory and office building including any movable assets for a total consideration of €62.5 million. The purchase price was paid during the year ended December 31, 2022. Santo Service GmbH is wholly owned by AT Impf GmbH, that is controlled by ATHOS KG.

The outstanding balances of transactions with ATHOS KG or entities controlled by them were as follows as of the periods indicated:

(in millions €)	**December 31, 2024**	**December 31, 2023**
ATHOS KG	—	0.4
Total	**—**	**0.4**

None of the balances are secured and no bad debt expense has been recognized in respect of amounts owed by related parties.

A number of individuals in key positions can control or exercise significant influence over BioNTech SE. There were no business relationships with individuals in key positions during the year ended December 31, 2024.

22 Numbers of Employees

The average number of employees is:

Quarterly average number of employees by function	Years ended December 31, 2024	2023	2022
Clinical Research & Development	680	434	243
Scientific Research & Development	2,079	1,871	1,302
Operations	1,491	1,469	1,240
Quality	463	470	383
Support Functions	1,802	1,217	828
Commercial & Business Development	200	179	108
Total	**6,715**	**5,640**	**4,104**

The number of employees as of the reporting date is:

Number of employees by function as of the reporting date	Years ended December 31, 2024	2023	2022
Clinical Research & Development	752	592	274
Scientific Research & Development	2,093	2,080	1,512
Operations	1,268	1,562	1,365
Quality	468	474	413
Support Functions	2,156	1,390	983
Commercial & Business Development	209	194	145
Total	**6,946**	**6,292**	**4,692**

23 Fees for Auditors

The following fees were recognized for the services provided by EY GmbH & Co. KG Wirtschaftsprüfungsgesellschaft for the years ended December 31, 2024 and 2023:

(in millions €)	Years ended December 31, 2024	2023
Audit fees	2.8	3.2
Audit-related fees	—	0.3
Tax fees	0.6	0.1
Total fees for professional audit services and other services	**3.4**	**3.6**

24 Corporate Governance

The declaration of conformity pursuant to Sec. 161 para. 1 of the German Stock Corporation Act (Aktiengesetz) is issued in accordance with the Corporate Governance Code in connection with the corporate governance declaration pursuant to Sec. 315d in conjunction with Sec. 289f HGB and can be found in the combined management report of BioNTech SE.

25 Events After the Reporting Period

Business Combinations

Acquisition of Biotheus

Our subsidiary, BioNTech Collaborations GmbH, entered into an agreement and plan of merger, or the merger agreement, with Biotheus on November 13, 2024. Following the satisfaction of several customary closing conditions and regulatory approvals as provided in the merger agreement, the acquisition of Biotheus closed on January 31, 2025. For further information, please refer to the description of this acquisition in Note 5.

Contingent Liabilities and Other Financial Commitments

Promosome

In January 2025, Promosome LLC filed a lawsuit against us and Pfizer in the Unified Patent Court, or the UPC, Munich Division, alleging that Comirnaty infringes EP 2 401 365 and seeking monetary relief. This proceeding is currently pending.

CureVac Proceedings – United Kingdom

On January 27, 2025, the UK Appeals Court denied CureVac's application to appeal; accordingly, the UK designations of EP'668 and EP'755 are finally revoked with no further opportunity to appeal in the UK.

Moderna Proceedings – Germany

On January 21, 2025, the Düsseldorf Regional Court held a hearing on infringement with respect to EP'949. On March 5, 2025, the Court issued a first-instance decision declining to stay the infringement proceedings and finding infringement of EP'949 by BioNTech and Pfizer. BioNTech and Pfizer intend to appeal the Düsseldorf Regional Court's infringement decision. The court has not ruled on the invalidity of EP'949 which will be decided in a next step by the EPO in the opposition appeal proceedings. The Opposition Division of the EPO found EP'949 to be valid in 2024; BioNTech appealed this decision, and the appeal is currently pending. Should Moderna nevertheless decide to enforce the Düsseldorf Regional Court's first instance-decision on a preliminary basis, BioNTech and Pfizer will need to provide information and render accounts on relevant acts in Germany. A determination of compensation and damages will then follow in separate proceedings. The EPO's decision as to the invalidity of EP'949 is expected before any determination of compensation and damages will take place.

Moderna Proceedings – US

With respect to Pfizer and our inter partes proceedings against Moderna, on March 5, 2025, the United States Patent Trial and Appeal Board found all challenged claims of Moderna's US Patent Nos. 10,933,127 and 10,702,600 to be unpatentable and thus invalid. Moderna may appeal this decision.

Our assessment stated in Note 18 remains unchanged: None of these claims fulfill the criteria for recording a provision but represent contingent liabilities. These contingent liabilities are subject to significant uncertainties and, therefore, determining the likelihood of a loss and/or the measurement of any loss can be complex. Consequently, we are unable to estimate the range of reasonably possible loss. Our assessments, which result from a complex series of judgments about future events and uncertainties, are based on estimates and assumptions that have been deemed reasonable by management, but that may prove to be incomplete or inaccurate, and unanticipated events and circumstances may occur that might cause us to change those estimates and assumptions. We currently do not believe that any of these matters will have a material adverse effect on our financial position, and will continue to monitor the status of these and other claims that may arise. However, we could incur judgments, enter into settlements or revise our expectations regarding the outcome of matters, which could have a material adverse effect on our results of operations and/or our cash flows in the period in which the amounts are accrued or paid. We will continue to evaluate whether, if circumstances were to change in the future, the recording of a provision may be needed and whether potential indemnification entitlements exist against any such claim.

Jens Holstein – retirement

Jens Holstein, our Chief Financial Officer, plans to retire at the end of his term. A successor will be announced in due course.

Mainz, March 7, 2025

BioNTech SE

Prof. Dr. med. Ugur Sahin
Chief Executive Officer

Jens Holstein
Chief Financial Officer

Annemarie Hanekamp
Chief Commercial Officer

Dr. Sierk Poetting
Chief Operating Officer

Ryan Richardson
Chief Strategy Officer

Dr. James Ryan
Chief Legal Officer und
Chief Business Officer

Prof. Dr. med. Özlem Türeci
Chief Medical Officer

The following English language translation of the German language independent auditor's report (Bestätigungsvermerk des unabhängigen Abschlussprüfers) refers to the consolidated financial statements, prepared in accordance with IFRS Accounting Standards as issued by the International Accounting Standards Board (IASB) (IFRS Accounting Standards) and adopted by the European Union and the additional requirements of German commercial law pursuant to Sec. 315e (3) in conjunction with (1) HGB ("Handelsgesetzbuch": German Commercial Code), as well as the group management report, which is combined with the management report of the Company (combined management report), prepared on the basis of German commercial law (HGB), of BioNTech SE, Mainz, as of and for the year ended December 31, 2024 as a whole and not solely to the consolidated financial statements presented in this Prospectus on the preceding pages. The group management report is not part of this Prospectus.

Independent Auditor's Report

To BioNTech SE

Opinions

We have audited the consolidated financial statements of BioNTech SE, Mainz, and its subsidiaries (the Group), which comprise the consolidated statement of financial position as at December 31, 2024, and the consolidated statement of profit or loss, consolidated statement of comprehensive income, consolidated statement of cash flows and consolidated statement of changes in stockholders' equity for the financial year from January 1 to December 31, 2024, and notes to the consolidated financial statements, including material accounting policy information. In addition, we have audited the group management report of BioNTech SE, which is combined with the management report of the Company, for the financial year from January 1 to December 31, 2024. In accordance with the German legal requirements, we have not audited the content of the corporate governance declaration pursuant to Sec. 315d HGB ["Handelsgesetzbuch": German Commercial Code] included in section 5 of the group management report. In addition, we have not audited the content of the disclosures contained in sections 4.2.3 and 4.2.4 based on recommendation A.5 of the German Corporate Governance Code (GCGC 2022) or the non-financial report contained in section 7 of the group management report, which relate to disclosures extraneous to management reports. Disclosures extraneous to group management reports are such disclosures that are not required pursuant to Secs. 315, 315a HGB or Secs. 315b to 315d HGB or German Accounting Standard (GAS) 20.

In our opinion, on the basis of the knowledge obtained in the audit,

- the accompanying consolidated financial statements comply, in all material respects, with the IFRS Accounting Standards as issued by the International Accounting Standards Board (IASB) (IFRS Accounting Standards) and adopted by the EU, and the additional requirements of German commercial law pursuant to Sec. 315e (3) in conjunction with (1) HGB and, in compliance with these requirements, give a true and fair view of the assets, liabilities and financial position of the Group as at December 31, 2024 and of its financial performance for the financial year from January 1 to December 31, 2024, and

- the accompanying group management report as a whole provides an appropriate view of the Group's position. In all material respects, this group management report is consistent with the consolidated financial statements, complies with German legal requirements and appropriately presents the opportunities and risks of future development. We do not express an opinion on the corporate governance declaration referred to above or on sections 4.2.3, 4.2.4 and 7 of the group management report referred to above.

Pursuant to Sec. 322 (3) Sentence 1 HGB we declare that our audit has not led to any reservations relating to the legal compliance of the consolidated financial statements and of the group management report.

Basis for the opinions

We conducted our audit of the consolidated financial statements and of the group management report in accordance with Sec. 317 HGB and in compliance with German Generally Accepted Standards for Financial Statement Audits promulgated by the Institut der Wirtschaftsprüfer [Institute of Public Auditors in Germany] (IDW). Our responsibilities under those requirements and principles are further described in the "Auditor's responsibilities for the audit of the consolidated financial statements and of the group management report" section of our auditor's report. We are independent of the group entities in accordance with the requirements of German commercial and professional law, and we have fulfilled our other German professional responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinions on the consolidated financial statements and on the group management report.

Other information

The Supervisory Board is responsible for the Report of the Supervisory Board. The executive directors and the Supervisory Board are responsible for the declaration pursuant to Sec. 161 AktG ["Aktiengesetz": German Stock Corporation Act] on the German Corporate Governance Code, which is part of the corporate governance declaration pursuant to Sec. 315d HGB, and for the compensation report pursuant to Sec. 162 AktG. In all other respects, the executive directors are responsible for the other information. The other information comprises the aforementioned corporate governance declaration and the aforementioned disclosures extraneous to management reports contained in sections 4.2.3, 4.2.4 and 7 of the group management report. The other information also comprises additional parts to be included in the annual report, of which we obtained a copy prior to issuing the auditor's report, in particular:

- The Sustainability Report
- The Report of the Supervisory Board pursuant to Sec. 171 (2) AktG
- The Compensation Report

but not the consolidated financial statements, not the group management report disclosures whose content is audited and not our auditor's report thereon.

In addition, the other information comprises additional parts intended for the annual report, which we expect to be provided with after the auditor's report has been issued, in particular:

- The Letter from the Management Board to the shareholders
- The multi-year overview of business development

Our opinions on the consolidated financial statements and on the group management report do not cover the other information, and consequently we do not express an opinion or any other form of assurance conclusion thereon.

In connection with our audit, our responsibility is to read the other information and, in so doing, to consider whether the other information

- is materially inconsistent with the consolidated financial statements, with the group management report or our knowledge obtained in the audit, or
- otherwise appears to be materially misstated.

If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report in this regard.

Responsibilities of the executive directors and the Supervisory Board for the consolidated financial statements and the group management report

The executive directors are responsible for the preparation of the consolidated financial statements that comply, in all material respects, with the IFRS Accounting Standards as adopted by the EU and the additional requirements of German commercial law pursuant to Sec. 315e (3) in conjunction with (1) HGB, and that the consolidated financial statements, in compliance with these requirements, give a true and fair view of the assets, liabilities, financial position and financial performance of the Group. In addition, the executive directors are responsible for such internal control as they have determined necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud (i.e., fraudulent financial reporting and misappropriation of assets) or error.

In preparing the consolidated financial statements, the executive directors are responsible for assessing the Group's ability to continue as a going concern. They also have the responsibility for disclosing, as applicable, matters related to going concern. In addition, they are responsible for financial reporting based on the going concern basis of accounting unless there is an intention to liquidate the Group or to cease operations, or there is no realistic alternative but to do so.

Furthermore, the executive directors are responsible for the preparation of the group management report that, as a whole, provides an appropriate view of the Group's position and is, in all material respects, consistent with the consolidated financial statements, complies with German legal requirements, and appropriately presents the opportunities and risks of future development. In addition, the executive directors are responsible for such arrangements and measures (systems) as they have considered necessary to enable the preparation of a group management report that is in accordance with the applicable German legal requirements, and to be able to provide sufficient appropriate evidence for the assertions in the group management report.

The Supervisory Board is responsible for overseeing the Group's financial reporting process for the preparation of the consolidated financial statements and of the group management report.

Auditor's responsibilities for the audit of the consolidated financial statements and of the group management report

Our objectives are to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and whether the group management report as a whole provides an appropriate view of the Group's position and, in all material respects, is consistent with the consolidated financial statements and the knowledge obtained in the audit, complies with the German legal requirements and appropriately presents the opportunities and risks of future development, as well as to issue an auditor's report that includes our opinions on the consolidated financial statements and on the group management report.

Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with Sec. 317 HGB and in compliance with German Generally Accepted Standards for Financial Statement Audits promulgated by the Institut der Wirtschaftsprüfer (IDW) will always detect a material misstatement. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated financial statements and this group management report.

We exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the consolidated financial statements and of the group management report, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinions. The risk of not detecting a material misstatement resulting from fraud is higher than the risk of not detecting a material misstatement resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit of the consolidated financial statements and of arrangements and measures relevant to the audit of the group management report in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Group's internal control and of such arrangements and measures.

- Evaluate the appropriateness of accounting policies used by the executive directors and the reasonableness of estimates made by the executive directors and related disclosures.
- Conclude on the appropriateness of the executive directors' use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in the auditor's report to the related disclosures in the consolidated financial statements and in the group management report or, if such disclosures are inadequate, to modify our respective opinions. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Group to cease to be able to continue as a going concern.
- Evaluate the overall presentation, structure and content of the consolidated financial statements, including the disclosures, and whether the consolidated financial statements present the underlying transactions and events in a manner that the consolidated financial statements give a true and fair view of the assets, liabilities, financial position and financial performance of the Group in compliance with the IFRS Accounting Standards as adopted by the EU and the additional requirements of German commercial law pursuant to Sec. 315e (3) in conjunction with (1) HGB.
- Plan and perform the audit of the consolidated financial statements to obtain sufficient appropriate audit evidence regarding the financial information of the entities or business units within the Group as a basis for forming opinions on the consolidated financial statements and on the group management report. We are responsible for the direction, supervision and review of the work performed for the group audit. We remain solely responsible for our audit opinions.
- Evaluate the consistency of the group management report with the consolidated financial statements, its conformity with [German] law, and the view of the Group's position it provides.
- Perform audit procedures on the prospective information presented by the executive directors in the group management report. On the basis of sufficient appropriate audit evidence we evaluate, in particular, the significant assumptions used by the executive directors as a basis for the prospective information, and evaluate the proper derivation of the prospective information from these assumptions. We do not express a separate opinion on the prospective information and on the assumptions used as a basis. There is a substantial unavoidable risk that future events will differ materially from the prospective information.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

Cologne, March 10, 2025

EY GmbH & Co. KG
Wirtschaftsprüfungsgesellschaft

Schlebusch	Weigel
Wirtschaftsprüfer	Wirtschaftsprüfer
[German Public Auditor]	[German Public Auditor]

Audited Consolidated Financial Statements of BioNTech SE prepared in accordance with International Financial Reporting Standards as adopted by the EU and the additional requirements of German commercial law pursuant to Section 315e para. 3 in connection with para. 1 HGB as of and for the Year Ended December 31, 2023

Consolidated Statements of Profit or Loss

(in millions €, except per share data)	Note	Years ended December 31, 2023	2022	2021
Revenues				
Commercial revenues	6	3,815.5	17,194.6	18,874.0
Research & development revenues	6	3.5	116.0	102.7
Total revenues		**3,819.0**	**17,310.6**	**18,976.7**
Cost of sales	7.1	(599.8)	(2,995.0)	(2,911.5)
Research and development expenses	7.1	(1,783.1)	(1,537.0)	(949.2)
Sales and marketing expenses	7.1	(62.7)	(59.5)	(50.4)
General and administrative expenses [1]	7.1	(495.0)	(481.7)	(276.8)
Other operating expenses [1]	7.2	(293.0)	(410.0)	(103.4)
Other operating income	7.3	105.0	815.3	598.4
Operating income		**690.4**	**12,642.7**	**15,283.8**
Finance income	7.4	519.6	330.3	67.7
Finance expenses	7.5	(23.9)	(18.9)	(305.1)
Profit before tax		**1,186.1**	**12,954.1**	**15,046.4**
Income taxes	8	(255.8)	(3,519.7)	(4,753.9)
Profit for the period		**930.3**	**9,434.4**	**10,292.5**
Earnings per share				
Basic earnings for the period per share	9	3.87	38.78	42.18
Diluted earnings for the period per share	9	3.83	37.77	39.63

[1] Adjustments to prior-year figures due to change in functional allocation of general and administrative expenses and other operating expenses (see Note 7.2).

The accompanying notes form an integral part of these consolidated financial statements.

Consolidated Statements of Comprehensive Income

(in millions €)	Note	Years ended December 31, 2023	2022	2021
Profit for the period		**930.3**	**9,434.4**	**10,292.5**
Other comprehensive income				
Other comprehensive income that may be reclassified to profit or loss in subsequent periods, net of tax				
Exchange differences on translation of foreign operations		(19.8)	11.2	8.4
Net other comprehensive income / (loss) that may be reclassified to profit or loss in subsequent periods		**(19.8)**	**11.2**	**8.4**
Other comprehensive loss that will not be reclassified to profit or loss in subsequent periods, net of tax				
Net gain on equity instruments designated at fair value through other comprehensive income		3.7	10.5	—
Remeasurement gain on defined benefit plans		0.3	0.6	0.3
Net other comprehensive income that will not be reclassified to profit or loss in subsequent periods		**4.0**	**11.1**	**0.3**
Other comprehensive income / (loss) for the period, net of tax		**(15.8)**	**22.3**	**8.7**
Comprehensive income for the period, net of tax		**914.5**	**9,456.7**	**10,301.2**

The accompanying notes form an integral part of these consolidated financial statements.

Consolidated Statements of Financial Position

(in millions €)	Note	December 31, 2023	December 31, 2022
Assets			
Non-current assets			
Goodwill	10	362.5	61.2
Other intangible assets	10	804.1	158.5
Property, plant and equipment	11	757.2	609.2
Right-of-use assets	20	214.4	211.9
Other financial assets	12	1,176.1	80.2
Other non-financial assets	14	83.4	6.5
Deferred tax assets	8	81.3	229.6
Total non-current assets		**3,479.0**	**1,357.1**
Current assets			
Inventories	13	357.7	439.6
Trade and other receivables	12	2,155.7	7,145.6
Contract assets	6	4.9	—
Other financial assets	12	4,885.3	189.4
Other non-financial assets	14	280.9	271.9
Income tax assets	8	179.1	0.4
Cash and cash equivalents	12	11,663.7	13,875.1
Total current assets		**19,527.3**	**21,922.0**
Total assets		**23,006.3**	**23,279.1**
Equity and liabilities			
Equity			
Share capital	15	248.6	248.6
Capital reserve	15	1,229.4	1,828.2
Treasury shares	15	(10.8)	(5.3)
Retained earnings		19,763.3	18,833.0
Other reserves	16	(984.6)	(848.9)
Total equity		**20,245.9**	**20,055.6**
Non-current liabilities			
Lease liabilities, loans and borrowings	12	191.0	176.2
Other financial liabilities	12	38.8	6.1
Income tax liabilities	8	—	10.4
Provisions	17	8.8	8.6
Contract liabilities	6	398.5	48.4
Other non-financial liabilities	19	13.1	17.0
Deferred tax liabilities	8	39.7	6.2
Total non-current liabilities		**689.9**	**272.9**
Current liabilities			
Lease liabilities, loans and borrowings	12	28.1	36.0
Trade payables and other payables	12	354.0	204.1
Other financial liabilities	12	415.2	785.1
Refund liabilities	6	—	24.4
Income tax liabilities	8	525.5	595.9
Provisions	17	269.3	367.2
Contract liabilities	6	353.3	77.1
Other non-financial liabilities	19	125.1	860.8
Total current liabilities		**2,070.5**	**2,950.6**
Total liabilities		**2,760.4**	**3,223.5**
Total equity and liabilities		**23,006.3**	**23,279.1**

The accompanying notes form an integral part of these consolidated financial statements.

Consolidated Statements of Changes in Stockholders' Equity

		Equity attributable to equity holders of the parent					
(in millions €)	Note	Share capital	Capital reserve	Treasury shares	Retained earnings	Other reserves	Total equity
As of January 1, 2021		**246.3**	**1,514.5**	**(4.8)**	**(409.6)**	**25.4**	**1,371.8**
Profit for the period		—	—	—	10,292.5	—	10,292.5
Other comprehensive income		—	—	—	—	8.7	8.7
Total comprehensive income		**—**	**—**	**—**	**10,292.5**	**8.7**	**10,301.2**
Issuance of treasury shares	15	—	162.6	1.0	—	—	163.6
Transaction costs		—	(2.7)	—	—	—	(2.7)
Share-based payments	16	—	—	—	—	59.8	59.8
As of December 31, 2021		**246.3**	**1,674.4**	**(3.8)**	**9,882.9**	**93.9**	**11,893.7**
Profit for the period		—	—	—	9,434.4	—	9,434.4
Other comprehensive income		—	—	—	—	22.3	22.3
Total comprehensive income		**—**	**—**	**—**	**9,434.4**	**22.3**	**9,456.7**
Issuance of share capital	15	0.5	67.1	—	—	—	67.6
Redemption of convertible note	12	1.8	233.2	—	—	—	235.0
Share repurchase program	15	—	(979.5)	(6.9)	—	—	(986.4)
Transaction costs		—	(0.1)	—	—	—	(0.1)
Dividends	15	—	—	—	(484.3)	—	(484.3)
Share-based payments	16	—	833.1	5.4	—	(1,519.8)	(681.3)
Deferred taxes	8	—	—	—	—	554.7	554.7
As of December 31, 2022		**248.6**	**1,828.2**	**(5.3)**	**18,833.0**	**(848.9)**	**20,055.6**
Profit for the period		—	—	—	930.3	—	930.3
Other comprehensive loss		—	—	—	—	(15.8)	(15.8)
Total comprehensive profit / (loss)		**—**	**—**	**—**	**930.3**	**(15.8)**	**914.5**
Share repurchase program	15	—	(731.6)	(6.9)	—	—	(738.5)
Share-based payments	16	—	30.2	0.3	—	(15.1)	15.4
Current and deferred taxes	8	—	—	—	—	(104.8)	(104.8)
Treasury shares used for acquisition of business combination	5	—	102.6	1.1	—	—	103.7
As of December 31, 2023		**248.6**	**1,229.4**	**(10.8)**	**19,763.3**	**(984.6)**	**20,245.9**

Consolidated Statements of Cash Flows

(in millions €)	Years ended December 31, 2023	2022	2021
Operating activities			
Profit for the period	930.3	9,434.4	10,292.5
Income taxes	255.8	3,519.7	4,753.9
Profit before tax	**1,186.1**	**12,954.1**	**15,046.4**
Adjustments to reconcile profit before tax to net cash flows:			
Depreciation and amortization of property, plant, equipment, intangible assets and right-of-use assets	183.4	123.3	75.2
Share-based payment expenses	51.4	108.6	93.9
Net foreign exchange differences	(298.0)	625.5	(387.5)
Loss on disposal of property, plant and equipment	3.8	0.6	4.6
Finance income excluding foreign exchange differences	(519.6)	(265.3)	(1.5)
Finance expense excluding foreign exchange differences	7.9	18.9	305.2
Movements in government grants	2.4	0.3	(89.0)
Other non-cash income / (loss)	—	—	(2.2)
Net (gain) / loss on derivative instruments at fair value through profit or loss	175.5	(241.0)	57.3
Working capital adjustments:			
Decrease / (increase) in trade and other receivables, contract assets and other assets	5,374.0	4,369.9	(11,808.1)
Decrease / (increase) in inventories	81.9	62.9	(438.4)
Increase in trade payables, other financial liabilities, other liabilities, contract liabilities, refund liabilities and provisions	118.9	85.7	1,516.1
Interest received and realized gains from cash and cash equivalents	258.2	29.3	1.2
Interest paid and realized losses from cash and cash equivalents	(5.4)	(21.5)	(12.2)
Income tax paid	(482.9)	(4,222.1)	(3,457.9)
Share-based payments	(766.2)	(51.8)	(13.4)
Net cash flows from operating activities	**5,371.4**	**13,577.4**	**889.7**
Investing activities			
Purchase of property, plant and equipment	(249.4)	(329.2)	(127.5)
Proceeds from sale of property, plant and equipment	(0.7)	0.6	3.4
Purchase of intangible assets and right-of-use assets	(455.4)	(34.1)	(26.5)
Acquisition of subsidiaries and businesses, net of cash acquired	(336.9)	—	(20.8)
Investment in other financial assets	(7,128.4)	(47.8)	(19.5)
Proceeds from maturity of other financial assets	1,216.3	375.2	(375.2)
Net cash flows used in investing activities	**(6,954.5)**	**(35.3)**	**(566.1)**
Financing activities			
Proceeds from issuance of share capital and treasury shares, net of costs	—	110.5	160.9
Proceeds from loans and borrowings	0.3	0.8	—
Repayment of loans and borrowings	(0.1)	(18.8)	(52.6)
Payments related to lease liabilities	(40.3)	(41.1)	(14.1)
Share repurchase program	(738.5)	(986.4)	—
Dividends	—	(484.3)	—
Net cash flows from / (used in) financing activities	**(778.6)**	**(1,419.3)**	**94.2**
Net increase / (decrease) in cash and cash equivalents	(2,361.7)	12,122.8	417.8
Change in cash and cash equivalents resulting from exchange rate differences	(14.5)	60.1	64.7
Change in cash and cash equivalents resulting from other valuation effects	164.8	(0.5)	—
Cash and cash equivalents at the beginning of the period	13,875.1	1,692.7	1,210.2
Cash and cash equivalents as of December 31	**11,663.7**	**13,875.1**	**1,692.7**

The accompanying notes form an integral part of these consolidated financial statements.

Notes to the Consolidated Financial Statements

1 Corporate Information

BioNTech SE is a limited company incorporated and domiciled in Germany. American Depositary Shares (ADS) representing BioNTech SE's ordinary shares have been publicly traded on the Nasdaq Global Select Market since October 10, 2019. The registered office is located in Mainz, Germany (An der Goldgrube 12, 55131 Mainz). BioNTech SE is registered in the commercial register B of the Mainz Local Court under the number HRB 48720. These consolidated financial statements have been prepared in accordance with International Financial Reporting Standards (IFRS) as endorsed by the European Union (EU), and give a true and fair view of the financial position and results of operations of the Group in accordance with International Financial Reporting Standards (IFRS) and the results of operation of BioNTech SE and its subsidiaries, hereinafter also referred to as "BioNTech," the "Group," "we" or "us".

Our consolidated financial statements for the year ended December 31, 2023, were prepared by the Management Board on March 18, 2024.

2 Significant Accounting Policies

2.1 Basis of Preparation

General

The consolidated financial statements have been prepared in accordance with the International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board (IASB).

We prepare and publish our consolidated financial statements in Euros and round numbers to thousands or millions of Euros, respectively. Accordingly, numerical figures shown as totals in some tables may not be exact arithmetic aggregations of the figures that preceded them and figures presented in the explanatory notes may not add up to the rounded arithmetic aggregations. Rounding applied may differ from rounding published in different units in the previous years.

Segment Information

Decisions with respect to business operations and resource allocations are made by our Management Board, as the chief operating decision maker (CODM) based on BioNTech as a whole. Accordingly, we operate and make decisions as a single operating segment, which is also our reporting segment.

2.2 Basis of Consolidation

The consolidated financial statements comprise the financial statements of BioNTech SE and its controlled investees (subsidiaries).

The Group controls an investee if, and only if, the Group has

- power over the investee (*i.e.*, existing rights that give it the current ability to direct the relevant activities of the investee);
- exposure, or rights, to variable returns from its involvement with the investee; and
- the ability to use its power over the investee to affect its returns.

Generally, there is a presumption that a majority of voting rights results in control.

Whether an investee is controlled is re-assessed if facts and circumstances indicate that there are changes to one or more of the three elements of control. Consolidation of a subsidiary begins when control is obtained over the subsidiary and ceases when control over the subsidiary is lost.

The profit / (loss) and each component of other comprehensive income / (loss) for the period are attributed to the equity holders of the parent of the Group and to the non-controlling interests, even if this results in the non-controlling interests having a deficit balance. When necessary, adjustments are made to the consolidated financial statements of subsidiaries to bring their accounting policies in line with the Group's accounting policies. All intra-group assets and liabilities, equity, income, expenses and cash flows relating to transactions between members of the Group are eliminated on consolidation.

A change in the ownership interest of a subsidiary, without a loss of control, is accounted for as an equity transaction.

If control over a subsidiary is lost, the related assets (including goodwill), liabilities, non-controlling interests and other components of equity are derecognized, while any resultant gain or loss is recognized in the consolidated statements of profit or loss. Any investment retained is recognized at fair value.

2.3 Summary of Material Accounting Policies

2.3.1 Foreign Currencies

Our consolidated financial statements are presented in Euros, which is also our functional currency. For each entity, the Group determines the functional currency, and items included in the consolidated financial statements of such entities are measured using that functional currency. We use the direct method of consolidation and, on disposal of a foreign operation, the gain or loss that is reclassified to the consolidated statements of profit or loss reflects the amount that arises from using this method.

Transactions and Balances

Transactions in foreign currencies are initially recorded by the Group's entities at their respective functional currency spot rates at the date the transaction first qualifies for recognition.

Monetary assets and liabilities denominated in foreign currencies are translated at the functional currency spot rates of exchange at the reporting date.

Non-monetary items that are measured in terms of historical cost in a foreign currency are translated using the exchange rates at the dates of the initial transactions.

In determining the spot exchange rate to use on initial recognition of the related asset, expense or income (or part of it) on the derecognition of a non-monetary asset or non-monetary liability relating to advance consideration, the date of the transaction is the date on which the Group initially recognizes the non-monetary asset or non-monetary liability arising from the advance consideration. If there are multiple payments or receipts in advance, the Group determines the transaction date for each payment or receipt of advance consideration.

Foreign Currency Translation

Foreign currency translation effects from the translation of operating activities include foreign exchange differences arising on operating items such as trade receivables and trade payables and are either shown as other operating income or expenses on a cumulative basis. Foreign currency translation effects presented within finance income and expenses include foreign exchange differences arising on financing items such as loans and borrowings as well as foreign exchange differences arising on cash and cash equivalents and are either shown as finance income or expenses on a cumulative basis.

Foreign Currency Translation on Consolidation

Upon consolidation, the assets and liabilities of foreign operations are translated into Euros at the rate of exchange prevailing at the reporting date and the transactions recorded in their consolidated statements of profit or loss are translated at exchange rates prevailing at the dates of the transactions.

The exchange differences arising on translation for consolidation are recognized in other comprehensive income. On disposal of a foreign operation, the component of other comprehensive income relating to that particular foreign operation is reclassified to profit or loss.

Any goodwill arising on the acquisition of a foreign operation and any fair value adjustments to the carrying amounts of assets and liabilities arising upon the acquisition are treated as assets and liabilities of the foreign operation and translated at the spot rate of exchange at the reporting date.

2.3.2 Current versus Non-Current Classifications

Assets and liabilities in the consolidated statements of financial position are presented based on current or non-current classification.

An asset is current when it is either: (i) expected to be realized or intended to be sold or consumed in the normal operating cycle, (ii) held primarily for the purpose of trading, (iii) expected to be realized within twelve months after the reporting period, or (iv) cash or cash equivalents, unless it is restricted from being exchanged or used to settle a liability for at least twelve months after the reporting period. All other assets are classified as non-current.

A liability is current when it is either: (i) expected to be settled in the normal operating cycle, (ii) held primarily for the purpose of trading, (iii) due to be settled within twelve months after the reporting period, or (iv) there is no unconditional right to defer the settlement of the liability for at least twelve months after the reporting period. The terms of the liability that could, at the option of the counterparty, result in its settlement by the issue of equity instruments do not affect its classification. The Group classifies all other liabilities as non-current.

Deferred tax assets and liabilities are classified as non-current assets and liabilities, respectively.

2.3.3 Revenue from Contracts with Customers

Revenue

Identification of the Contract

We generate revenues from collaboration and license agreements, which contain multiple elements, including licenses to use, research, develop, manufacture and commercialize candidates and products, research and development services as well as obligations to develop and manufacture preclinical and clinical material and products. We determined that those collaboration and license agreements qualify as contracts with customers. A contract is an agreement between two or more parties that establishes enforceable rights and obligations.

Identification of Performance Obligations

Our customer contracts often include bundles of licenses, goods and services. If the granting of a license is bundled together with delivering of goods and or the rendering of services, it is assessed whether these agreements are comprised of more than one performance obligation. A performance obligation is only accounted for as the grant of a license if the grant of a license is the sole or the predominant promise of the performance obligation.

Determining Transaction Prices

We apply judgment when determining the consideration that is expected to be received. If the consideration in an agreement includes a variable amount, we estimate the amount of consideration to which we will be entitled in exchange for transferring the goods to the customer. At contract inception, the variable consideration is estimated based on the most likely amount of consideration expected from the transaction and constrained until it is highly probable that a significant revenues reversal in the amount of cumulative revenues recognized will not occur when the associated uncertainty with respect to the variable consideration is subsequently resolved. The estimated revenues are updated at each reporting date to reflect the current facts and circumstances.

Allocation of Transaction Prices

If a contract with a customer contains more than one performance obligation, the transaction price is allocated to each performance obligation based on relative standalone selling prices. We have established the following hierarchy to determine the standalone selling prices.

- Where standalone selling prices for offered licenses, goods or services are observable and reasonably consistent across customers, our standalone selling price estimates are derived from our respective pricing history. However, due to the limited number of customers and the limited company history, this approach can rarely be used.
- Where sales prices for an offering are not directly observable or highly variable across customers, we follow a cost-plus-margin approach.
- For offerings that have highly variable pricing and lack substantial direct costs to estimate based on a cost-plus-margin approach, we allocate the transaction price by applying a residual approach.

Judgment is required when estimating standalone selling prices.

Recognition of Revenues

For each separate performance obligation, it is evaluated whether control is transferred either at a point in time or over time. For performance obligations that are satisfied over time, revenues are recognized based on a measure of progress, which depicts the performance in transferring control to the customer. Under the terms of our licensing arrangements, we provide the licensee with a research and development license, which represents a right to access our intellectual property as it exists throughout the license period (as our intellectual property is still subject to further research). Therefore, the promise to grant a license is accounted for as a performance obligation satisfied over time as our customers simultaneously receive and consume the benefits from our performance.

Revenues based on the collaboration partners' gross profit, which is shared under the respective collaboration agreements, are recognized based on the sales-based or usage-based royalty exemption; i.e., when the underlying sales occur, which is when the performance obligation has been satisfied. As described further in Note 3, judgment is applied to certain aspects when accounting for the collaboration agreements.

Revenue arrangements that involve two or more partners who contribute to the provision of a specific good or service to a customer are assessed in terms of principal-agent considerations in order to determine the appropriate treatment for the transactions between us and the collaborator and the transactions between us and other third parties. The classification of transactions under such arrangements is determined based on the nature and contractual terms of the arrangement along with the nature of the operations of the participants. Any consideration related to activities in which we are considered the principal, which includes being in control of the good or service before such good or service is transferred to the customer, is accounted for as gross revenues. Any consideration related to activities in which we are considered the agent is accounted for as net revenues.

Revenues from the sale of pharmaceutical and medical products (e.g., COVID-19 vaccine sales and other sales of peptides and retroviral vectors for clinical supply) are recognized when we transfer control of the product to the customer. Control of the product normally transfers when the customer gains physical possession and we have not retained any significant risks of ownership or future obligations with respect to the product. In general, payments from customers are due within 30 days after invoice. However, with respect to our collaboration with Pfizer Inc., or Pfizer, there is a significant time lag between when revenues are recognized and the payments are received. The contractual settlement of the gross profit share has a temporal offset of more than one calendar quarter. As Pfizer's financial quarter for subsidiaries outside the United States differs from ours, it creates an additional time lag between the recognition of revenues and the payment receipt.

For certain contracts, the finished product may temporarily be stored at our location under a bill-and-hold arrangement. Revenues from bill-and-hold arrangements are recognized at the point in time when the customer obtains control of the product and all of the following criteria have been met: (i) the arrangement is substantive; (ii) the product is identified separately as belonging to the customer; (iii) the product is ready for physical transfer to the customer; and (iv) we do not have the ability to use the product or direct it to another customer. In determining when the customer obtains control of the product, we consider certain indicators, including whether title and significant risks and rewards of ownership have transferred to the customer and whether customer acceptance has been received.

Contract Balances

Contract Assets

A contract asset is the right to consideration in exchange for goods or services transferred to the customer. If we transfer goods or services to a customer before the customer pays the respective consideration or before payment is due, a contract asset is recognized for the earned consideration that is conditional.

Trade Receivables

A receivable represents our right to an amount of consideration that is unconditional (i.e., only the passage of time is required before payment of the consideration is due).

Contract Liabilities

A contract liability is the obligation to transfer goods or services to a customer for which we have received consideration (or an amount of consideration is due) from the customer. If a customer pays consideration before we transfer goods or services to the customer, a contract liability is recognized when the payment is made or when the payment is due (whichever is earlier). Contract liabilities are recognized as revenue when we fulfill our performance obligations under the contract.

Refund Liabilities

A refund liability is a consideration which has been received but which will need to be refunded to the customer in the future as it represents an amount to which we are ultimately not entitled under the contract. A refund liability is measured at the amount of consideration received (or receivable) to which we do not expect to be entitled (i.e., amounts not included in the transaction price). We update our estimates of refund liabilities (and the corresponding change in the transaction price) at the end of each reporting period.

2.3.4 Research and Development Expenses

Research and development costs are expensed in the period in which they are incurred. Regarding internal projects, we consider that regulatory approval and other uncertainties inherent in the development of new products preclude the capitalization of internal development expenses as an intangible asset until marketing approval from a regulatory authority is obtained. Payments made to third parties, such as contract research and development organizations as compensation for subcontracted research and development, that are deemed not to transfer intellectual property are expensed as internal research and development expenses in the period in which they are incurred. Such payments are only capitalized if they meet the criteria for recognition of an internally generated intangible asset, usually when marketing approval has been received from a regulatory authority. We have entered into agreements under which third parties grant licenses to us, which are known as in-license agreements. If in-licensing results in consideration for the acquisition of intellectual property that meets the definition of an identifiable asset, this is capitalized as an intangible asset unless the respective intellectual property is mainly used as part of our general ongoing research and development activities without any intent to market the respective product as such. If the transaction also includes research and development services to be provided by the licensor, the share of consideration attributable to these services is recognized in research and development expenses in line with the performance of the services. Sales-based milestone or royalty payments incurred under license agreements after the approval date of the respective pharmaceutical product are recognized as expenses in cost of sales as incurred.

Subsequent internal research and development costs in relation to intellectual property rights are expensed because the technical feasibility of the internal research and development activity can only be demonstrated by the receipt of marketing approval for a related product from a regulatory authority in a major market.

Prior to the second quarter of 2023, we had assessed that inventory produced prior to successful regulatory approval did not meet the criteria for capitalization as an asset, and accordingly expensed the costs of pre-launch inventory as research and development costs. Based on the experience of the past years and the developments since our COVID-19 vaccine was first authorized or approved for emergency or temporary use, our assessment regarding the potential to produce economic benefits changed. Beginning with the second quarter of 2023, pre-launch products from the Comirnaty product family with their potential for economic benefit fulfill the recognition criteria for an asset under the IFRS Conceptual Framework. At each reporting date, the respective inventory is measured at the lower of cost and net realizable value. However, because it is not probable until regulatory approval is obtained, we consider the net realizable value to be zero, as this is the probable amount expected to be realized from its sale until approval is obtained. The write-down is recognized in the statements of profit or loss as research and development expenses. If regulatory approval for a product candidate is obtained, the relevant write-down would be reversed to a maximum of the original cost. Subsequently, inventory is recognized as cost of sales. This reassessment has been treated as a change in estimate and the impacts on current period inventories, cost of sales and research and development expenses are described in Note 7.1.

2.3.5 Government Grants

Government grants and similar grants which are accounted for in accordance with IAS 20 are recognized where there is reasonable assurance that the grant will be received and all attached conditions will be complied with. When the grant relates to an expense item, it is recognized as other income on a systematic basis over the periods that the related costs for which the grant is intended to compensate are expensed. When the grant relates to an asset, it is recognized as deferred income within the consolidated statements of financial position. Other income is subsequently recognized in our consolidated statements of profit or loss over the useful life of the underlying asset subject to funding.

2.3.6 Taxes

Current Income Tax

Current income tax assets and liabilities are measured at the amount expected to be recovered from or paid to the taxation authorities. The tax rates and tax laws used to compute the amount are those that are enacted or substantively enacted at the reporting date in the countries where the Group operates and generates taxable income.

In addition, current income taxes presented for the period include adjustments for uncertain tax payments or tax refunds for periods not yet finally assessed by tax authorities, excluding interest expenses and penalties on the underpayment of taxes. In the event that amounts included in the tax return are considered unlikely to be accepted by the tax authorities (uncertain tax positions), a provision for income taxes is recognized.

Management periodically evaluates positions taken in the tax returns with respect to situations in which applicable tax regulations are subject to interpretation and establishes provisions where appropriate.

Deferred Tax

Deferred tax is provided using the liability method on temporary differences between the tax bases of assets and liabilities and their carrying amounts for financial reporting purposes at the reporting date.

Deferred tax liabilities are recognized for all taxable temporary differences, except:

- when the deferred tax liability arises from the initial recognition of goodwill or an asset or liability in a transaction that is not a business combination and, at the time of the transaction, affects neither the accounting profit nor taxable profit or loss; or
- in respect of taxable temporary differences associated with investments in subsidiaries, when the timing of the reversal of the temporary differences can be controlled and it is probable that the temporary differences will not reverse in the foreseeable future.

Deferred tax assets are recognized for all deductible temporary differences, the carry forward of unused tax credits and any unused tax losses. Deferred tax assets are recognized to the extent that it is probable that taxable profit will be available against which the deductible temporary differences, the carry forward of unused tax credits and unused tax losses can be utilized, except:

- when the deferred tax asset relating to the deductible temporary difference arises from the initial recognition of an asset or liability in a transaction that is not a business combination and, at the time of the transaction, affects neither the accounting profit nor taxable profit or loss; or
- in respect of deductible temporary differences associated with investments in subsidiaries, deferred tax assets are recognized only to the extent that it is probable that the temporary differences will reverse in the foreseeable future and taxable profit will be available against which the temporary differences can be utilized.

Deferred tax assets and liabilities are measured at the tax rates that are expected to apply in the year in which the asset is realized, or the liability is settled, based on tax rates (and tax laws) that have been enacted or substantively enacted at the reporting date.

Unrecognized deferred tax assets are re-assessed at each reporting date and are recognized to the extent that it has become probable that future taxable profits will allow the deferred tax asset to be recovered.

Recognition of Taxes

Current and deferred tax items are recognized similarly to the underlying transaction either in profit or loss, other comprehensive income or directly in equity.

Current tax assets and current tax liabilities are offset if, and only if, we have a legally enforceable right to set off the recognized amounts and intend either to settle on a net basis, or to realize the asset and settle the liability simultaneously. Deferred tax assets and deferred tax liabilities are only offset when we have a legally enforceable right to set off current tax assets and current tax liabilities and the deferred tax assets and deferred tax liabilities relate to income taxes levied by the same taxation authority on either (i) the same taxable entity or (ii) different taxable entities, which intend either to settle current tax liabilities and assets on a net basis, or to realize the assets and settle the liabilities simultaneously, in each future period in which significant amounts of deferred tax liabilities or assets are expected to be settled or recovered.

Sales Tax

Expenses and assets are recognized net of sales tax, except when the sales tax incurred on a purchase of assets or services is not recoverable from the taxation authority.

The net amount of sales tax recoverable from, or payable to, the taxation authority is included as part of receivables or payables in the consolidated statements of financial position.

Future Tax Legislation

Based on the Organisation for Economic Co-operation and Development (OECD) Base Erosion and Profit Shifting (BEPS) project to tackle tax avoidance, the OECD/G20 Inclusive Framework (an association of about 140 countries) decided to introduce a global minimum taxation for large multinational groups (known as Pillar 2). The Global Anti-Base Erosion Rules are intended to ensure that large multinational groups pay a minimum level of tax on the income arising in each jurisdiction where they operate. In December 2021, the OECD published its Model Rules, which serve as a draft bill for implementation into national domestic law, followed by guidelines and commentaries published in March 2022. In December 2022, the EU adopted a corresponding directive (EU 2022/2523) that obliges EU member states to transpose the rules into national domestic law. If the effective tax rate in any jurisdiction is below the minimum rate (15%), the Group may be subject to the so-called top-up tax or a so-called qualified domestic minimum top-up tax.

Several jurisdictions in which the Group operates have transposed the OECD Model Rules into national domestic law and brought them into force. In addition, the Group is closely following the progress of the legislative process in each country in which the Group operates. As of the balance sheet date, the BEPS Pillar 2 regulations (MinBestRL UmsG) had already been transposed into German law (MinStG). The date of application of the law in Germany is for financial years beginning after December 30, 2023. Subsequently, as the OECD Model Rules have entered into force in Germany, the Group is obliged to file top-up tax information returns for all entities which are part of the Group, beginning in financial year 2024. The Group falls within the scope of these regulations. The Group carried out an analysis as of the reporting date to determine the fundamental impact and the jurisdictions in which the Group is exposed to possible effects in connection with a Pillar 2 top-up tax.

Based on this analysis, no countries were identified in which the Group would be materially affected by a Pillar 2 top-up tax. Consequently, the average effective Group tax rate would not have changed if the Pillar 2 legislation had already been in force on the balance sheet date. BioNTech applies the exception in IAS 12, according to which no deferred tax assets and liabilities in connection with the second income taxes of the second pillar of the OECD are recognized and no disclosures are made.

2.3.7 Business Combinations and Goodwill

Business combinations are accounted for using the acquisition method. The cost of an acquisition is measured as the aggregate of the consideration transferred, which is measured at acquisition date fair value, and the amount of any non-controlling interests in the acquiree.

Goodwill is initially measured at cost as the excess of the aggregate of the consideration transferred and the amount recognized for non-controlling interests and any previous interest held over the net identifiable assets acquired and liabilities assumed.

Costs related to executing business combinations are recognized when they are incurred and are classified as general and administrative expenses.

After initial recognition, goodwill is tested at least annually or when there is an indication for impairment. See Note 2.3.10. For the purpose of impairment testing, goodwill acquired in a business combination is, from the acquisition date, allocated to each of the cash-generating units that are expected to benefit from the combination, irrespective of whether other assets or liabilities of the acquiree are assigned to those units.

Where goodwill has been allocated to a cash-generating unit (CGU) and part of the operation within that unit is disposed of, the goodwill associated with the operation disposed of is included in the carrying amount of the operation when determining the gain or loss on disposal. Goodwill disposed of in these circumstances is measured based on the relative values of the operation disposed of and the portion of the cash-generating unit retained.

2.3.8 Intangible Assets

Intangible assets acquired separately are measured on initial recognition at cost. The cost of intangible assets acquired in a business combination is their fair value at the date of acquisition. Following initial recognition, intangible assets are carried at cost less any accumulated amortization and accumulated impairment losses.

The portion of the consideration in in-licensing agreements paid by us to acquire intellectual property is recognized as an intangible asset. If in-licensing includes research and development services, the share of consideration attributable to these services is deferred and recognized in research and development expenses according to the utilization thereof. Payments depending on the achievement of specific milestones as part of the purchase of intangible assets, except for intangible assets acquired in a business combination, are recognized as subsequent acquisition cost of the intangible asset and as a financial liability once the milestone is reached.

The useful lives of intangible assets are assessed as either finite or indefinite.

Intangible assets with finite lives are amortized generally on a straight-line basis over the useful life and assessed for impairment whenever there is an indication that the intangible asset may be impaired. The amortization period and the amortization method for an intangible asset with a finite useful life are reviewed at the end of each reporting period at the least. The amortization expense on intangible assets with finite lives is recognized in the consolidated statements of profit or loss in the expense category that is consistent with the function of the intangible assets.

A summary of the useful lives applied to the Group's intangible assets is as follows:

Intangible assets	Useful life (years)
Intellectual property rights	8-20
Licenses	3-20
Software	3-8

Intangible assets with indefinite useful lives are tested for impairment at least annually, or when there is an indication for impairment, either individually or at the level of a cash-generating unit (see Note 2.3.10 for further details). In the case of intangible assets not yet available for use, the point in time from which a capitalized asset can be expected to generate economic benefit for the Group cannot be determined. Such assets are not amortized, and therefore classified as having an indefinite useful life. The intangible assets not yet available for use are tested for impairment annually, or when there is an indication for impairment on an individual basis. The assessment of indefinite life is reviewed annually to determine whether the indefinite life continues to be supportable. If not, the change in useful life from indefinite to finite is made on a prospective basis.

We have classified advanced payments on intangible assets as intangible assets that are not yet ready for use. Advanced payments on intangible assets are tested for impairment on an annual basis.

An intangible asset is derecognized upon disposal (i.e., at the date the recipient obtains control) or when no future economic benefits are expected from its use or disposal. Any gain or loss arising upon derecognition of the asset (calculated as the difference between the net disposal proceeds and the carrying amount of the asset) is included in the consolidated statements of profit or loss.

See Note 2.3.4 for further details in connection with our accounting of internally generated intangible assets.

2.3.9 Property, Plant and Equipment

Construction in progress is stated at cost. Property, plant and equipment are stated at cost, net of accumulated depreciation and accumulated impairment losses, if any. Such cost includes the cost of replacing part of the property, plant and equipment if the recognition criteria are met. All other repair and maintenance costs are expensed as incurred.

Depreciation is calculated on a straight-line basis over the estimated useful lives of the assets, as follows:

Property, plant and equipment	Useful life (years)
Buildings	10-33
Equipment, tools and installations	7-18

Operating and business equipment has a useful life of 1-10 years and is reported under equipment, tools and installations due to immateriality.

An item of property, plant and equipment initially recognized is derecognized upon disposal (i.e., at the date the recipient obtains control) or when no future economic benefits are expected from its use or disposal. Any gain or loss arising on derecognition of the asset (calculated as the difference between the net disposal proceeds and the carrying amount of the asset) is included in the consolidated statements of profit or loss when the asset is derecognized.

The residual values, useful lives and methods of depreciation of property, plant and equipment are reviewed at each financial year-end and adjusted prospectively, if appropriate.

2.3.10 Impairment of Non-Financial Assets

At each reporting date, we assess whether there is an indication that a non-financial asset may be impaired. Goodwill is tested for impairment at least annually. Impairment is determined for goodwill by assessing the recoverable amount of each cash-generating unit (or group of CGUs) to which the goodwill relates. If any indication exists, or when annual impairment testing is performed, we estimate the asset's or CGU's recoverable amount. The recoverable amount is the higher of an asset's or CGU's fair value less costs of disposal and its value in use. The recoverable amount is determined for an individual asset, unless the asset does not generate cash inflows that are largely independent of those from other assets or groups of assets. If the asset does not generate independent cash inflows, the impairment test is performed for the smallest group of assets that generate largely independent cash inflows from other assets (CGU). When the carrying amount of an asset or cash-generating unit exceeds its recoverable amount, the asset or the non-current assets of the CGU are considered impaired and written down to their recoverable amount.

Impairment losses are recognized in the consolidated statements of profit or loss in expense categories consistent with the function of the impaired asset.

Intangible assets with an indefinite useful life are tested for impairment annually at the CGU level, as appropriate, and when circumstances indicate that the carrying value may be impaired.

Intangible assets not yet available for use are not amortized, but rather tested for impairment when a triggering event arises or at least once a year. The identification of triggering events takes place on a quarterly or on an ad hoc basis with the involvement of the responsible departments, taking internal and external information sources into consideration. The impairment test is performed annually or if there are indications of impairment by determining the asset's value in use. In assessing value in use, the estimated discounted future cash flows are based on long-term forecast calculations reflecting the asset's estimated product life cycles. The assumptions are based on internal estimates along with external market studies. The result of the valuation depends to a large extent on the estimates by the management of the future cash flows of the assets and the discount rate applied, and is therefore subject to uncertainty.

2.3.11 Financial Instruments

A financial instrument is any contract that gives rise to a financial asset of one entity and a financial liability or equity instrument of another entity.

i) Financial Assets

Initial Recognition and Measurement

Financial assets mainly include money market funds, bank deposits and reverse repos, security investments, trade receivables, cash at banks as well as equity investments. Financial assets are initially measured at fair value as of the trade date and – depending on their classification – subsequently measured at amortized cost, fair value through other comprehensive income (OCI) or fair value through profit or loss.

Subsequent Measurement

The measurement of financial assets depends on their classification, as described below.

Financial Assets Measured at Amortized Cost

Financial assets measured at amortized cost include trade receivables and other financial assets are generally measured using the effective interest rate (EIR) method. With respect to trade receivables, we applied the practical expedient, which means that they are measured at the transaction price determined in accordance with IFRS 15. Refer to the accounting policies in Note 2.3.3. Other financial assets measured at amortized cost are held to collect contractual cash flows, which are solely payments of principal and interest. Gains and losses are recognized in our consolidated statements of profit or loss when the financial asset is derecognized, modified or impaired.

Financial Assets Designated at Fair Value through OCI (Equity Instruments)

Upon initial recognition, we can irrevocably elect to classify equity investments as equity instruments designated at fair value through OCI if they meet the definition of equity under IAS 32 and are not held for trading. The classification is determined on an instrument-by-instrument basis. Gains and losses on these financial assets are never recycled to profit

or loss. Dividends are recognized as other income in the consolidated statements of profit or loss when the right of payment has been established. Equity instruments designated at fair value through OCI are not subject to impairment assessment. We elected to irrevocably classify our non-listed and listed equity investments under this category. They are recognized using trade date accounting.

Financial Assets at Fair Value through Profit or Loss

Derivatives not designated as hedging instruments are measured at fair value through profit or loss. A financial asset exists if the derivative has a positive fair value.

Derecognition

A financial asset (or, where applicable, a part of a financial asset or part of a group of similar financial assets) is primarily derecognized (i.e., removed from the consolidated statements of financial position) when the rights to receive cash flows from the asset have expired or have been transferred in terms of fulfilling the derecognition criteria.

Impairment of Financial Assets

An allowance for expected credit losses (ECLs) is considered for all non-derivative financial debt investments, including cash, time deposits and debt securities of the Group. ECLs are based on the difference between the contractual cash flows due in accordance with the contract and all of the cash flows that the Group expects to receive, discounted at an approximation of the original effective interest rate. The expected cash flows will include cash flows from the sale of collateral held or other credit enhancements that are integral to the contractual terms.

Since our financial debt investments are considered to be investments with low risk, the expected credit loss in the upcoming twelve months is used to determine the impairment loss. Wherever a considerable increase in the default risk is assumed, the lifetime expected credit loss of the financial asset is considered.

For trade receivables and contract assets, the Group applies a simplified approach in calculating ECLs. This means that the Group does not track changes in credit risk, but instead recognizes a loss allowance based on lifetime ECLs at each reporting date. We have established an ECL model that is based on the probability of default (PD), considers the respective country default probabilities and takes the maturities into account. In order to determine the PD of companies, we use the maturities of the trade receivables and the score of the companies.

If there is objective evidence that certain trade receivables or contract assets are fully or partially impaired, additional loss allowances are recognized to account for expected credit losses. A debtor’s creditworthiness is assumed to be impaired if there are objective indications that the debtor is in financial difficulties, such as the disappearance of an active market for its products or impending insolvency.

ii) Financial Liabilities

Financial liabilities are generally measured at amortized cost using the effective interest rate (EIR) method. Derivatives with negative fair values not designated as hedging instruments and liabilities for contingent consideration in business combinations are measured at fair value.

All financial liabilities are recognized initially at fair value and, in the case of loans and borrowings and payables, net of directly attributable transaction costs.

Financial liabilities measured at amortized cost include loans and borrowings, trade payables and other financial liabilities. They are measured at amortized cost using the EIR method. Gains and losses are recognized in the consolidated statements of profit or loss when the liabilities are derecognized as well as through the EIR amortization process.

Amortized cost is calculated by taking into account any discount or premium on acquisition and fees or costs that are an integral part of the EIR. The EIR amortization is included as finance costs in the consolidated statements of profit or loss.

Derecognition

A financial liability is derecognized when the obligation under the liability is discharged or cancelled or expires. When an existing financial liability is replaced by another from the same lender on substantially different terms, or the terms of an existing liability are substantially modified, such an exchange or modification is treated as the derecognition of the original liability and the recognition of a new liability. The difference in the respective carrying amounts is recognized in the consolidated statements of profit or loss.

iii) Expenses and Income from Exchange Forward Contracts

Effects from foreign exchange forward contracts, which are measured at fair value through profit or loss, are shown as either other operating income or other operating expenses on a cumulative basis and might switch between those two items during the year-to-date reporting periods.

2.3.12 Fair Value Measurement

Fair value is a market-based measurement. For some assets and liabilities, observable market transactions or market information is available. For other assets and liabilities, observable market transactions or market information might not be available. When a price for an identical asset or liability is not observable, another valuation technique is used. To increase consistency and comparability in fair value measurements, there are three levels of the fair value hierarchy:

- Level 1 contains the use of quoted prices in active markets for identical assets or liabilities.
- Level 2 inputs are inputs other than quoted prices included within Level 1 that are observable for the asset or liability either directly or indirectly.
- Level 3 inputs are unobservable.

Within this hierarchy, estimated values are made by management based on reasonable assumptions, including other fair value methods.

For assets and liabilities that are recognized in the financial statements at fair value on a recurring basis, we determine whether transfers have occurred between levels in the fair value hierarchy by re-assessing categorization (based on the lowest level input that is significant to the fair value measurement as a whole) at the end of each reporting period.

For the purpose of fair value disclosures, classes of assets and liabilities have been determined on the basis of the nature, characteristics and risks of the asset or liability and the level of the fair value hierarchy, as explained above.

2.3.13 Inventories

Inventories are valued at the lower of cost and net realizable value.

Costs incurred in bringing each product to its present location and condition are accounted for as follows:

- raw materials and supplies: purchase cost on a first-in / first-out basis; or
- unfinished goods and finished goods: cost of direct materials and labor, including both internal manufacturing and third-party contract manufacturing organizations, or CMOs, and a proportion of manufacturing overheads based on the normal operating capacity, but excluding borrowing costs.

Net realizable value is the estimated selling price in the ordinary course of business less estimated costs of completion and the estimated costs necessary to make the sale. Write-offs are recorded if inventories are expected to be unsaleable, do not fulfill the specification defined by our quality standards or if their shelf-life has expired. For our inventories subject to the collaboration partners' gross profit share mechanism, we consider the contractual compensation payments in the estimate of the net realizable value.

Beginning with the second quarter of 2023, pre-launch products from the Comirnaty product family with their potential for economic benefit fulfill the recognition criteria for an asset under the IFRS Conceptual Framework. At each reporting date, the respective inventory is measured at the lower of cost and net realizable value. However, because is not probable until regulatory approval is obtained, we consider the net realizable value to be zero, as this is the probable amount expected to be realized from its sale until approval is obtained (see also Note 2.3.4 for further information on our assessment regarding the potential of our pre-launch products to produce economic benefits).

2.3.14 Cash and Cash Equivalents

Cash and cash equivalents comprise cash at banks and on hand and short-term investments that we consider to be highly liquid (including deposits, money market funds and reverse repos) with an original maturity of three months or less that are readily convertible to a known amount of cash and subject to an insignificant risk of changes in value. Deposits with an original maturity of more than three months are recognized as other financial assets.

2.3.15 Treasury Shares

We apply the par value method to our repurchases of outstanding American Depositary Shares, or ADSs. Accordingly, the nominal value of acquired treasury shares is deducted from equity and shown in the separate item "Treasury shares". Any premium paid in excess of the nominal value of a repurchased ADS is deducted from the capital reserve. On the trade date, we recognize a liability, and on the settlement date, we settle in cash. We recognize the foreign exchange differences that may occur between the trade and settlement date as profit or loss.

2.3.16 Leases

At the inception of a contract, we assess whether the contract is, or contains, a lease. A contract is, or contains, a lease if the contract conveys the right to control the use of an identified asset for a period of time in exchange for consideration. To assess whether a contract conveys the right to control the use of an identified asset, we assess whether:

- the contract involves the use of an identified asset – this may be specified explicitly or implicitly and should be physically distinct or represent substantially all of the capacity of a physically distinct asset. If the supplier has a substantive substitution right, then the asset is not identified;
- we have the right to obtain substantially all of the economic benefits from the use of the asset throughout the period of use; and
- we have the right to direct the use of the asset. We possess this right when we hold the decision-making rights that are most relevant to changing how and for what purpose the asset is used. In rare cases where the decision about how and for what purpose the asset is used is predetermined, the Group has the right to direct the use of the asset if either:
    - we have the right to operate the asset; or
    - we designed the asset in a way that predetermines how and for what purpose it will be used.

At inception or on reassessment of a contract that contains a lease component, the consideration in the contract is allocated to each lease component on the basis of their relative standalone prices. However, for leases of land and buildings in which we are a lessee, we have elected not to separate non-lease components, and instead account for the lease and non-lease components as a single lease component.

We recognize a right-of-use asset and a lease liability at the lease commencement date.

The right-of-use asset is initially measured at cost, which comprises the initial amount of the lease liability adjusted for any lease payments made at or before the commencement date, plus any initial direct costs incurred and an estimate of the costs to dismantle and remove the underlying asset or to restore the underlying asset or the site on which it is located, less any lease incentives received by the Group.

The right-of-use asset is subsequently depreciated using the straight-line method from the commencement date to the earlier of the end of the useful life of the right-of-use asset and the end of the lease term. The estimated useful lives of right-of-use assets are determined on the same basis as those of property, plant and equipment. In addition, the right-of-use asset is periodically reduced by impairment losses, if any, and adjusted for certain remeasurements of the lease liability.

The lease liability is initially measured at the present value of the lease payments that are not paid at the commencement date, discounted using the incremental borrowing interest rate implicit in the lease or, if that rate cannot be readily determined, the Group's incremental borrowing rate. Generally, the incremental borrowing rate is used as the discount rate.

Lease payments included in the measurement of the lease liability comprise the following:

- fixed payments, including in-substance fixed payments;
- variable lease payments that depend on an index or a rate, initially measured using the index or rate as of the commencement date;
- amounts expected to be payable under a residual value guarantee; and
- the exercise price under a purchase option that is reasonably certain to be exercised, lease payments in an optional renewal period if it is reasonably certain that the extension option is exercised, and penalties for early termination of a lease unless it is reasonably certain that the contract will not be terminated early.

The lease liability is subsequently measured at amortized cost using the EIR method. It is remeasured when there is a change in future lease payments arising from a change in an index or rate, if there is a change in the estimate of the amount expected to be payable under a residual value guarantee, or if we change our assessment of whether we will exercise a purchase, extension or termination option. When the lease liability is remeasured, a corresponding adjustment is made to the carrying amount of the right-of-use asset or is recorded in the consolidated statements of profit or loss if the carrying amount of the right-of-use asset has been reduced to zero.

Right-of-use assets are presented separately and lease liabilities are presented under "Financial liabilities" in the consolidated statements of financial position.

Depreciation is calculated on a straight-line basis over the estimated useful lives of the assets or shorter lease term, as follows:

Right-of-use assets	Useful life or shorter lease term (years)
Buildings	2-25
Equipment, tools and installations	2-5
Production facilities	2-3
Automobiles	3-4

Short-Term Leases and Leases of Low-Value Assets

We have elected not to recognize right-of-use assets and lease liabilities for short-term leases of machinery that have a lease term of 12 months or less or leases of low-value assets. We recognize the lease payments associated with these leases as an expense in the consolidated statements of profit or loss on a straight-line basis over the lease term.

2.3.17 Provisions

Provisions are recognized when there is a present obligation (legal or constructive) as a result of a past event, it is probable that an outflow of resources embodying economic benefits will be required to settle the obligation and a reliable estimate can be made of the amount of the obligation. When we expect some or all of a provision to be reimbursed, for example, under an insurance contract, the reimbursement is recognized as a separate asset, but only when the reimbursement is virtually certain.

A provision is also recognized for certain contracts with suppliers for which the unavoidable costs of meeting the obligations exceed the economic benefits expected to be received. The economic benefits considered in the assessment comprise the future benefits we are directly entitled to under the contract as well as the anticipated future benefits that are the economic consequence of the contract if these benefits can be reliably determined.

The expense relating to a provision is presented in the consolidated statements of profit or loss net of any reimbursement.

2.3.18 Share-Based Payments

Employees (and others providing similar services) receive remuneration in the form of share-based payments, which are settled in equity instruments (equity-settled transactions) or in cash (cash-settled transactions).

In accordance with IFRS 2, share-based payments are generally divided into cash-settled and equity-settled. Both types of payment transactions are measured initially at their fair value as of the grant date. The fair value is determined using an appropriate valuation model, further details of which are given in Note 16. Rights granted under cash-settled transactions are remeasured at fair value at the end of each reporting period until the settlement date. The cost of share-based payment awards is recognized over the relevant service period, applying either the straight-line method or the graded vesting method, where applicable.

These costs are recognized in cost of sales, research and development expenses, sales and marketing expenses or general and administrative expenses, together with a corresponding increase in equity (other reserves) or other liabilities, over the period in which the service is provided (the vesting period). The cumulative expense recognized for cash- and equity-settled transactions at each reporting date until the vesting date reflects the extent to which the vesting period has expired, and also reflects the best estimate of the number of equity instruments expected to ultimately vest.

Service and non-market performance conditions are not taken into account when determining the grant date fair value of awards, but the likelihood of the conditions being met is assessed as part of our best estimate of the number of equity instruments that will ultimately vest. Market performance conditions are reflected within the grant date fair value. Any other conditions attached to an award, but without an associated service requirement, are considered to be non-vesting conditions. Non-vesting conditions are reflected in the fair value of an award and lead to an immediate expensing of an award unless there are also service and/or performance conditions.

If we have a choice of settling either in cash or by providing equity instruments, the rights granted are accounted for as an equity-settled transaction, unless there is a present obligation to settle in cash.

If, due to local tax regulations, an amount is withheld for the employee's tax obligations and paid directly to the tax authorities in cash on the employee's behalf, the entire share-based payment program remains an equity-settled plan based on the IFRS 2 classification. Accordingly, the amount withheld for the employee's tax obligations expected to be paid directly to the tax authorities is reclassified from "Other reserves" to "Other non-financial liabilities".

2.3.19 Cash Dividend

We recognize a liability to pay a dividend when the distribution is authorized. As per the corporate laws of Germany, a distribution is authorized when it is approved by the general shareholder meeting. A corresponding amount is recognized directly in equity.

2.4 Standards Applied for the First Time

In 2023, the following potentially relevant new and amended standards and interpretations became effective, but did not have a material impact on our consolidated financial statements:

Standards / Interpretations	Date of application
IFRS 17 Insurance Contracts	January 1, 2023
Amendments to IFRS 17 Insurance contracts: Initial Application of IFRS 17 and IFRS 9 – Comparative Information	January 1, 2023
Amendments to IAS 1 and IFRS Practice Statement 2: Disclosure of Accounting Policies	January 1, 2023
Amendments to IAS 8 Accounting policies, Changes in Accounting Estimates and Errors: Definition of Accounting Estimates	January 1, 2023
Amendments to IAS 12 Income Taxes: Deferred Tax related to Assets and Liabilities arising from a Single Transaction	January 1, 2023
Amendments to IAS 12 Income taxes: International Tax Reform – Pillar Two Model Rules	January 1, 2023

2.5 Standards Issued but Not Yet Effective

The new and amended standards and interpretations that are issued but not yet effective by the date of issuance of the financial statements and that might have an impact on our financial statements are disclosed below. We have not adopted any standards early and intend to adopt these new and amended standards and interpretations, if applicable, when they become effective.

Standards / Interpretations		Date of application
Amendments to IFRS 16 Leases: Lease Liability in a Sale and Leaseback		January 1, 2024
Amendments to IAS 7 Statement of Cash Flows and IFRS 7 Financial Instruments: Disclosures: Supplier Finance Arrangements	(1)	January 1, 2024
Amendments to IAS 1 Presentation of Financial Statements: Classification of Liabilities as Current or Non-Current		January 1, 2024
Amendments to IAS 1 Presentation of Financial Statements: Non-current Liabilities with Covenants		January 1, 2024
Amendments to IAS 21 The Effects of Changes in Foreign Exchange Rates: Lack of Exchangeability	(1)	January 1, 2025

(1) Standards had not yet been endorsed in the European Union at the time of publication.

We do not expect a significant impact from the application of any of these standards and amendments.

3 Significant Accounting Judgements, Estimates and Assumptions

The preparation of the consolidated financial statements requires management to make judgments, estimates and assumptions that affect the reported amounts of revenues, expenses, assets and liabilities, the accompanying disclosures and the disclosure of contingent liabilities. Uncertainty about these assumptions and estimates could result in outcomes that require a material adjustment to the carrying amount of assets or liabilities affected in future periods.

Significant accounting judgments, as well as key assumptions concerning the future and other key sources of estimation uncertainty at the reporting date that have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year, are described below. We based our assumptions and estimates on parameters available when the consolidated financial statements were prepared. Existing circumstances and assumptions about future developments, however, may change due to market changes or circumstances arising that are beyond the control of the Group. Such changes are reflected in the assumptions when they occur.

Revenues from Contracts with Customers

We applied the following judgments, estimates and assumptions that significantly affect the determination of the amount and timing of revenues from contracts with customers:

Identification and Determination of Performance Obligations

We generate revenues from collaboration and license agreements, which contain multiple elements, including licenses to use, research, develop, manufacture and commercialize candidates and products, research and development services as well as obligations to develop and manufacture preclinical and clinical material and products. We determined that those collaboration and license agreements qualify as contracts with customers. A contract is an agreement between two or more parties that establishes enforceable rights and obligations. At inception of each agreement, we apply judgment when determining which promises represent distinct performance obligations. If promises are not distinct, they are combined until the bundle of promised goods and services is distinct. For some agreements, this results in accounting for goods and services promised in a collaboration and license agreement as a single performance obligation with a single measure of progress. For these combined performance obligations, we assess which of these promises is the predominant promise to determine the nature of the performance obligation. When licenses are granted, we determined that the grant of the license is the predominant promise within the combined performance obligations. In our view, we grant our customers a right to access or a right to use our intellectual property due to the collaboration and license agreements.

Measurement of the Transaction Price

Our collaboration and license agreements often include variable consideration, which is contingent on the occurrence or non-occurrence of a future event (i.e., reaching a certain milestone). When determining deferred revenues from a collaboration and license agreement, we need to estimate the amount of consideration to which we will be entitled in exchange for transferring the promised goods or services to our customers.

As there are usually only two possible outcomes (i.e., milestone is reached or not), we have assessed that the method of the most likely amount is the best method to predict the amount of consideration to which we will be entitled. At contract inception, the most likely amount for milestone payments is estimated to be zero. We have assessed that the likelihood of achieving the respective milestone decreases depending on how far the expected date of achieving the milestone lies in the future. At each reporting date, we use judgment to determine when to include variable consideration in the transaction price in such a way that it is highly probable that a significant revenue reversal in the amount of cumulative revenue recognized will not occur when the associated uncertainty with respect to the variable consideration is subsequently resolved. We have concluded that future milestone payments are fully constrained at the end of the current financial year.

Future milestone payments would become unconstrained upon the satisfaction of the milestone event, specifically a development event, regulatory approval or achievement of a sales milestone.

Allocation of the Transaction Price to Performance Obligations and Revenue Recognition as Performance Obligations are Satisfied

We allocate the transaction price to performance obligations based on their relative standalone selling prices, which are generally based on our best estimates and interpretations of facts and circumstances of each contractual agreement and may require significant judgment to determine appropriate allocation.

Upfront payments and reimbursement for expenses are initially deferred on our consolidated statements of financial position. We assessed that no significant financing component exists within our collaboration agreements since the overall business purpose of advanced payments is to support the payment structure rather than to provide a significant benefit of financing. For performance obligations in which the costs vary based on progress, an input-based measure that takes into account cost incurred is the most reliable indicator of the progress of the related research activities. In other cases, revenue recognition on a straight-line basis may be the most reliable indicator of our performance toward complete satisfaction. If the contractual activities progress, the achievement of development milestones will be used to measure the progress toward complete satisfaction. We evaluate the measure of progress in each reporting period and, if necessary, adjust the measure of performance and related revenue recognition. Any such adjustments are recorded on a cumulative catch-up basis, which would affect revenues and net profit or loss in the period of adjustment.

Upon successfully commercializing a pharmaceutical product, the collaboration and license agreements also provide for additional profit-sharing or tiered royalties earned when customers recognize net sales of licensed products as well as sales milestone payments. Revenue is recognized based on the sales-based or usage-based royalty exemption; i.e., when, or as, the underlying sales occur, which is when the performance obligation has been satisfied.

Principal-Agent Considerations

Collaboration agreements that involve two or more partners who contribute to the provision of a specific good or service to a customer are assessed in terms of principal-agent considerations. Under our current collaboration agreements, the allocation of marketing and distribution rights defines territories in which the collaboration partner acts as a principal in each case. We recognize revenue net based on the collaboration partners' gross profit in territories where the partner is responsible for supply, and on a gross basis when directly supplying our customers in our territories when control has been transferred. Amounts paid to collaboration partners for their share of our profits earned where we are the principal in the transaction are recorded as cost of sales.

Pfizer Agreement Characteristics

With respect to our collaboration with Pfizer, commercial revenues are recognized based on our collaboration partner's gross profit from COVID-19 vaccine sales, which is shared under the respective collaboration agreement. In determining commercial revenues pursuant to this collaboration agreement, we are reliant on our collaboration partner for details regarding its gross profit for the period at hand. Some of the information which our collaboration partner provides us with to identify the gross profit is, by necessity, preliminary and subject to change.

Pfizer's gross profit share is calculated based on sales and takes into account transfer prices. The latter include manufacturing and shipping costs, which represent standard prices and include mark-ups on manufacturing costs as specified by the terms of the agreement. Manufacturing and shipping cost variances were considered as far as those have been identified. Nevertheless, those input parameters may be adjusted once actual costs are determined. The sales as reported by Pfizer have been used to estimate license obligations in terms of royalties and sales milestones. Sales milestones and royalties are recognized as they are earned by the partners. Sales milestones are shared equally, while royalty payments are borne by the partners on the basis of revenues in the territories for which the partners are responsible and subsequently deducted as cost under the gross profit shared. The estimated royalty fees applied to net sales reflect the license obligations to the extent currently identified from third-party contractual arrangements. Changes in estimates are accounted for prospectively, when determined.

Manufacturing cost variances include expenses from unused contract manufacturing capacities and overstock inventories finally scrapped. As only materialized costs – which means manufacturing capacities finally lapsed or inventories finally scrapped – are shared with the partner in a cash-effective manner, the gross profit share impact is anticipated once assessed as being highly probable to occur. Therefore, information on Pfizer's write-downs of inventories is considered. Any changes to this assessment will be recognized prospectively.

Pfizer's determination of manufacturing and shipping costs also affects the transfer prices that have been charged to COVID-19 vaccine supplies that it manufactures and supplies to us and may be subject to adjustment whenever manufacturing and shipping cost variances are identified. Likewise, our own cost of sales and the respective gross profit share owed to our partner may be adjusted prospectively, when changes are determined.

For contract balances related to the Pfizer agreement, see Note 6. Judgment is required in determining whether a right to consideration is unconditional and thus qualifies as a receivable.

Provisions and Contingencies

We are currently confronted with a number of claims and legal proceedings. They include claims from third parties demanding indemnification for alleged infringement of a third-party patent or other intellectual proprietary rights, as well as product liability claims. In respect of these matters, we assess whether provisions must be recorded and whether contingencies must be reported.

Due to uncertainties relating to these matters, provisions and contingencies are based on the best information available.

Significant judgment is required in the determination of whether and when a provision is to be recorded and what the appropriate amount for such provision should be. Notably, judgment is required in the following areas:

- Determining whether an obligation exists
- Determining the probability of an outflow of economic benefits
- Determining whether the amount of an obligation is reliably estimable
- Estimating the amount of the expenditure required to settle the present obligation

At the end of each reporting period, we reassess the potential obligations related to our pending claims and litigation and adjust our respective provisions and contingencies to reflect the current best estimate. In addition, we monitor and evaluate new information that we receive after the end of the respective reporting period, but before the consolidated financial statements are authorized for issue, in order to determine whether this provides additional information regarding conditions that existed at the end of the reporting period. Changes to estimates, assumptions and outcomes compared to previous estimates and assumptions could require material adjustments to the carrying amounts of the respective provisions recorded and additional provisions.

The expected timing or amounts of any outflows of economic benefits resulting from these lawsuits and claims are uncertain and difficult to estimate or even not estimable, as they generally depend on the duration of the legal proceedings and settlement negotiations required to resolve the litigation and claims and the unpredictability of the outcomes of legal disputes in several jurisdictions.

Disclosures in respect of third-party claims and litigation for which no provisions have been recognized are made in the form of contingent liabilities, unless a potential outflow of resources is considered remote. It is not practicable to estimate the financial impact of contingent liabilities due to the uncertainties around lawsuits and claims as outlined above.

For further disclosures and carrying amounts relating to provisions as well as contingencies, see Note 17 and Note 18.

Research and Development Expenses

The nature of our business and primary focus of our activities, including development of our platforms and manufacturing technologies, generate a significant amount of research and development expenses. Research costs are expensed as incurred. Development expenditures on an individual project are recognized as an intangible asset if, and only if, the capitalization criteria are met. Based on our assessment, we have concluded that, due to the inherent risk of failure in pharmaceutical development and the uncertainty of approval, these criteria are usually not met before regulatory approval is achieved. The related expenditure is reflected in the consolidated statements of profit or loss in the period in which the expenditure is incurred. We have entered into agreements under which third parties grant licenses to us, which are known as in-license agreements. If in-licensing results in consideration for the acquisition of intellectual property that meets the definition of an identifiable asset, this is capitalized as an intangible asset. If the transaction also includes research and development services to be provided by the licensor, the share of consideration attributable to these services is recognized in research and development expenses in line with the performance of the services. The allocation of consideration attributable to the acquisition of intellectual property and consideration attributable to the research and development services provided by the licensor requires management to make judgements and assumptions. These judgments and assumptions can materially affect our research and development expenses.

Business Combinations

In our accounting for business combinations, judgment is required in determining whether an intangible asset is identifiable and whether it should be recorded separately from goodwill. Additionally, estimating the acquisition-date fair values in conjunction with purchase price allocation involves estimation uncertainty and discretionary decisions. The necessary measurements are based on information available on the acquisition date and on expectations and assumptions that have been deemed reasonable by management. These judgments, estimates and assumptions can materially affect our financial position and profit.

Intangible Assets

Significant assumptions and estimates are required to determine the appropriate amount of amortization of intangible assets. They relate in particular to the determination of the underlying useful life. The useful life of an intangible asset is based on our estimates regarding the period over which the intangible asset is expected to generate economic benefits for us.

Significant assumptions and estimates are also required for the identification of a potential need to recognize an impairment loss. These estimates include management's assumptions regarding future cash flow projections and economic risks that require significant judgment and assumptions about future developments. They can be affected by a variety of factors, including, but not limited to, changes in business strategy, internal forecasts and the estimation of weighted average cost of capital.

Changes to the assumptions underlying our assessment of the impairment of goodwill and intangible assets could require material adjustments to the carrying amount of our recognized goodwill and intangible assets, as well as to the amounts of impairment charges recognized in profit or loss.

Share-Based Payments

Determining the fair value of share-based payment transactions requires the most appropriate valuation for the specific program, which depends on the underlying terms and conditions. We used valuation models such as a binomial or Monte Carlo simulation model for the measurement of the cash- and equity-settled transactions' fair value, taking into account certain assumptions relating to a number of factors, including the volatility of the stock price, the determination of an appropriate risk-free interest rate, expected dividends and the probability of reaching a minimum hurdle to exercise the relevant options. For awards which were granted prior to the initial public offering, at a time where no quoted market prices existed, the valuation model assumptions included the option's underlying share price. For awards which were granted after the initial public offering, the grant date's share prices on the Nasdaq Global Select Market were included in the valuation.

A fluctuation assumption is applied when estimating the number of equity instruments for which service conditions are expected to be satisfied and will be revised if material differences arise. Ultimately, a true-up to the number satisfied by the settlement date will be recorded.

For further disclosures relating to share-based payments, see Note 16.

Income Taxes

We are subject to income taxes in more than one tax jurisdiction. Due to the increasing complexity of tax laws and the corresponding uncertainty regarding the legal interpretation by the fiscal authorities, tax calculations are generally subject to an elevated amount of uncertainty. To the extent necessary, possible tax risks are taken into account in the form of provisions.

We do not recognize or we would impair deferred tax assets if it is unlikely that a corresponding amount of future taxable profit will be available against which the deductible temporary differences, tax loss carry forwards and tax credits can be utilized. The assessment whether a deferred tax asset can be recognized or is impaired requires significant judgment, as we need to estimate future taxable profits to determine whether the utilization of the deferred tax asset is probable. In evaluating our ability to utilize our deferred tax assets, we consider all available positive and negative evidence, including the level of historical taxable income and projections for future taxable income over the periods in which the deferred tax assets are recoverable. Based on the requirements in IAS 12, to not place reliance on future events that are uncertain as they for example cannot be controlled, managements assessment takes particular into account the fact that there is an inherent risk of failure in pharmaceutical development and an uncertainty of approval which is dependent on external regulatory agencies' opinions. This also includes management's assessment on the character and amounts of taxable future profits, the periods in which those profits are expected to occur, and the availability of tax planning opportunities.

Our management continued to take the view that deferred tax assets on tax losses carried forward that relate to subsidiaries which have a loss-making history cannot be recognized. This includes the assessment that those subsidiaries have neither any taxable temporary differences nor any tax planning opportunities available that could support the recognition of deferred tax assets.

For further disclosures relating to deferred taxes, see Note 8.

4 Group Information

Information about Subsidiaries

The consolidated financial statements include the following subsidiaries:

Name	Country of incorporation	Registered office	% equity interest December 31, 2023	% equity interest December 31, 2022
BioNTech BioNTainer Holding GmbH	Germany	Mainz[3]	100%	100%
BioNTech Cell & Gene Therapies GmbH	Germany	Mainz[3]	100%	100%
BioNTech Delivery Technologies GmbH	Germany	Halle[3]	100%	100%
BioNTech Diagnostics GmbH	Germany	Mainz[3]	100%	100%
BioNTech Europe GmbH	Germany	Mainz[3]	100%	100%
BioNTech Idar-Oberstein Services GmbH	Germany	Idar-Oberstein[3]	100%	100%
BioNTech Individualized mRNA Manufacturing GmbH	Germany	Mainz[3]	100%	100%
BioNTech Innovation and Services Marburg GmbH	Germany	Marburg[3]	100%	100%
BioNTech Innovation GmbH	Germany	Mainz[3]	100%	100%
BioNTech Innovative Manufacturing Services GmbH	Germany	Idar-Oberstein[3]	100%	100%
BioNTech Manufacturing GmbH	Germany	Mainz[3]	100%	100%
BioNTech Manufacturing Marburg GmbH	Germany	Marburg[3]	100%	100%
BioNTech Real Estate Holding GmbH	Germany	Holzkirchen[3]	100%	100%
BioNTech Real Estate Verwaltungs GmbH	Germany	Holzkirchen[3]	100%	100%
InstaDeep DE GmbH	Germany	Berlin	100%	n/a[2]
JPT Peptide Technologies GmbH	Germany	Berlin[3]	100%	100%
NT Security and Services GmbH	Germany	Mainz[3]	100%	100%
reSano GmbH	Germany	Mainz[3]	100%	100%
BioNTech Australia Pty Ltd.	Australia	Melbourne	100%	100%
BioNTech R&D (Austria) GmbH	Austria	Vienna	100%	100%
BioNTech (Shanghai) Pharmaceuticals Co. Ltd.	China	Shanghai	100%	100%
InstaDeep France SAS	France	Paris	100%	n/a[2]
Biopharma BioNTech Israel Ltd.	Israel	Tel Aviv	100%	n/a[1]
New Technologies Re	Luxembourg	Luxembourg	100%	n/a[1]
InstaDeep Nigeria Limited	Nigeria	Lagos	100%	n/a[2]
BioNTech Rwanda Ltd.	Rwanda	Kigali	100%	100%
BioNTech Sénégal Suarl	Senegal	Dakar	100%	n/a[1]
BioNTech Pharmaceuticals Asia Pacific Pte. Ltd.	Singapore	Singapore	100%	100%
BioNTech Pharmaceuticals Spain S.L	Spain	Barcelona	100%	n/a[1]
BioNTech Switzerland GmbH	Switzerland	Basel	100%	n/a[1]
BioNTech Taiwan Co. Ltd.	Taiwan	Taipei	100%	n/a[1]
InstaDeep Tunisia SARL	Tunisia	Tunis	100%	n/a[2]
BioNTech Turkey Tıbbi Ürünler Ve Klinik Araştirma Ticaret Anonim Şirketi	Türkiye	Istanbul	100%	100%
BioNTech UK Ltd.	United Kingdom	London	100%	100%
InstaDeep Ltd.	United Kingdom	London	100%	5.3%[2]
BioNTech Research and Development, Inc.	United States	Cambridge	100%	100%
BioNTech USA Holding, LLC	United States	Cambridge	100%	100%
BioNTech US Inc.	United States	Cambridge	100%	100%
BioNTech Delivery Technologies (US), LLC	United States	Cambridge	100%	n/a[2]
InstaDeep LLC	United States	Dover	100%	n/a[2]
JPT Peptide Technologies Inc.	United States	Cambridge	100%	100%

(1) Included during the year ended December 31, 2023.
(2) Fully acquired during the year ended December 31, 2023.
(3) Subsidiary makes use of the exemption of Sections 264 para. 3 and 264b HGB for the 2023 financial year.

All entities listed above are included in our consolidated financial statements.

Parent Company

ATHOS KG, Holzkirchen, Germany, is the sole shareholder of AT Impf GmbH, Munich, Germany, and beneficial owner of the following percentage of ordinary shares in BioNTech at the dates as indicated. ATHOS KG via AT Impf GmbH has de facto control over BioNTech based on its substantial shareholding, which practically enables it to exercise the majority of voting rights to pass resolutions at our Annual General Meeting, or AGM.

Name	Country of incorporation	Registered office	Ownership of ordinary shares in BioNTech (in %) December 31, 2023	December 31, 2022
AT Impf GmbH	Germany	Munich	43.77%	43.42%

Entity with Significant Influence over the Group

Medine GmbH, Mainz, Germany, owned the following percentage of ordinary shares in BioNTech at the following dates as indicated:

Name	Country of incorporation	Registered office	Ownership of ordinary shares in BioNTech (in %) December 31, 2023	December 31, 2022
Medine GmbH	Germany	Mainz	17.01%	17.38%

5 Business Combinations

Acquisition of InstaDeep Ltd.

In July 2023, we acquired InstaDeep Ltd., London, United Kingdom (InstaDeep), a leading global technology company in the field of artificial intelligence (AI) and machine learning, by purchasing 100% of the remaining shares in InstaDeep not already owned by us. The acquisition is intended to create a fully integrated, enterprise-wide capability that leverages AI and machine learning technologies across our therapeutic platforms and operations. InstaDeep also continues to provide its services to clients around the world in diverse industries, including in the technology, transport and logistics, and industrial and financial services sectors.

The completion of the acquisition took place in July 2023. We performed an allocation of the total consideration and the underlying assets acquired (including certain identified intangible assets such as InstaDeep's DeepChain technology and customer relationships) and liabilities assumed based on their fair values using the information available as of the acquisition date. The total consideration and the fair values in accordance with IFRS 3 of the identified net assets acquired of InstaDeep as of July 31, 2023, are as follows:

(in millions €)	**Fair value recognized on acquisition** InstaDeep Ltd.
Assets	
Intangible assets	187.6
Property, plant and equipment	2.1
Right-of-use assets	0.7
Trade receivables	2.4
Financial assets - current	52.5
Cash and cash equivalents	21.2
Other assets non-current and current	8.7
Total assets	**275.0**
Liabilities	
Deferred tax liabilities	45.8
Other liabilities long-term and short-term	18.2
Total liabilities	**64.0**
Total identifiable net assets at fair value	**211.0**
Goodwill from the acquisition	306.5
Total consideration	**517.5**
Consideration	
Cash paid	358.1
Cash to be paid in 2024	4.0
Designated FX hedge	(8.1)
Shares transferred (approx. 1.1 million shares)	103.7
Contingent consideration	31.8
Previously held non-listed equity investment (stake of 5.3%)	27.9
Total consideration	**517.5**

The intangible assets acquired comprise DeepChain technology and customer relationships. Their fair values were determined based on the multi-period excess earnings method (MEEM) and amount to €176.0 million and €7.8 million respectively.

The fair value of the shares transferred is determined based on the number of shares transferred and the closing price of the ADSs as of July 31, 2023.

The acquisition of InstaDeep is a step acquisition in accordance with IFRS 3.41-3.42A since we already held a 5.3% interest prior to the acquisition. In prior reporting periods, we recognized changes in the value of this equity interest in other comprehensive income. The amount of the remeasurement to fair value that was recognized in other comprehensive income is recognized on the same basis as would be required if we disposed directly of the previously held equity interest. Based on the total consideration for the acquired shares (94.7%), the value of the already held shares is €27.9 million, which results in a loss of €2.2 million shown in other comprehensive income in the year ended December 31, 2023.

At the acquisition date, the contingent consideration was recognized at its fair value of €31.8 million based on cash flow projections in connection with performance-based future milestone cash payments to eligible shareholders after a three-year earn-out period. The lower end of the bandwidth of possible outcomes of the contingent consideration is zero; the upper limit is €124.6 million. In addition, €12.5 million of potential earn-out payments are considered remuneration and will be recognized as personnel expense over a three-year period in which services are to be provided.

Transaction costs of €6.0 million were expensed and are included in general and administrative expenses.

The goodwill mainly comprises the value of expected synergies from including AI and machine learning technologies across our therapeutic platforms and operations and intangible assets that are not recognized separately, such as the acquired skilled workforce and its know-how. Therefore, the goodwill is allocated almost in full to the CGU immunotherapies and to a minor extent to a CGU comprising the external InstaDeep business. The goodwill is not tax deductible.

Deferred tax liabilities relating to temporary differences of the assets acquired in the business combination were recognized in an amount of €45.8 million. In line with the deferred tax liabilities assumed, deferred tax assets relating to temporary differences and tax loss carry forwards which existed as of the acquisition date were recognized. The deferred tax assets and liabilities were offset to the extent that the conditions for offsetting were fulfilled.

Since the acquisition, InstaDeep's impact on our revenue and profit for the period has been immaterial. Accordingly, hypothetical amounts for our revenue and profit for the financial year, which were calculated on the assumption that the acquisition had taken place at the beginning of the year, would not materially differ from the actual figures reported.

6 Revenues from Contracts with Customers

6.1 Disaggregated Revenue Information

Set out below is the disaggregation of the Group's revenues from contracts with customers:

	Years ended December 31,		
(in millions €)	**2023**	**2022**	**2021**
Commercial revenues	**3,815.5**	**17,194.6**	**18,874.0**
COVID-19 vaccine revenues	3,776.2	17,145.2	18,806.8
Sales to collaboration partners	*275.3*	*1,224.3*	*970.9*
Direct product sales to customers	*473.6*	*3,184.7*	*3,007.2*
Share of collaboration partners' gross profit and sales milestones	*3,027.3*	*12,736.2*	*14,828.7*
Other sales	39.3	49.4	67.2
Research & development revenues from collaborations	**3.5**	**116.0**	**102.7**
Total	**3,819.0**	**17,310.6**	**18,976.7**

During the year ended December 31, 2023, revenues recognized from Pfizer Inc., or Pfizer (€3,293.0 million) and the German Federal Ministry of Health (€473.6 million), each account for more than 10% of total revenues. During the year ended December 31, 2022, revenues recognized from Pfizer (€13,795.8 million) and the German Federal Ministry of Health (€3,020.5 million) represented more than 10% of total revenues. During the year ended December 31, 2021, revenues recognized from Pfizer (€15,500.0 million) and the German Federal Ministry of Health (€1,945.6 million), accounted for more than 10% of total revenues. During the year ended December 31, 2023, based on the geographic region in which our customers and collaboration partners are located, we mainly recognized revenues in the United States (€3,010.9 million) and Germany (€482.7 million). During the year ended December 31, 2022, the main geographic regions were United States (€12,709.7 million) and Germany (€3,031.0 million). During the year ended December 31, 2021, the main geographic regions were United States (€14,636.5 million), Germany (€2,241.9 million) and Belgium (€675.0 million).

Commercial Revenues

During the year ended December 31, 2023, commercial revenues were recognized from the supply and sales of our COVID-19 vaccine worldwide. During the year ended December 31, 2023, our commercial revenues decreased in line with a lower COVID-19 vaccine market demand. In addition, write-downs by our collaboration partner Pfizer Inc. (Pfizer), significantly reduced our gross profit share and hence negatively influenced our revenues for the year ended December 31, 2023. We are the marketing authorization holder in the United States, the European Union, the United Kingdom, Canada and other countries, and holder of emergency use authorizations or equivalents in the United States

(jointly with Pfizer) and other countries. Pfizer has marketing and distribution rights worldwide with the exception of China, Germany and Türkiye. Shanghai Fosun Pharmaceutical (Group) Co., Ltd, or Fosun Pharma, has marketing and distribution rights in China, Hong Kong special administrative region, or SAR, Macau SAR and the region of Taiwan. The allocation of marketing and distribution rights defines territories in which the collaboration partners act as a principal.

Sales to Collaboration Partners

Sales to collaboration partners represent sales of products manufactured by us to collaboration partners. Whenever responsibilities in the manufacturing and supply process of the COVID-19 vaccine shift and the COVID-19 vaccine is transferred, the vaccine is sold from one partner to the other. Under the collaboration with Pfizer, from time to time, those sales are significantly influenced by amounts due to write-downs of inventories as well as costs related to production capacities derived from contracts with CMOs that became redundant. Those costs represent accrued manufacturing variances and are charged to our partner once finally materialized. These manufacturing variances are reflected as transfer price adjustments once identified. The regular reassessment of these manufacturing variances may result in adjustments to the respective prior-period revenues. Sales to collaboration partners during the years ended December 31, 2023, 2022 and 2021 of €74.5 million, €850.0 million and €31.0 million, respectively, related to the aforementioned manufacturing variances.

Direct Product Sales to Customers

Direct product sales are recognized from supplying COVID-19 vaccine in our territories Germany and Türkiye. During the years ended December 31, 2023, 2022 and 2021, we recognized €473.6 million, €3,184.7 million and €3,007.2 million of revenues, respectively. The share of gross profit that we owe our collaboration partner Pfizer based on our sales is recognized as cost of sales.

Share of Collaboration Partners' Gross Profit and Sales Milestones

Based on COVID-19 vaccine sales in the collaboration partners' territories, we are eligible to receive a share of their gross profit, which represents a seasonally affected net figure and is recognized as collaboration revenue during the commercial phase, together with sales milestones. Manufacturing cost variances either reflected as transfer price adjustments as described above or resulting from costs highly probable to be incurred by the partner, were taken into account when determining the gross profit. During the year ended December 31, 2021, those revenues included €476.6 million of sales milestones.

The revenues from contracts with customers disclosed above were recognized as follows:

(in millions €)	Years ended December 31, 2023	2022	2021
Timing of revenue recognition			
Goods and services transferred at a point in time	776.3	4,447.2	4,034.3
Goods and services transferred over time	15.4	127.2	113.7
Revenue recognition applying the sales-based or usage-based royalty recognition constraint model[(1)]	3,027.3	12,736.2	14,828.7
Total	**3,819.0**	**17,310.6**	**18,976.7**

(1) Represents sales based on the share of the collaboration partners' gross profit and sales milestones.

6.2 Contract Balances

(in millions €)	December 31, 2023	December 31, 2022
Trade and other receivables	2,155.7	7,145.6
Contract liabilities	751.8	125.5
Refund liabilities	—	24.4

Trade and other receivables significantly decreased compared to the previous year and predominantly comprise trade receivables from our COVID-19 collaboration with Pfizer as well as our direct product sales to customers in our territory. The contractual settlement of the gross profit share has a temporal offset of more than one calendar quarter. As Pfizer's financial quarter for subsidiaries outside the United States differs from ours, it creates an additional time lag between the recognition of revenues and the payment receipt. Consequently, as of December 31, 2023, our trade receivables included, in addition to the profit share for the fourth quarter of 2023, trade receivables which related to the gross profit share for the third quarter of 2023.

Contract liabilities significantly increased compared to the previous year as advance payments in connection with the amendment of the COVID-19 vaccine purchase agreement with the European Commission, or EC, were received. As of December 31, 2023, the contract liabilities included €386.4 million of such payments under our collaboration with Pfizer (COVID-19 vaccine), €302.3 million from the German Federal Ministry of Health and €62.3 million of remaining upfront fees from our collaboration agreement with Pfizer (Zoster) (as of December 31, 2022: €65.7 million of remaining upfront fees from collaboration and commercial supply agreements and €56.3 million of advance payments for future COVID-19 vaccine sales).

The refund liabilities recognized as of December 31, 2022, represented consideration which was refunded to the collaboration partner during the year ended December 31, 2023.

Set out below is the amount of revenue recognized for the periods indicated:

	Years ended December 31,		
(in millions €)	**2023**	**2022**	**2021**
Amounts included in contract liabilities at the beginning of the year	3.5	63.1	73.7

6.3 Performance Obligations

The contract liabilities allocated to the remaining performance obligations from collaboration or commercial supply agreements (unsatisfied or partially unsatisfied) as of year-end are as follows:

(in millions €)	**December 31, 2023**	**December 31, 2022**
Within one year	353.3	77.1
More than one year	398.5	48.4
Total	**751.8**	**125.5**

7 Income and Expenses

7.1 General Expenses

Cost of Sales

From the year ended December 31, 2022 to the year ended December 31, 2023, cost of sales decreased by €2,395.2 million or 80% from €2,995.0 million to €599.8 million, mainly due to recognizing lower cost of sales from our decreased COVID-19 vaccine sales, which included the share of gross profit that we owe our collaboration partner Pfizer based on our sales. In addition, cost of sales was impacted by expenses arising from inventory write-offs and expenses for production capacities derived from contracts with CMOs that became redundant. The effects were driven by reducing production capacities as well as further fostering the global production network with our collaboration partners during the year ended December 31, 2023. Based on the regulatory approval obtained with respect to our Omicron XBB.1.5-adapted monovalent COVID-19 vaccine during the third quarter of 2023, we reversed the initial write-down of pre-launch inventory recorded in research and development expensed to a maximum of the original cost of €46.9 million. Thereof €27.3 million resulted in cost of sales during the year ended December 31, 2023 as the respective inventory has been either sold or written down. The remainder is presented in inventories as of December 31, 2023 and amounted to €19.6 million. With respect to the year ended December 31, 2022 the amount was nil.

Research and Development Expenses

From the year ended December 31, 2022 to the year ended December 31, 2023, our research and development expenses increased by €246.1 million or 16% from €1,537.0 million to €1,783.1 million, mainly influenced by progressing clinical studies for pipeline candidates as well as by our newly acquired product candidates and the development of variant adapted COVID-19 vaccines. The increase was further driven by an increase in wages, benefits and social security expenses resulting from a significant increase in headcount.

Sales and Marketing Expenses

From the year ended December 31, 2022 to the year ended December 31, 2023, our sales and marketing expenses increased by €3.2 million or 5% from €59.5 million to €62.7 million, mainly due to increased expenses for setup and enhancement of commercial IT platforms and an increase in wages, benefits and social security expenses resulting from an increase in headcount.

General and Administrative Expenses

From the year ended December 31, 2022 to the year ended December 31, 2023, our general and administrative expenses increased by €13.3 million or 3% from €481.7 million to €495.0 million, mainly influenced by increased expenses for IT services as well as by wages, benefits and social security expenses resulting from an increase in headcount.

7.2 Other Operating Expenses

	Years ended December 31,		
(in millions €)	**2023**	**2022**	**2021**
Foreign exchange differences, net	252.0	—	—
Loss on derivative instruments at fair value through profit or loss	—	385.5	86.3
Litigation costs[1]	29.4	3.0	9.0
Other	11.6	21.5	8.1
Total	**293.0**	**410.0**	**103.4**

(1) Adjustments to prior-year figures relate to costs for external legal advice in connection with certain legal litigations from general and administrative expenses to other operating expense to reflect changes in internal reporting also in the external reporting.

During the year ended December 31, 2023, the other expenses increased compared to the year ended December 31, 2022, which was mainly derived from recognizing foreign exchange differences arising on operating items. The foreign exchange differences included in operating expenses primarily arose from valuing our U.S. dollar-denominated trade receivables which were mainly incurred under our COVID-19 collaboration with Pfizer, U.S. dollar-denominated trade payables as well as U.S. dollar-denominated other financial liabilities which mainly relate to obligations incurred from our license agreements.

During the year ended December 31, 2022, the other operating expenses increased compared to the year ended December 31, 2021, mainly from recording the change in fair value of foreign exchange forward contracts that were entered into during the year ended December 31, 2022, to manage some of our transaction exposures but were not designated as hedging instruments under IFRS.

7.3 Other Operating Income

	Years ended December 31,		
(in millions €)	**2023**	**2022**	**2021**
Gain on derivative instruments at fair value through profit or loss	67.6	—	5.7
Government grants	2.2	1.4	137.2
Foreign exchange differences, net	—	727.4	446.3
Other	35.2	86.5	9.2
Total	**105.0**	**815.3**	**598.4**

During the year ended December 31, 2023, the other income decreased compared to the year ended December 31, 2022, as foreign exchange differences arising on operating items changed from a positive effect to a negative effect, which is recorded in other operating expenses (see Note 7.2).

During the year ended December 31, 2022, the other income increased compared to the year ended December 31, 2021, which was mainly due to recognizing foreign exchange differences arising on operating items. The foreign exchange differences included in operating income primarily arose from valuing our U.S. dollar-denominated trade receivables which were mainly incurred under our COVID-19 collaboration with Pfizer, U.S. dollar-denominated trade payables as well as U.S. dollar-denominated other financial liabilities which mainly relate to obligations incurred from our license agreements.

7.4 Finance Income

	Years ended December 31,		
(in millions €)	**2023**	**2022**	**2021**
Interest income	357.6	48.5	1.5
Fair value adjustments of financial instruments measured at fair value	162.0	216.8	—
Foreign exchange differences, net	—	65.0	66.2
Total	**519.6**	**330.3**	**67.7**

During the year ended December 31, 2023, the finance income increased compared to the year ended December 31, 2022, mainly due to interest income earned on bank deposits and financial securities as well as fair value adjustments in relation to our money market funds.

During the year ended December 31, 2022, the finance income included the final fair value measurement adjustments of the derivative embedded within the convertible note upon the early redemption of the convertible note as of March 1, 2022, the redemption date, as well as interest income from our bank deposits and increased compared to the year ended December 31, 2021.

7.5 Finance Expenses

	Years ended December 31,		
(in millions €)	**2023**	**2022**	**2021**
Foreign exchange differences, net	16.0	—	—
Fair value adjustments of financial instruments measured at fair value	—	—	277.8
Other	7.9	18.9	27.3
Total	**23.9**	**18.9**	**305.1**

During the year ended December 31, 2023, the finance expenses increased compared to the year ended December 31, 2022, mainly due to exchange differences derived from our foreign exchange bank deposits and cash accounts.

During the year ended December 31, 2022, the finance expenses decreased compared to the year ended December 31, 2021, mainly due to final settlement of the derivative embedded within the convertible note which led to financial income whereas during the year ended December 31, 2021, expenses in the amount of €277.8 million were derived from the respective fair value measurement adjustment.

7.6 Employee Benefits Expense

	Years ended December 31,		
(in millions €)	**2023**	**2022**	**2021**
Wages and salaries	617.8	544.8	345.9
Social security costs	76.7	58.6	31.7
Pension costs	4.1	2.1	1.2
Total	**698.6**	**605.5**	**378.8**

Wages and salaries include, among other things, expenses for share-based payments.

8 Income Tax

Income tax for the years ended December 31, 2023, December 31, 2022, and December 31, 2021, comprised current income taxes, other taxes and deferred taxes. We are subject to corporate taxes, the solidarity surcharge and trade taxes. Our corporate tax rate in the reporting year remained unchanged (15.0%) as did the solidarity surcharge (5.5%) whereas the average trade tax rate changed resulting in a combined income tax rate of 27.1% in the year ended December 31, 2023 (during the years ended December 31, 2022 and 2021: 27.2% and 30.7%, respectively). Deferred taxes are calculated at a rate of 27.1%. Current taxes for Austria are calculated at a corporate tax rate of 24.0%. Austria's decrease of its corporate tax rate down to 23.0% in 2024 is be recognized from 2023 onwards for deferred taxes. BioNTech USA Holding, LLC is subject to Federal Corporate Income Tax (21.0%) as well as State Income Tax in various state jurisdictions (effective rate of 4.5%). The deferred tax rates calculations basis remained unchanged compared to the previous period.

The following table illustrates the current and deferred taxes for the periods indicated:

	Years ended December 31,		
(in millions €)	**2023**	**2022**	**2021**
Current income taxes	243.1	3,629.6	4,535.0
Deferred taxes	12.7	(109.9)	218.9
Income taxes	**255.8**	**3,519.7**	**4,753.9**

The following table reconciles the expected income taxes to the income tax expenses. The expected income taxes were calculated using the combined income tax rate of BioNTech SE applicable to the Group and mentioned above which was applied to profit before taxes to calculate the expected income taxes.

(in millions €)	Years ended December 31, 2023	2022	2021
Profit before tax	**1,186.1**	**12,954.1**	**15,046.4**
Expected tax credit	321.8	3,529.7	4,622.5
Effects			
Deviation due to local tax basis	6.6	8.9	9.1
Deviation due to deviating income tax rate (Germany and foreign countries)	(0.1)	7.3	9.4
Change in valuation allowance	(14.3)	30.6	3.0
Effects from tax losses and tax credits	(66.5)	23.2	19.5
Change in deferred taxes due to tax rate change	(2.4)	(2.3)	(7.5)
Non-deductible expenses	3.1	2.5	90.5
Non tax-effective income	(0.6)	(87.9)	(0.3)
Non tax-effective share-based payment expenses	7.7	8.7	15.5
Tax-effective equity transaction costs	—	—	(1.2)
Adjustment prior year taxes	5.5	(31.5)	(2.9)
Non-tax effective bargain purchase	—	—	(0.7)
Other effects	(5.0)	30.5	(3.0)
Income taxes	**255.8**	**3,519.7**	**4,753.9**
Effective tax rate	**21.6%**	**27.2%**	**31.6%**

On November 15, 2018, we established a share option program pursuant to which we were permitted to grant selected employees and our Management Board options to receive shares in the Company. The program is designed as an Employee Stock Ownership Plan, or ESOP. We offered the participants a certain number of rights, or option rights, subject to their explicit acceptance. Grants under the ESOP took place from November 2018 until December 2019. An exercise of option rights in accordance with the terms of the ESOP gives a participant the right to obtain shares against payment of the exercise price. By way of an updated decision of the Supervisory Board at the end of September 2022 compared to the initial settlement mechanism, an ESOP settlement may be made by delivery to the participant of such number of ADSs equal to the net value of the exercised option rights after deduction of (i) the exercise price and (ii) the applicable wage taxes (including solidarity surcharge thereon and church tax, if applicable) and social security contributions resulting from such exercise. The respective number of ADS shall be settled with ADS acquired in the course of the share repurchase program. The applicable wage taxes (including solidarity surcharge thereon and church tax, if applicable) and social security contributions resulting from such exercise are paid in cash directly to the respective authorities. Expenses for taxation purposes resulting from the settlement are only recognized once the option rights have been exercised. After considering the settlements in the twelve months ended December 31, 2023 and taking into account the recognition criteria of IAS 12, a deferred tax is not recognized in our consolidated statement of financial position of €17.8 million which relates to future settlements.

The current tax savings associated with the excess were directly recognized in equity in a total amount of €19.8 million. Considering these tax amounts directly recognized in equity when calculating an effective tax rate, the tax rate would be decreased by about 1.6 percentage points.

The intended settlement mechanism of Option Rights of the Chief Executive Officer Grant (see Note 16.4 for plan details) led to a deferred tax asset in the total amount of €108.8 million as of December 31, 2023. Taking into account the recognition criteria of IAS 12 this deferred tax asset is not recognized in our consolidated statements of profit or loss neither recognized directly in equity as other reserves in our consolidated statements of changes in stockholders' equity.

Taxes

Deferred taxes for the periods indicated relate to the following:

Year ended December 31, 2023

(in millions €)	January 1, 2023	Recognized in P&L	Recognized in OCI	Recognized directly in equity	December 31, 2023
Fixed assets	15.8	20.2	—	(44.4)	(8.4)
Right-of-use assets	(55.8)	(0.8)	—	—	(56.6)
Inventories	148.9	(35.3)	—	—	113.6
Trade and other receivables	(162.7)	72.7	—	—	(90.0)
Lease liabilities	55.2	2.0	—	—	57.2
Contract liabilities	(10.0)	(33.0)	—	—	(43.0)
Loans and borrowings	7.6	(2.8)	—	—	4.8
Net employee defined benefit liabilities	0.7	(0.1)	—	—	0.6
Share-based payments	188.4	12.0	—	(58.3)	142.1
Other provisions	11.0	(1.2)	—	—	9.8
Other (incl. deferred expenses)	61.5	(106.4)	—	—	(44.9)
Tax losses / tax credits	99.5	(5.1)	—	—	94.4
Deferred tax assets net (before valuation adjustment)	**360.1**	**(77.8)**	**—**	**(102.7)**	**179.6**
Valuation adjustment	(136.7)	65.1	—	(66.4)	(138.0)
Deferred tax assets / (liabilities), net (after valuation adjustment)	**223.4**	**(12.7)**	**—**	**(169.1)**	**41.6**
Thereof deferred tax assets	**229.6**	**20.8**	**—**	**(169.1)**	**81.3**
Thereof deferred tax liability	**(6.2)**	**(33.5)**	**—**	**—**	**(39.7)**

Year ended December 31, 2022

(in millions €)	January 1, 2022	Recognized in P&L	Recognized in OCI	Recognized directly in equity	December 31, 2022
Fixed assets	(6.5)	22.3	—	—	15.8
Right-of-use assets	(47.5)	(8.3)	—	—	(55.8)
Inventories	1.8	147.1	—	—	148.9
Trade and other receivables	(95.6)	(67.1)	—	—	(162.7)
Lease liabilities	48.7	6.5	—	—	55.2
Loans and borrowings	23.1	(15.5)	—	—	7.6
Contract liabilities	10.6	(20.6)	—	—	(10.0)
Net employee defined benefit liabilities	0.9	(0.5)	0.3	—	0.7
Other provisions	6.3	4.7	—	—	11.0
Share-based payments	—	8.5	—	179.9	188.4
Other (incl. deferred expenses)	1.6	59.9	—	—	61.5
Tax losses / tax credits	70.9	28.6	—	—	99.5
Deferred tax assets net (before valuation adjustment)	**14.3**	**165.6**	**0.3**	**179.9**	**360.1**
Valuation adjustment	(81.0)	(55.7)	—	—	(136.7)
Deferred tax assets / (liabilities), net (after valuation adjustment)	**(66.7)**	**109.9**	**0.3**	**179.9**	**223.4**

As of December 31, 2023, our accumulated tax losses comprised tax losses of German entities that were incurred prior to the establishment of a tax group with BioNTech SE or by entities that are not within the tax group (as of December 31, 2023: BioNTech Real Estate Verwaltungs GmbH; as of December 31, 2022: BioNTech BioNTainer Holding GmbH, BioNTech Idar-Oberstein Services GmbH, NT Security and Services GmbH, BioNTech Real Estate Verwaltungs GmbH and the Real Estate partnerships) or U.S. tax group. Up until the year ended December 31, 2022, our accumulated tax losses also comprised those of the German tax group. Our accumulated tax losses for the periods indicated amounted to the following:

	Years ended December 31,		
(in millions €)	**2023**	**2022**	**2021**
Corporate tax	260.7	352.3	272.0
Trade tax	140.1	204.1	170.6

	Years ended December 31,		
(in millions €)	**2023**	**2022**	**2021**
Federal tax credits	21.3	4.0	0.8
State tax credits	8.7	1.6	0.3

Up until the year ended December 31, 2023, deferred tax assets on tax losses were only partially recognized, as there was not sufficient probability in terms of IAS 12 that future taxable profits would have been available against which all the unused tax losses could have been utilized.

The amount of deductible temporary differences, unused tax losses, and unused tax credits for which no deferred tax asset is recognized in the statement of financial position as of December 31, 2023 is €531.5 million. Thus as of December 31, 2023, we have not recognized deferred tax assets for unused tax losses and temporary differences in an amount of €138.0 million (December 31, 2022: €136.7 million 31 December 2021 €81.0 million).

A reorganization of the intellectual property rights within the group became effective as of June 30, 2023 and July 1, 2023 which led to deferred tax effects in Germany, the U.S. and Austria. As a result, BioNTech SE recognized deferred tax assets and deferred tax income at the time of the transaction. In addition, this transaction led to a revaluation of previously unrecognized U.S. federal and state deferred tax assets, including unused tax losses and unused tax credits. As of December 31, 2022, there were unrecognized U.S. federal and state deferred tax assets of €128.9 million. As of December 31, 2023, it is considered highly probable that taxable profits for the U.S. tax group will be available against which the deferred tax assets can be utilized in the near future, fulfilling the requirements set out by IAS 12. Therefore we no longer continue to maintain the full non-recognition of deferred tax assets of our U.S. tax group as there will be future taxable profits available against which the unused tax losses and temporary differences can be utilized. As of December 31, 2023, we maintain the non-recognition of deferred tax assets for unused U.S. federal and state tax losses and tax credits at an amount of €31.9 million and €2.8 million, respectively, as there is not sufficient probability in terms of IAS 12 that future taxable income will be available against which these unused tax losses can be utilized. The material unrecognized U.S. federal and state tax losses and tax credits will begin to expire in 2036.

The Group does not recognize deferred tax liabilities for taxable temporary differences associated with investments in subsidiaries, in cases where the Group is able to control the timing of the reversal of the temporary difference and it is probable that the temporary differences will not reverse in the foreseeable future. The aggregate amount of temporary differences associated with investments in subsidiaries, for which deferred tax liabilities have not been recognized, is €2.8 million.

9 Earnings per Share

Basic earnings per share (EPS) is calculated by dividing the profit for the year attributable to ordinary equity holders of the parent by the weighted average number of ordinary shares outstanding during the year.

Diluted EPS is calculated by dividing the profit attributable to ordinary equity holders of the parent by the weighted average number of ordinary shares outstanding during the year, plus the weighted average number of ordinary shares that would be issued on conversion of all the dilutive potential ordinary shares into ordinary shares.

The following table reflects the income and share data used in the basic and diluted EPS calculations:

(in millions €, except per share data)	Years ended December 31, 2023	2022	2021
Profit attributable to ordinary equity holders of the parent for basic earnings	**930.3**	**9,434.4**	**10,292.5**
Weighted average number of ordinary shares outstanding for basic EPS	**240.6**	**243.3**	**244.0**
Effects of dilution from share options	2.1	6.5	15.7
Weighted average number of ordinary shares outstanding adjusted for the effect of dilution	**242.7**	**249.8**	**259.7**
Earnings per share			
Basic earnings for the period per share	3.87	38.78	42.18
Diluted earnings for the period per share	3.83	37.77	39.63

10 Other Intangible Assets and Goodwill

Goodwill

(in millions €) Acquisition costs	Goodwill
As of January 1, 2022	57.8
Currency differences	3.4
As of December 31, 2022	**61.2**
As of January 1, 2023	61.2
Acquisition of subsidiaries and businesses	306.9
Currency differences	(5.6)
As of December 31, 2023	**362.5**

IntangibleAssets with Indefinite Useful Lives

	CGU Immunotherapies		External Product Sales of JPT		External Business of InstaDeep		Total	
(in millions €)	As of December 31, 2023	As of December 31, 2022	As of December 31, 2023	As of December 31, 2022	As of December 31, 2023	As of December 31, 2022	As of December 31, 2023	As of December 31, 2022
Goodwill	352.2	60.7	0.5	0.5	9.8	—	362.5	61.2
Intangible assets with indefinite useful life	444.5	—	—	—	—	—	444.5	—
Total	**796.7**	**60.7**	**0.5**	**0.5**	**9.8**	**—**	**807.0**	**61.2**

For the year ended December 31, 2023, we have total goodwill of €362.5 million, which relates almost completely to the CGU immunotherapies. The CGU immunotherapies focuses on the development of therapies to address a range of rare and infectious diseases and comprises our broad pipeline that includes mRNA-based immune activators, antigen-targeting T cells and antibodies and defined immunomodulators of various immune cell mechanisms.

We performed our annual impairment test in October 2023.

The recoverable amount of the CGU immunotherapies has been determined based on a fair value less cost of disposal (FVLCD), which we derived based on our market capitalization as an observable input parameter.

The recoverable amount of the CGU JPT and the CGU external business of InstaDeep has been determined based on the value in use. In assessing value in use, the estimated future cash flows, which are derived based on the strategic business plan approved by the management, are discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the assets. A long-term growth rate of 1.0% is applied to project future cash flows after the last year of the detailed planning period.

As a result of the analysis in October 2023, we did not identify an impairment for these CGUs.

Intangible assets with indefinite useful lives mainly comprised intangible assets not yet available for use of €443.5 million. Such assets are not amortized and therefore reviewed for impairment annually. An impairment test was performed on an individual basis of the assets in the fourth quarter of 2023. The recoverable amounts were determined based on value in use. The results did not give rise to any impairment losses.

Considering updated financial information regarding our COVID 19 vaccine business an additional impairment test for our CGU immunotherapies was performed as of December 31, 2023. The recoverable amount of the CGU immunotherapies was once again determined based on a fair value less cost of disposal (FVLCD), which we derived based on our market capitalization as of December 31, 2023.

As a result of the additional analysis for the CGU immunotherapies, we did not identify an impairment for the CGU immunotherapies. Even if our market capitalization had been approximately 10% lower, FVLCD would have still been above the respective carrying amount of the CGU.

The intangible assets resulting from licensing and collaboration agreements are combined into one class of assets due to their similar nature and use in our operations and are attributed to the CGU immunotherapies.

A sensitivity analysis of the key assumptions, future cash flows and weighted average cost of capital, was performed as part of the scheduled impairment testing of the intangible assets not yet available for use. The sensitivity analysis did not give rise to any impairment loss, either for a reduction of 10% in future cash flows or for a 10% increase in the weighted average cost of capital.

Other Intangible Assets

(in millions €) **Acquisition costs**	**Concessions, licenses, in-process R&D and similar rights**	**Advance payments**	**Total**
As of January 1, 2022	191.6	7.8	199.4
Additions	22.8	11.4	34.2
Disposals	(0.1)	—	(0.1)
Reclassifications	6.1	(6.1)	—
Currency differences	1.9	—	1.9
As of December 31, 2022	**222.3**	**13.1**	**235.4**
As of January 1, 2023	222.3	13.1	235.4
Additions	489.2	15.8	505.0
Acquisition of subsidiaries and businesses	187.4	—	187.4
Disposals	(1.6)	(1.6)	(3.2)
Reclassifications	4.9	(4.9)	—
Currency differences	(3.6)	—	(3.6)
As of December 31, 2023	**898.6**	**22.4**	**921.0**

(in millions €) **Cumulative amortization and impairment charges**	**Concessions, licenses, in-process R&D and similar rights**	**Advance payments**	**Total**
As of January 1, 2022	**54.8**	**—**	**54.8**
Amortization	22.0	—	22.0
Disposals	(0.1)	—	(0.1)
Currency differences	0.2	—	0.2
As of December 31, 2022	**76.9**	**—**	**76.9**
As of January 1, 2023	76.9	—	76.9
Amortization	40.5	—	40.5
Disposals	(0.3)	—	(0.3)
Currency differences	(0.2)	—	(0.2)
As of December 31, 2023	**116.9**	**—**	**116.9**

(in millions €) **Carrying amount**	**Concessions, licenses, in-process R&D and similar rights**	**Advance payments**	**Total**
As of December 31, 2022	**145.4**	**13.1**	**158.5**
As of December 31, 2023	**781.7**	**22.4**	**804.1**

The increase in other intangible assets by €645.6 million from December 31, 2022 to December 31, 2023 was mainly related to the acquisition of InstaDeep (see Note 5) and licenses fulfilling the definition of identifiable assets acquired. We entered into license and collaboration agreements in which we work together with partners to develop pharmaceutical products and, provided regulatory approval is granted, commercialize them. The upfront payments in connection with the license and collaboration agreements described below resulted in the recognition of intangible assets not yet available for use in the amount of €443.5 million and a prepayment for future development activities recognized in the other non-financial assets (€22.5 million as at December 31, 2023, see also Note 14).

In March 2023, we entered into license and collaboration agreements with Duality Biologics (Suzhou) Co. Ltd., Shanghai, China, or Duality, for exclusive licenses to two investigational ADC assets (BNT323/DB-1303 and BNT324/DB-1311) directed against targets expressed in a broad range of human cancers. In August 2023, we signed another exclusive agreement with Duality to develop, manufacture and commercialize an additional ADC, BNT325/DB-1305. Duality received upfront payments totaling $220.0 million (€203.7 million) and is eligible to receive future milestone payments as well as tiered royalties.

In April 2023, we entered into a licensing and collaboration agreement with OncoC4 Inc., Rockville (Maryland), United States, or OncoC4, which includes joint development of BNT316/ONC-392 in a range of solid tumor indications, with the parties equally sharing development costs for such joint development studies. BioNTech holds the exclusive worldwide commercialization rights for this product candidate. OncoC4 received an upfront payment of $200.0 million (€181.5 million, thereof €125.2 million paid for the acquisition of an intangible asset) and is eligible to receive future milestone payments as well as tiered royalties.

In November 2023, we entered into a strategic research collaboration and worldwide license agreement with MediLink Therapeutics (Suzhou) Co., Ltd., or MediLink Therapeutics, for the development of a next-generation ADC, BNT326/YL202, against Human Epidermal Growth Factor Receptor 3 (HER3). MediLink Therapeutics received an upfront payment of $70.0 million (€64.1 million) and is eligible to receive future milestone payments as well as tiered royalties.

In December 2023, we entered into an exclusive global license and collaboration with Biotheus Inc., or Biotheus, under which we will be developing, manufacturing and commercializing Biotheus' bispecific antibody candidate BNT327/PM8002 globally ex-Greater China. We agreed to an upfront payment of $55.0 million (€50.6 million) plus future milestone and royalty payments.

In July 2023, in connection with the acquisition of InstaDeep we acquired DeepChain technology. As of December 31, 2023 the book value of DeepChain technology amounted to €163.3 million with a remaining useful life of 6.6 years.

11 Property, Plant and Equipment

(in millions €) **Acquisition and production costs**	**Land and buildings**	**Equipment, tools and installations**	**Construction in progress and advance payments**	**Total**
As of January 1, 2022	104.1	198.3	94.3	396.7
Additions	100.2	46.7	182.3	329.2
Disposals	—	(1.1)	(0.5)	(1.6)
Reclassifications	12.0	28.2	(40.2)	—
Currency differences	0.7	0.9	(0.4)	1.2
As of December 31, 2022	**217.0**	**273.0**	**235.5**	**725.5**
As of January 1, 2023	217.0	273.0	235.5	725.5
Additions	9.7	50.3	189.4	249.4
Acquisition of subsidiaries and businesses	—	2.1	—	2.1
Disposals	—	(2.4)	(0.2)	(2.6)
Reclassifications	9.3	22.3	(31.6)	—
Currency differences	(0.6)	(1.2)	(3.6)	(5.4)
As of December 31, 2023	**235.4**	**344.1**	**389.5**	**969.0**

(in millions €) **Cumulative depreciation and impairment charges**	**Land and buildings**	**Equipment, tools and installations**	**Construction in progress and advance payments**	**Total**
As of January 1, 2022	**14.2**	**60.0**	**—**	**74.2**
Depreciation	7.8	34.6	—	42.4
Disposals	—	(0.4)	—	(0.4)
Currency differences	—	0.1	—	0.1
As of December 31, 2022	**22.0**	**94.3**	**—**	**116.3**
As of January 1, 2023	22.0	94.3	—	116.3
Depreciation	14.4	83.3	—	97.7
Disposals	—	(1.7)	—	(1.7)
Currency differences	(0.2)	(0.3)	—	(0.5)
As of December 31, 2023	**36.2**	**175.6**	**—**	**211.8**

(in millions €) **Carrying amount**	**Land and buildings**	**Equipment, tools and installations**	**Construction in progress and advance payments**	**Total**
As of December 31, 2022	**195.0**	**178.7**	**235.5**	**609.2**
As of December 31, 2023	**199.2**	**168.5**	**389.5**	**757.2**

Non-Current Assets by Region

As of December 31, 2023, non-current assets comprised €158.2 million in other intangible assets, goodwill, property, plant and equipment, right-of-use assets and other assets of our subsidiaries incorporated in the United States (as of December 31, 2022: €188.0 million) as well as €511.7 million in the United Kingdom (as of December 31, 2022: nil), respectively. The remaining non-current assets of €1,469.0 million (as of December 31, 2022: €871.9 million) mainly relate to entities incorporated in Germany.

12 Financial Assets and Financial Liabilities

12.1 Capital Risk Management

Our capital management objectives are designed primarily to finance our growth strategy.

Our treasury committee reviews the total amount of cash and cash equivalents on a regular basis. As part of this review, the committee considers total cash and cash equivalents, cash outflow, currency translation differences and refinancing activities. We monitor cash using a burn rate. The cash burn rate is defined as the average monthly net cash flow from operating and investing activities during a financial year.

(in millions €)	December 31, 2023	December 31, 2022
Cash at banks and on hand	**453.1**	**1,325.2**
Cash equivalents	**11,210.6**	**12,549.9**
Bank deposits	2,589.5	9,401.0
Money market funds	7,446.1	3,148.9
Reverse Repo	1,175.0	—
Total	**11,663.7**	**13,875.1**

In general, the aim is to protect and maximize the financial resources available for further research and development projects.

Since December 1, 2021, we have an investment and asset management policy in place that contains policies and processes for managing cash and cash equivalents. Under this policy, our investment portfolio is to be maintained in a manner that minimizes risks to the invested capital. These risks include mainly credit risk and concentration risk. The portfolio must provide liquidity in a timely manner to accommodate operational and capital needs. The portfolio is managed by the Treasury department.

We are not subject to externally imposed capital requirements. Our capital management objectives were achieved in the years ended December 31, 2023, and 2022.

12.2 Categories of Financial Instruments

Financial Assets and Liabilities at Amortized Cost and at Fair Value through OCI and Profit or Loss

Set out below is an overview of financial assets and liabilities at amortized cost and at fair value through OCI and profit or loss, as of the dates indicated:

December 31, 2023

(in millions €)	Category[1]	Carrying amount	Level 1 (Fair value)	Level 2 (Fair value)	Level 3 (Fair value)	Total
Financial assets measured at fair value						
Money market funds	FVTPL	7,446.1	7,446.1	—	—	7,446.1
Non-listed equity investments	FVTOCI	27.1	—	—	27.1	27.1
Listed equity investments	FVTOCI	26.0	26.0	—	—	26.0
Financial assets not measured at fair value						
Trade and other receivables	AC	2,155.7	—	—	—	2,155.7
Security investments	AC	5,989.7	—	—	—	5,989.7
Other financial assets	AC	18.6	—	—	—	18.6
Bank deposits	AC	2,589.5	—	—	—	2,589.5
Reverse Repo	AC	1,175.0	—	—	—	1,175.0
Cash at banks and on hand	AC	453.1	—	—	—	453.1
Financial liabilities measured at fair value						
Foreign exchange forward contracts	FVTPL	0.4	—	0.4	—	0.4
Contingent consideration	FVTPL	38.8	—	—	38.8	38.8
Financial liabilities not measured at fair value						
Lease liabilities	n/a	216.7	—	—	—	216.7
Loans and borrowings	AC	2.3	—	—	—	2.3
Trade payables and other payables	AC	354.0	—	—	—	354.0
Other financial liabilities	AC	414.9	—	—	—	414.9

(1) Financial assets and liabilities categorized at amortized costs mainly correspond to fair value. Fair values are not disclosed because the book values represent a reasonable approximation of fair value. We do not make a disclosure for cash and cash equivalents, trade receivables and trade payables.

December 31, 2022

(in millions €)	Category[1]	Carrying amount	Level 1 (Fair value)	Level 2 (Fair value)	Level 3 (Fair value)	Total
Financial assets measured at fair value						
Foreign exchange forward contracts	FVTPL	183.7	—	183.7	—	183.7
Money market funds	FVTPL	3,148.9	3,148.9	—	—	3,148.9
Non-listed equity investments	FVTOCI	57.1	—	57.1	—	57.1
Listed equity investments	FVTOCI	20.0	20.0	—	—	20.0
Financial assets not measured at fair value						
Trade and other receivables	AC	7,145.6	—	—	—	7,145.6
Other financial assets	AC	8.8	—	—	—	8.8
Bank deposits	AC	9,401.0	—	—	—	9,401.0
Cash at banks and on hand	AC	1,325.2	—	—	—	1,325.2
Financial liabilities measured at fair value						
Contingent consideration	FVTPL	6.1	—	—	6.1	6.1
Financial liabilities not measured at fair value						
Lease liabilities	n/a	210.1	—	—	—	210.1
Loans and borrowings	AC	2.1	—	—	—	2.1
Trade payables and other payables	AC	204.1	—	—	—	204.1
Other financial liabilities	AC	785.1	—	—	—	785.1

(1) Financial assets and liabilities categorized at amortized costs mainly correspond to fair value. We do not make a disclosure for cash and cash equivalents, trade receivables and trade payables. Fair values are disclosed because the book values represent a reasonable approximation of fair value.

Equity investments designated at Fair Value through OCI

Financial investments in equity securities measured at fair value through other comprehensive income comprise the following effects:

(in millions €)	December 31, 2023	December 31, 2022
Net gain on equity instruments designated at fair value through other comprehensive income	3.7	10.5
Total	**3.7**	**10.5**

Measurement of fair values

The following table shows the valuation techniques used in measuring fair values for financial instruments in our consolidated statements of financial position, as well as the significant unobservable inputs used.

Type	Valuation technique	Significant unobservable inputs
Forward exchange contracts	Discounted cash flow using par method. Expected future cash flows based on foreign exchange forwards discounted over the respective remaining term of the contracts using the respective deposit interest rates and spot rates.	n/a
Non-listed equity investments	Quantitative and qualitative factors such as actual and forecasted results, cash position and financing round valuations.	• Actual and forecasted results • Cash position • Nature and pricing indication of latest financing round
Listed equity investments	Stock prices of the listed companies and applicable exchange rates, if the listing is in a foreign currency.	n/a
Money market funds	Quoted prices on an active market	n/a
Contingent consideration	Present value of expected future payments and reflecting changes in expected achievement of underlying performance parameters and compounding effects.	• Expected future payments • Applied cost of capital

12.3 Recurring Fair Values (Level 3)

The following table shows the recurring fair value measurement of the contingent considerations and the effect of the measurements on our consolidated statements of profit or loss for the current period.

(in millions €)	Contingent consideration
As of January 1, 2022	**6.1**
As of January 1, 2023	**6.1**
Purchases	31.8
Net effect on profit or loss	
Net change in fair value	0.9
As of December 31, 2023	**38.8**

The sensitivity of the fair values of contingent considerations in fair value level 3 to the significant, unobservable, variable input factors, with all other factors remaining constant, is shown in the following table:

Contingent consideration

Input factor	Change in assumptions	Change in fair value with increasing input factor (in millions €)	Change in fair value with decreasing input factor (in millions €)
Cash flow projections	10%	3.4	(3.4)
Discount rate	1%	(0.8)	0.8

The estimated fair value of non-listed equity investments would, for example, increase (decrease) if price of latest financing round were to increase (decrease) and the overall company value were higher (lower).

12.4 Financial Instruments Risk Management Objectives and Policies

Our financial liabilities mainly comprise obligations derived from license agreements, trade and other payables, lease liabilities, contingent consideration, loans and borrowings, hedging liabilities as well as other financial liabilities. The main purpose of these financial liabilities is to enable our operations. Our principal financial assets include mainly cash, security investments and trade receivables that derive directly from our operations.

We are exposed to market risk, credit risk and liquidity risk. Our Management Board oversees the management of these risks.

The treasury committee provides assurance to our Management Board that our financial risk activities are governed by appropriate policies and procedures and that financial risks are identified, measured and managed in accordance with our policies and risk objectives. The Management Board reviews and agrees policies for managing each of these risks, which are summarized below.

12.5 Market Risks

Market risks address the risks that the fair value or future cash flows of a financial instrument will fluctuate due to changes in market prices. Market risks comprise three types of risk: interest risks, foreign currency risks and other price risks. Financial instruments affected by market risks include financial assets such as security investments, trade and other receivables, cash and cash equivalents as well as financial liabilities such as trade payables and other financial liabilities. We do not consider interest risks as well as other price risks as material risks to us.

There were no material changes in the way the risks were managed and valued during the years ended December 31, 2023, and 2022. Because of the significantly higher cash balance and security investments – the market risk exposure on counterparty risk increased compared to the previous period.

Foreign Currency Risks

Foreign currency risks address the risks that the fair value or future cash flows of an exposure will fluctuate because of changes in foreign exchange rates. We are subject to currency risks, as our income and expenditures are denominated in Euro and the U.S. dollar. As such, we are exposed to exchange rate fluctuations between these currencies. Cash inflows denominated in U.S. dollar mainly result from generating proceeds under our collaboration agreements. Our commercial revenues are primarily collaboration revenues from earnings based on our partners' gross profit, which is shared under the respective collaboration agreements and represents payments we receive in U.S. dollar. Cash outflows dominated in U.S. dollar mainly result from amounts spent on research and development activities and license obligations as well as expanding our global footprint further. With the aim of preserving capital, surplus liquidity is mainly invested in domestic currency investments as exchange rate fluctuations can reduce the value of our financial positions. We limit the effects of the identified risks by means of a coordinated and consistently implemented risk strategy. Besides applying natural hedging relationships where possible, foreign exchange forward contracts are concluded, as a matter of principle, as instruments to mitigate foreign currency exchange risk associated with foreign currency-denominated payments. However, the foreign exchange forward contracts which we entered into were not designated as hedging instruments under IFRS.

The carrying amount of the monetary assets and liabilities denominated in U.S. dollar at the dates indicated are as follows:

(in millions €)	December 31, 2023	December 31, 2022
Cash and cash equivalents in U.S. dollar	122.6	1,487.4
Monetary assets in U.S. dollar	1,191.9	7,098.5
Monetary liabilities and provisions in U.S. dollar	567.3	1,527.8
Total	**747.2**	**7,058.1**

The following tables demonstrate the sensitivity to a reasonable, possible change in U.S. dollar exchange rates or U.S. dollar forward rates, with all other variables held constant. The impact on our profit before tax is due to changes in the fair value of monetary assets and liabilities. The exposure to foreign currency changes for all other currencies is not material.

Currency	Country	*1 € =* Closing rate 2023	Closing rate 2022	Average rate 2023	Average rate 2022
U.S. dollar	United States	1.1050	1.0666	1.0813	1.0530

(in millions €)	Change in U.S. dollar rate	Effect on profit / (loss) before tax	Effect on pre-tax equity
2023	+5%	(35.5)	(35.5)
	-5%	39.2	39.3
2022	+5%	(195.2)	(191.5)
	-5%	215.7	211.7

12.6 Credit Risk Management

Credit risks address the risks that a counterparty will not meet its obligations under a financial instrument or customer contract, leading to a financial loss. We are exposed to credit risks from our operating activities, including security investments, bank deposits, reverse repos, foreign exchange transactions, trade and other receivables and cash at banks. The maximum exposure to credit risk for the components of the consolidated statements of financial position as of December 31, 2023, and December 31, 2022, are the carrying amounts as illustrated in Note 12.1 and Note 12.2.

Security Investments, Bank Deposits, Reverse Repos and Cash at banks

Our financial management is dedicated predominantly to the goal of capital preservation. Thus, all our financial activities are focused towards avoiding risks and, where they cannot be avoided, actively managing and minimizing them. Credit risks from balances with security investments, bank deposits, reverse repos and cash at banks are managed by our Treasury department in accordance with our investment and asset management policy.

Our security investments are solely invested in the highest-quality liquid assets (e.g. core European sovereign, supranational and agency bonds) and bank deposits with a maturity of more than 3 months (held at selected banks, exclusively rated as investment grade). They do not bear any currency risks or material credit risks. The bank deposits are held at selected banks, exclusively rated as investment grade. We limit our investment engagements individually and track each credit risk continuously. For reverse repos, only investment-grade counterparties qualify as our business partners and even secured investments are solely collateralized by high-quality liquid assets.

Accordingly, credit risks from these financial assets are limited. Before entering into new business relationships and during ongoing business relationships, we evaluate our business partners with regard to their individual default risk. Therefore, we do not presume an increased credit risk as of the balance sheet date and determine the impairment loss based on the upcoming twelve months.

The calculated expected credit losses were not material as of December 31, 2023, and December 31, 2022.

Trade and Other Receivables

Our exposure to credit risks of trade and other receivables is primarily related to transactions with corporate customers in the biopharma / biotech industry that operate in the United States or Germany, as well as governments which are customers, in connection with fulfilling our commercial obligations in our territories as defined in our contracts with customers. An analysis of the aging of receivables and the creditworthiness of customers is used to evaluate this risk at each reporting date. We follow risk control procedures to assess the credit quality of our customers taking into account their financial position, past experience and other factors.

As of December 31, 2023, outstanding trade and other receivables were mainly due from our collaboration partner Pfizer. Besides well-established pharmaceutical companies and governmental institutions, our other customers – to a smaller extent – are medical universities, other public institutions and peers in the biopharma industry, which have good credit ratings. Due to this customer portfolio, the credit risk on trade and other receivables is generally very low. We have not incurred material bad debt expense and do not expect that this will change with respect to the trade and other receivables outstanding as of December 31, 2023.

The expected credit risk on trade and other receivables derived from applying the simplified approach in calculating expected credit losses was not material as of December 31, 2023, and December 31, 2022.

12.7 Liquidity Risk

We plan to invest heavily in R&D as we make a strong drive to build out our global development organization and diversify our therapeutic area footprint. Additionally, we plan to enhance capabilities through complementary acquisitions, technologies, infrastructure and manufacturing. Our liquidity management ensures the availability of cash and cash equivalents, short term financial instruments for operational activities and further investments through appropriate budget planning. In addition, a sufficient level of cash and cash equivalents, which are managed centrally, is always maintained to finance the operational activities.

We monitor liquidity risks using a liquidity planning tool.

Ultimately, the responsibility for liquidity risk management lies with our Management Board, which has established an appropriate approach to managing short-, medium- and long-term financing and liquidity requirements. We manage liquidity risks by holding appropriate reserves based on our COVID-19 sales, as well as by monitoring forecasted and actual cash flows and reconciling the maturity profiles of financial assets and liabilities. Significant reserves currently exist and were generated during the Covid-19 pandemic.

Risk Concentration

Concentrations arise when the number of counterparties is small or when a larger number of counterparties is engaged in similar business activities, or activities in the same geographical region, or has economic features that would cause their ability to meet contractual obligations to be affected similarly by changes in economic, political or other conditions. Concentrations indicate the relative sensitivity of our performance to developments affecting a particular industry. We only have a limited number of customers mainly comprising pharmaceutical companies and governmental institutions.

The maturity profile of our financial liabilities based on contractual undiscounted payments is summarized as follows:

Year ended December 31, 2023

(in millions €)	Less than 1 year	1 to 5 years	More than 5 years	Total
Loans and borrowings	—	2.3	—	**2.3**
Trade and other payables	354.0	—	—	**354.0**
Lease liabilities	34.1	136.6	73.7	**244.4**
Contingent consideration	—	57.5	0.3	**57.8**
Foreign exchange forward contracts	0.4	—	—	**0.4**
Other financial liabilities	414.9	—	—	**414.9**
Total	**803.4**	**196.4**	**74.0**	**1,073.8**

Year ended December 31, 2022

(in millions €)	Less than 1 year	1 to 5 years	More than 5 years	Total
Loans and borrowings	—	2.1	—	**2.1**
Trade and other payables	204.1	—	—	**204.1**
Lease liabilities	40.5	112.9	79.1	**232.5**
Contingent consideration	—	—	6.1	**6.1**
Other financial liabilities	785.1	—	—	**785.1**
Total	**1,029.7**	**115.0**	**85.2**	**1,229.9**

12.8 Changes in Liabilities Arising from Financing Activities

Year ended December 31, 2023

(in millions €)	January 1, 2023	Cash flows	New leases and disposals	Reclassification	Other	December 31, 2023
Current obligations under lease contracts	36.0	(40.3)	(0.6)	34.1	(1.1)	**28.1**
Non-current obligations under lease contracts	174.1	—	51.1	(34.1)	(2.5)	**188.6**
Loans and borrowings	2.1	0.2	—	—	—	**2.3**
Total	**212.2**	**(40.1)**	**50.5**	**—**	**(3.6)**	**219.0**

Year ended December 31, 2022

(in millions €)	January 1, 2022	Cash flows	New leases and disposals	Reclassification	Other	December 31, 2022
Current obligations under lease contracts	27.9	(41.1)	14.8	33.3	1.1	**36.0**
Non-current obligations under lease contracts	153.7	—	52.6	(33.3)	1.1	**174.1**
Loans and borrowings	119.9	(18.0)	—	—	(99.8)[1]	**2.1**
Convertible note – embedded derivative	308.7	—	—	—	(308.7)[1]	—
Total	**610.2**	**(59.1)**	**67.4**	**—**	**(406.3)**	**212.2**

(1) Related to the early redemption of our convertible note during the year ended December 31, 2023, as further described in Note 15.

13 Inventories

(in millions €)	December 31, 2023	December 31, 2022
Raw materials and supplies	347.5	409.7
Unfinished goods	4.0	21.0
Finished goods	6.2	8.9
Total	**357.7**	**439.6**

During the year ended December 31, 2023 expenses from inventory write-downs to net realizable value due to inventories expected to be unsellable, not fulfilling the specification defined by our quality standards, shelf-life expiry or disposals resulted in €94.5 million, compared to €484.6 million in the previous period. The inventories valued at net realizable value in our consolidated statements of financial position as of December 31, 2023, take contractual compensation payments into consideration. We have not pledged any inventories as securities for liabilities. During the years ended December 31, 2023, and 2022, costs of inventories in the amount of €354.4 million and €1,550.6 million, respectively, were recognized as cost of sales.

14 Other Non-Financial Assets

(in millions €)	December 31, 2023	December 31, 2022
Deferred expenses	313.2	120.0
Sales tax receivable	5.2	93.8
Prepayments related to CRO and CMO contracts	—	35.3
Other	45.9	29.3
Total	**364.3**	**278.4**
Total current	280.9	271.9
Total non-current	83.4	6.5

Deferred expenses mainly comprise prepayments for future expenses of €151.1 million (nil as of December 31, 2022) for the settlement fee of the European Commission to our collaboration partner and prepayments for our collaborations with OncoC4 Inc., Rockville, USA, €22.5 million (nil as of December 31, 2022), Ryvu Therapeutics S.A., Krakau, Poland, €15.7 million (€19.7 million as of December 31, 2022) and Medigene Immunotherapies GmbH, Planegg/Martinsried, €5.1 million (€9.4 million as of December 31, 2022). Prior year deferred expenses mainly comprise service contracts and insurance obligations.

15 Issued Capital and Reserves

As of December 31, 2023, the number of shares outstanding was 237,725,735. This amount excludes 10,826,465 shares held in treasury. For the year ended December 31, 2022, the number of shares outstanding was 243,215,169, excluding 5,337,031 shares held in treasury.

Capital Transactions During the Year Ended December 31, 2023

In March 2022, our Management Board and Supervisory Board authorized the 2022 share repurchase program of ADSs, pursuant to which we were permitted to repurchase ADSs, each representing one ordinary share, with a value of up to $1.5 billion a two-year period, commencing on May 2, 2022. The first tranche of our 2022 share repurchase program of ADSs, with a value of up to $1.0 billion, concluded on October 10, 2022. The second tranche with a value of up to $0.5 billion commenced on December 7, 2022 and concluded on March 17, 2023.

The following repurchases under the programs occurred:

2022 Program first tranche ($1.0 billion)

Period	Number of ADSs purchased	Average price paid per ADS	Net amount spent (in millions)
May 2022	917,988	$ 151.76 (€143.99)	$139.3 (€132.2)
June 2022	1,160,219	$ 140.82 (€133.35)	$163.4 (€154.7)
July 2022	519,320	$ 162.03 (€159.40)	$ 84.1 (€82.8
August 2022	1,666,515	$ 149.08 (€148.24)	$248.4 (€247.0)
September 2022	2,280,988	$ 135.95 (€137.66)	$310.1 (€314.0)
October 2022	400,483	$ 136.37 (€139.09)	$ 54.6 (€55.7)
Total	**6,945,513**		**$999.9 (€986.4)**

2022 Program second tranche ($0.5 billion)

Period	Number of ADSs purchased	Average price paid per ADS	Net amount spent (in millions)
January 2023	618,355	$ 142.26 (€131.12)	$ 88.0 (€81.1)
February 2023	857,620	$ 138.05 (€129.06)	$118.4 (€110.7)
March 2023	745,196	$ 128.49 (€121.08)	$ 95.7 (€90.2)
Total	**2,221,171**		**$302.1 (€282.0)**

In March 2023, our Management Board and Supervisory Board authorized the 2023 share repurchase program, under which we were permitted to purchase ADSs, each representing one ordinary share, with a value of up to $0.5 billion, which started June 2, 2023 and concluded on September 18, 2023.

The following repurchases under the programs occurred:

Program 2023 ($0.5 billion)

Period	Number of ADSs purchased	Average price paid per ADS	Net amount spent (in millions)
June 2023	1,532,685	$ 108.92 (€100.45)	$166.9 (€154.0)
July 2023	1,738,061	$ 107.92 (€97.57)	$187.6 (€169.6)
August 2023	1,261,706	$ 105.07 (€95.85)	$132.6 (€120.9)
September 2023	114,513	$ 112.22 (€105.07)	$ 12.9 (€12.0)
Total	**4,646,965**		**$500.0 (€456.5)**

Capital Transactions During the Year Ended December 31, 2022

In January 2022, we announced a new research, development and commercialization collaboration with Pfizer to develop potentially the first mRNA-based vaccine for the prevention of shingles (herpes zoster virus, or HZV). In connection with this collaboration, Pfizer agreed to make an equity investment in us, acquiring 497,727 ordinary shares paying a total amount of €110.6 million. The issuance of 497,727 ordinary shares with the nominal amount of €0.5 million was registered with the commercial register (Handelsregister) on March 24, 2022. The equity investment, which was issued in a foreign currency, represents a derivative from the date of signing until the date of closing of the transaction. From the fair value measurement of this derivative, €43.0 million were recognized in finance income in our consolidated statements of profit or loss during the year ended December 31, 2022. At the closing date, in February 2022, this derivative and the agreed investment amount were recognized in our capital reserve and, taking an increase in share capital of €0.5 million into account, led to a net increase of the capital reserve of €67.1 million in our consolidated statements of financial position.

In March 2022, we redeemed our convertible note by exercising our early redemption option (see Note 12), which was fulfilled in April 2022, by issuing 1,744,392 ordinary shares. The nominal amount of €1.8 million was recorded in share capital and, finally, as a result of the transaction, the capital reserve increased by €233.2 million in our consolidated statements of financial position. The declaratory registration with the commercial register (Handelsregister) was made on May 20, 2022.

In June 2022, at the Annual General Meeting, our shareholders approved the proposed special cash dividend of €2.00 per ordinary share (including those held in the form of ADSs), which led to an aggregate payment of €484.3 million.

In November and December 2022, the ESOP 2018 and LTI-plus awards were settled by transferring ordinary shares previously held in treasury to the entitled employees and Management Board members (see Note 16).

16 Share-Based Payments

During the years ended December 31, 2023, 2022, and 2021, our share-based payment arrangements led to the following expenses:

		Years ended December 31,		
(in millions €)	Note	2023	2022	2021
Expense arising from equity-settled share-based payment arrangements		44.1	46.5	61.0
Employee Stock Ownership Plan	16.5	—	*13.8*	*20.2*
Chief Executive Officer Grant	16.4	*1.2*	*3.1*	*5.9*
Management Board Grant[1]	16.3	*3.2*	*4.3*	*2.4*
BioNTech 2020 Employee Equity Plan for Employees Based Outside North America	16.1	*36.3*	*25.3*	*32.5*
InstaDeep Employee Incentive Plan[2]		*3.4*	—	—
Expense / (Income) arising from cash-settled share-based payment arrangements		*7.3*	*61.5*	*32.7*
Employee Stock Ownership Plan	16.5	*(0.9)*	*53.4*	*6.3*
Management Board Grant[1]	16.2, 16.3	*(2.4)*	—	*3.6*
BioNTech Restricted Stock Unit Plan for North America Employees	16.1	*10.6*	*8.1*	*22.8*
Total		**51.4**	**108.0**	**93.7**
Cost of sales		6.5	3.0	7.0
Research and development expenses		33.4	84.6	60.5
Sales and marketing expenses		1.0	0.8	0.5
General and administrative expenses		10.5	19.6	25.7
Total		**51.4**	**108.0**	**93.7**

(1) In May 2021 and 2022, phantom options were granted under the Management Board Grant for the years 2021 and 2022 which led to a modification from an equity-settled to cash-settled share-based payment arrangement and a reclassification of €1.1 million and €3.3 million between equity and non-current other liabilities, respectively. Expenses incurred before and after the modification dates have been disclosed as equity-settled or cash-settled share-based payment arrangement, respectively. The amount includes expenses incurred with respect to a one-time signing bonus granted to Jens Holstein as of his appointment to the Management Board (see Note 21.2).

(2) As part of the acquisition of InstaDeep (see Note 5), it was agreed to issue long-term equity awards with a total target incentive value of £15.0 million, each for options and RSUs. The allocation shall be made in a manner consistent with BioNTech's existing share-based payment arrangements. The arrangement was communicated to the employees as part of the acquisition but relates to future services. Following the rules of IFRS 2, starting with the service commencement date during the year ended December 31, 2023 and in advance of the grant date, expenses were recorded based on the estimated grant date fair values and numbers of equity instruments.

During the years ended December 31, 2023, 2022 and 2021, our share-based payment arrangements led to a cash outflow of €766.2 million, €51.8 million and €13.4 million, respectively. We expect to settle the equity-settled share-based payment arrangements of our 2020 Management Board Grant (see Note 16.3), the Chief Executive Officer Grant (see Note 16.4) and the Employee Stock Ownership Plan (see Note 16.5) on a net basis by delivering to the participant

a number of ADSs equal to the net value of the exercised option rights after deduction of (i) the exercise price and (ii) the applicable wage taxes (including solidarity surcharge thereon and church tax, if applicable) and social security contributions resulting from such exercise. This reduces the dilutive impact of the respective rights compared to an all-equity settlement. If all of the equity-settled rights outstanding as of December 31, 2023, were to be exercised accordingly, the cash outflow to the tax authority in 2024 would amount to approximately €213.0 million (based on the share price as of December 31, 2023).

16.1 BioNTech Employee Equity Plan

BioNTech 2020 Employee Equity Plan for Employees Based Outside North America (Equity-Settled)

Description of Share-Based Payments

In December 2020, we approved the BioNTech 2020 Employee Equity Plan for employees based outside North America, or the European Plan. Under the European Plan, Restricted Stock Units, or RSUs, are offered to our employees.

Award agreements were entered as of the respective grant dates in February 2021 (LTI 2020 and LTI-plus program), January 2022 (LTI 2021 program) and December 2022 (LTI 2022 program). RSUs issued under the LTI 2020, LTI 2021 and LTI 2022 programs vest annually in equal installments over respective waiting periods of four years, commencing in December 2020, December 2021 and December 2022, respectively. RSUs issued under the LTI-plus program vested annually in equal installments over the waiting period of two years, which elapsed in December 2022. Hence, during the year ended December 31, 2022, the LTI-plus awards were settled by transferring shares previously held in treasury, see Note 15. All programs were classified as equity-settled as we have the ability to determine the method of settlement.

Measurement of Fair Values

The fair values of the awards issued under the European Plan were based upon the price of our ADSs representing ordinary shares at the grant date.

Reconciliation of Outstanding Share-Options

	LTI-plus program	LTI 2020 program	LTI 2021 program	LTI 2022 program
As of January 1, 2022	372,011	242,416	110,036	—
Forfeited / Modified	(7,932)	(7,111)	(5,428)	—
Granted / Allocated	—	—	—	396,110
Settled[1]	(364,079)	—	—	—
As of December 31, 2022	**—**	**235,305**	**104,608**	**396,110**
As of January 1, 2023	—	235,305	104,608	396,110
Forfeited / Modified	—	(4,400)	(3,497)	(16,141)
As of December 31, 2023	**—**	**230,905**	**101,111**	**379,969**
thereof vested	—	*175,523*	*51,905*	*96,466*
thereof unvested	—	*55,382*	*49,206*	*283,503*

(1) The closing price of an American Depositary Share of BioNTech on Nasdaq on December 15, 2022, the settlement date, converted from USD to Euro using the exchange rate published by the German Central Bank (Deutsche Bundesbank) on the same day was €171.40.

Inputs Used in Measurement of the Fair Values at Grant Dates

	LTI-plus program	LTI 2020 program	LTI 2021 program	LTI 2022 program
Weighted average fair value	87.60	92.21	203.22	165.03
Waiting period (in years)	2.0	4.0	4.0	4.0

BioNTech 2020 Restricted Stock Unit Plan for North America Employees (Cash-Settled)

Description of Share-Based Payments

In December 2020, we approved the BioNTech 2020 Restricted Stock Unit Plan for North America Employees, or the North American Plan. Under the North American Plan, RSUs are offered to our employees. These RSUs vest over four years, with 25% vesting one year after the service commencement date and the remainder vesting in equal quarterly installments thereafter. The first awards under the North American Plan were granted in February 2021. The service date for these awards is the date as of which the employee became employed by BioNTech US. During the years ended December 31, 2023, and 2022, further awards were granted under the North American Plan, which included awards granted to new-hire employees and ongoing, recurring awards to existing employees on the approximate anniversary of each employee's start date of employment with BioNTech US. As these RSUs are intended to be cash-settled upon vesting, the awards were defined as a cash-settled share-based payment arrangement. During the years ended December 31, 2023, 2022 and 2021, the exercise of RSUs resulted in a cash outflow of €10.0 million, €9.4 million and €10.1 million, respectively.

As of December 31, 2023, the liability related to these awards amounted to €14.4 million (€13.4 million as of December 31, 2022).

16.2 Management Board Grant – Short-Term Incentive (Cash-Settled)

Management Board's service agreements also include a short-term incentive compensation component, which is an annual performance-related bonus for the years of their respective service periods.

50% of those yearly awards are paid out one year after the achievement of the performance targets for the respective bonus year has been determined, subject to an adjustment relative to the performance of the price of the American Depositary Shares representing our ordinary shares during that year (second installment). The second installments represent cash-settled share-based payment arrangements. The fair values of the liabilities are recognized over the awards' vesting periods beginning when entering or renewing service agreements, i.e., the service commencement date, until each separate determination date and are remeasured until the settlement date. As of December 31, 2023, the liability related to these awards amounted to €2.1 million (€2.3 million as of December 31, 2022).

16.3 Management Board Grant Long-Term Incentive (Partly Equity-Settled, Partly Cash-Settled)

Description of Share-Based Payments

Our Management Board's service agreements provide for long-term incentive compensation (Management Board Grant - LTI) through an annual grant of options to acquire BioNTech shares during their respective service periods. The options granted each year are subject to the terms and conditions of the respective authorizations of the Annual General Meeting creating our Employee Stock Ownership Plan (ESOP) and the applicable option agreements thereunder.

The options vest annually in equal installments over four years commencing on the first anniversary of the allocation date and are exercisable four years after the allocation date. The vested options can only be exercised if each of the following performance criteria has been achieved: (i) at the time of exercise, the current price is equal to or greater than the threshold amount (that is, the exercise price, provided that such amount increases by seven percentage points on each anniversary of the allocation date); (ii) at the time of exercise, the current price is at least equal to the target price (that is, (a) for the twelve-month period starting on the fourth anniversary of the allocation date, $8.5 billion divided by the total number of the ordinary shares outstanding immediately following the initial public offering (other than ordinary shares owned by BioNTech), and (b) for each twelve-month period starting on the fifth or subsequent anniversary of the allocation date, 107% of the target share price applicable for the prior twelve-month period); and (iii) the closing price for the fifth trading day prior to the start of the relevant exercise window is higher than the exercise price by at least the same percentage by which the Nasdaq Biotechnology Index or a comparable successor index as of such time is higher than such index was as of the last trading day before the allocation date. Following the expiry of the waiting period, option rights may be exercised during the exercise windows as set out in the ESOP agreement. The option rights can be exercised up to ten years after the allocation date. If they have not been exercised by that date, they will be forfeited without compensation.

The right to receive options generally represents an equity-settled share-based payment arrangement. The allocation of the number of issued options in 2020 occurred in February 2020. In May 2021 and May 2022, the Management Board received phantom options equivalent to the number of options the Management Board members would have been entitled to receive for 2021 and 2022, which led to a modification from equity-settled to cash-settled share-based payment arrangement and a reclassification of €1.1 million and €3.3 million between equity and non-current other liabilities as of the respective allocation dates. During 2023, options were granted in May 2023.

Measurement of Fair Values

A Monte-Carlo simulation model has been used to measure the fair values at the (estimated) allocation dates of the Management Board Grant. This model incorporates the impact of the performance criteria regarding share price and index development described above. The parameters used for measuring the fair values as of the respective (estimated) allocation dates were as follows:

	Allocation date February 2020	Allocation date May 12, 2021[1]	Allocation date May 17, 2021[1]	Allocation date May 2022[1]
Weighted average fair value	€ 10.83	€ 29.05	€ 27.64	€ 38.88
Weighted average share price	€ 28.20	€ 168.44	€ 179.46	€ 147.84
Exercise price[2]	€ 28.32	€ 167.63	€ 169.08	€ 137.65
Expected volatility	36.6%	49.7%	49.7%	49.7%
Expected life (years)	4.8	4.6	4.6	5.8
Risk-free interest rate	1.6%	3.9%	3.9%	3.9%

(1) Classified as cash-settled share-based payment arrangement; all other share-based payment arrangements are classified as equity-settled.
(2) The share options allocated as of February 2020 and May 2023 as well as the phantom share options allocated as of May 2021 and 2022 are subject to an effective exercise price cap.

	Allocation date May 2023	Estimated allocation date 2024	Estimated allocation date 2025	Estimated allocation date 2026
Weighted average fair value[1]	€ 46.29	€ 43.67	€ 39.97	€ 32.86
Weighted average share price[1]	€ 98.93	€ 95.51	€ 95.51	€ 95.51
Exercise price[1]	€ 105.42	€ 96.82	€ 99.74	€ 105.13
Expected volatility	47.2%	47.7%	43.0%	36.8%
Expected life (years)[1]	5.8	5.8	5.8	5.8
Risk-free interest rate	3.7%	3.9%	3.9%	3.9%

(1) Valuation parameter for estimated allocation dates derived from the Monte-Carlo simulation model.

For the awards with estimated allocation dates, the exercise prices of options expected to be allocated have been derived from the Monte-Carlo simulation model. Those will be adjusted until the actual allocation has occurred and the exercise price has ultimately been determined.

All options are subject to an effective exercise price cap, which means that the exercise price shall be adjusted to ensure that the current price of an ADS as of the exercise date does not exceed 800% of the exercise price. With respect to the LTI 2020 agreement, the maximum economic benefit receivable in respect of any exercised option is capped at $246.24, with the effective exercise price being capped at a Euro amount equivalent to $30.78. With respect to the phantom share options issued under the LTI 2021 and 2022 as well as the options issued under the LTI 2023 programs, the maximum compensation that the Management Board members are entitled to receive under such programs, together with other compensation components received by each such board member in the respective grant year, shall not exceed €20.0 million for Ugur Sahin as Chief Executive Officer (CEO) and €10.0 million for all other Management Board members.

Expected volatility was based on an evaluation of the historical volatilities of comparable companies over the historical period commensurate with the expected option term. The expected term was based on general option holder behavior for employee options.

Reconciliation of Outstanding Share-Options

The (phantom) share options allocated and expected to be allocated to our Management Board as of December 31, 2023, are presented in the table below.

	Allocation date February 2020	Allocation date May 12, 2021[1]	Allocation date May 17, 2021[1]	Allocation date May 2022[1]
(Phantom) share options outstanding	248,096	45,279	6,463	86,118
thereof allocated and vested but subject to performance and waiting requirements	*186,072*	*22,640*	*3,232*	*21,531*
thereof allocated and unvested	*62,024*	*22,639*	*3,231*	*64,587*
Weighted average exercise price (€)	28.32	167.63	169.08	137.65

(1) Classified as cash-settled share-based payment arrangement; all other share-based payment arrangements are classified as equity-settled.

	Allocation date May 2023[1]	Estimated allocation date 2024[1]	Estimated allocation date 2025[1]	Estimated allocation date 2026[1]
Share options outstanding / expected to be allocated	130,586	164,148	118,312	93,561
thereof allocated and unvested	*130,586*	—	—	—
Weighted average exercise price (€)	105.42	96.82	99.74	105.13

(1) Valuation parameter derived from the Monte-Carlo simulation model.

For the awards with estimated allocation dates, the numbers of options expected to be allocated have been derived from a Monte-Carlo simulation model. Those will be adjusted until the actual allocation has occurred and the number of options granted has ultimately been determined.

As of December 31, 2023, the share options allocated and expected to be allocated under our equity-settled share-based payment arrangements had a remaining weighted average expected life of 4.1 years (as of December 31, 2022: 4.0 years).

As of December 31, 2023, the liability related to the phantom option awards amounted to €3.6 million (€5.6 million as of December 31, 2022).

16.4 Chief Executive Officer Grant (Equity-Settled)

Description of Share-Based Payments

In September 2019, we granted Ugur Sahin an option to purchase 4,374,963 of our ordinary shares, subject to Sahin's continuous employment with us. The options' exercise price per share is the Euro translation of the public offering price from our initial public offering, €13.60 ($15.00), which is subject to the effective exercise price cap and the maximum cap mechanism. Under the exercise price cap the exercise price shall be adjusted to ensure that the current price of an ADS as of the exercise date does not exceed 800% of the exercise price. Under the maximum cap mechanism the maximum economic benefit receivable in respect of any exercised option is capped at $240.00 with the effective exercise price being capped at a Euro amount equivalent to $30.00.

The options vest annually in equal installments after four years commencing on the first anniversary of the initial public offering and have a waiting period of four years after the initial public offering. The vested option rights can only be exercised if and to the extent that each of the following performance criteria has been achieved: (i) at the time of exercise, the current price is equal to or greater than the threshold amount (that is, the exercise price, provided that such amount increases by seven percentage points on each anniversary of the allocation date); (ii) at the time of exercise, the current price is at least equal to the target price (that is, (a) for the twelve-month period starting on the fourth anniversary of the allocation date, $8.5 billion divided by the total number of the shares outstanding immediately following the initial public offering (other than shares owned by us), and (b) for each twelve-month period starting on the fifth or subsequent anniversary of the allocation date, 107% of the target share price applicable for the prior twelve-month period); and (iii) the closing price for the fifth trading day prior to the start of the relevant exercise window is higher than the exercise price by at least the same percentage by which the Nasdaq Biotechnology Index or a comparable successor index as of such time is higher than such index was as of the last trading day before the allocation date. Following the expiry of the waiting period, option rights may be exercised during the exercise windows as defined by our ESOP. The option rights can be exercised up to ten years after the allocation date. If they have not been exercised by that date, they will be forfeited without compensation.

Measurement of Fair Values

A Monte-Carlo simulation model has been used to measure the fair value at the grant date of the Chief Executive Officer Grant. This model incorporates the impact of the performance criteria regarding share price and index development described above in the calculation of the award's fair value at the grant date. The inputs used in the measurement of the fair value at the grant date of the Chief Executive Officer Grant were as follows:

	Grant date October 9, 2019
Weighted average fair value	€ 5.63
Weighted average share price	€ 13.60
Exercise price	€ 13.60
Expected volatility	41.4%
Expected life (years)	5.4
Risk-free interest rate	1.5%

Expected volatility was based on an evaluation of the historical volatilities of comparable companies over the historical period commensurate with the expected term. The expected term was based on general option holder behavior for employee options.

Reconciliation of Outstanding Share-Options

On October 9, 2023, with the final installment vesting, all 4,374,963 options became exercisable under the rules of the ESOP and the ESOP agreement. During the year ended December 31, 2023, no options were exercised.

As of December 31, 2023, the share options outstanding had a remaining weighted average expected life of 1.1 years (as of December 31, 2022: 2.1 years).

16.5 Employee Stock Ownership Plan (Partly Equity-Settled, Partly Cash-Settled)

Description of Share-Based Payments

Based on an authorization of the general meeting on August 18, 2017, we established a share option program under which we granted selected employees options to receive our shares. The program is designed as an Employee Stock Ownership Plan, or ESOP. We offered participants a certain number of option rights by their explicit acceptance of an option rights agreement. The exercise of option rights in accordance with the agreement gives the participants the right to obtain shares against payment of the exercise price. With respect to the Management Board members serving at the time of allocation, the options are subject to the effective exercise price cap and maximum cap mechanisms. Under the exercise price cap, the exercise price shall be adjusted to ensure that the current price of an ADS as of the exercise date does not exceed 800% of the exercise price. Under the maximum cap mechanism, the maximum economic benefit receivable in respect of any exercised option, is capped at $240, with the effective exercise price being capped at a Euro amount equivalent to $30.00. Under the ESOP, the option rights (other than Özlem Türeci's, and Ryan Richardson's options) fully vest after four years and can be exercised if: (i) the waiting period of four years has elapsed; and (ii) at the time of exercise, the average closing price of the shares of the Company or the average closing price of the right or certificate to be converted into an amount per share on the previous ten trading days preceding the exercise of the option right exceeds the strike price by a minimum of 32%, with this percentage increasing by eight percentage points as of the fifth anniversary of the respective issue date and as of each subsequent anniversary date. Following the expiry of the waiting period, option rights may be exercised within a period of four weeks from the date of the Annual General Meeting or the publication of the annual financial statements, the semi-annual report or our most recent quarterly report or interim report (exercise windows). The option rights can be exercised up to eight years after the allocation date. If they have not been exercised by that date, they will be forfeited without compensation.

By way of a shareholders' resolution of the general meeting on August 19, 2019, the authorization to issue such option rights was amended such that, in order for the options to be exercisable, the average closing price of the Company's shares or the average closing price of the right or certificate to be converted into an amount per share on the ten trading days immediately preceding the exercise must exceed the strike price by a minimum of 28%, with this percentage increasing by seven percentage points as of the fifth anniversary of the issue date and as of each subsequent anniversary date. Furthermore, in addition to the aforementioned requirements, the exercise is only possible if the share price (calculated by reference to the price of the ordinary share underlying the ADS) has performed similar to or better than the Nasdaq Biotechnology Index. The changes made do not affect option rights already issued.

Measurement of Fair Values

The fair value of the ESOP has been measured using a binomial model. Service conditions attached to the arrangement were not taken into account in measuring the fair value.

The share options can only be exercised by the grantee if the price of the share is equal or greater to the threshold amount as defined in the arrangement. Moreover, the option rights can only be exercised if the IPO has occurred. Both conditions have been incorporated into the fair value at the grant date.

The inputs used in the measurement of the fair values at the grant date of the ESOP were as follows:

	Grant date November 15, 2018	Grant dates between February 21 and April 3, 2019	Grant dates between April 29 and May 31, 2019	Grant date December 1, 2019
Weighted average fair value	€ 7.41	€ 6.93	€ 7.04	€ 9.49
Weighted average share price	€ 14.40	€ 15.72	€ 16.03	€ 19.84
Exercise price[1]	€ 10.14	€ 15.03	€ 15.39	€ 15.82
Expected volatility	46.0%	46.0%	46.0%	46.0%
Expected life (years)	5.8	6.0	6.0	5.5
Risk-free interest rate	0.1%	0.1%	0.1%	0.1%

(1) With respect to the Management Board members appointed as such at the time the options were granted, the options are subject to the effective exercise price cap as well as the maximum cap mechanism.

Expected volatility has been based on an evaluation of the historical and the implied volatilities of comparable companies over the historical period commensurate with the expected term. The expected term has been based on general option holder behavior for employee options.

Reconciliation of Outstanding Share-Options (Equity-Settled)

Set out below is an overview of changes to share options outstanding and number of ordinary shares underlying these options that occurred during the periods indicated:

	Share options outstanding	Number of ordinary shares underlying options	Weighted average exercise price (€)[1]
As of January 1, 2022	642,007	11,556,124	10.23
Modified[2]	(1,040)	(18,720)	10.14
Exercised[3]	(583,383)	(10,500,890)	10.14
As of December 31, 2022	**57,584**	**1,036,514**	**11.10**
As of January 1, 2023	57,584	1,036,514	11.10
Exercised[3]	(39,785)	(716,121)	11.04
As of December 31, 2023	**17,799**	**320,393**	**11.24**
thereof vested	*17,799*	*320,393*	*11.24*
thereof unvested	—	—	—

(1) With respect to the Management Board members appointed as such at the time the options were granted, the options are subject to the effective exercise price cap as well as the maximum cap mechanism.

(2) Rights have been modified to cash-settled rights, all other terms remained unchanged.

(3) The average closing price of an American Depositary Share of BioNTech on Nasdaq weighted over the various dates immediately preceding the settlement dates, converted from USD to Euro using the exchange rate published by the German Central Bank (Deutsche Bundesbank) on the same days was €96.49 and €160.44 for all settlements during the years ended December 31, 2023 and 2022, respectively.

In September 2022, the Supervisory Board determined the ESOP settlement by the delivery of treasury shares (in the form of ADSs) equal to the net value of the exercised option rights after deduction of (i) the exercise price and (ii) the applicable wage taxes (including solidarity surcharge thereon and church tax, if applicable) and social security contributions resulting from such exercise. The settlement was applied during the exercise windows in 2022 and 2023. The applicable wage taxes (including solidarity surcharge thereon and church tax, if applicable) and social security contributions resulting from and withheld upon the exercise amounted to €724.0 million and were paid in January 2023 in cash directly to the respective authorities. The settlement mechanism decision did not change the rights as such, neither did it change the classification as equity-settled option rights.

As of December 31, 2023, the share options outstanding under our equity-settled share-based payment arrangements had a remaining weighted average expected life of 0.8 years (as of December 31, 2022: 1.7 years).

Development of Share-Options (Cash-Settled)

Phantom options which were granted under the ESOP mainly during the year ended December 31, 2022 each give the participants the right to receive a cash payment equal to the difference between an exercise closing price (average closing price of an American Depositary Share of BioNTech on Nasdaq over the last ten trading days preceding the exercise date) and the exercise price. The majority of options have an exercise price of €10.14. During the years ended December 31, 2023, and 2022, 52,100 and 289,168 cash-settled phantom option rights were exercised and resulted in a cash outflow of €4.5 million and €42.2 million, respectively. The average closing prices (10-day averages) of an American Depositary Share of BioNTech on Nasdaq weighted over the various settlement dates converted from USD to Euro using the exchange rate published by the German Central Bank (Deutsche Bundesbank) on the same days was €96.25 and €155.39. As of December 31, 2023, 109,651 cash-settled option rights remained outstanding. As of December 31, 2023, the liability related to cash-settled share-based payment option rights amounted to €8.5 million (€14.5 million as of December 31, 2022), of which €8.3 million (€11.2 million as of December 31, 2022) related to rights already vested (partly subject to performance and waiting requirements). The liability is based on the fair value of the respective rights. The fair value is measured using a binomial model consistent with the grant date fair value measurement of the equity-based option rights described above, which is updated on every reporting date.

17 Provisions

(in millions €)	December 31, 2023	December 31, 2022
Contractual disputes	118.2	88.9
Obligations from onerous CMO contracts	80.2	235.5
Other	79.7	51.4
Total	**278.1**	**375.8**
Total current	269.3	367.2
Total non-current	8.8	8.6

As of December 31, 2023, our current provisions included €118.2 million in contractual disputes mainly related to purported obligations arising out of certain contractual disputes unrelated to the below-mentioned patent proceedings (€88.9 million as of December 31, 2022). Acknowledging an increase in obligations identified as contractual disputes, the change of €29.3 million compared to the previous period related mainly to additions.

As of December 31, 2023, our current provisions included €80.2 million (€235.5 million as of December 31, 2022) of obligations for production capacities derived from contracts with Contract Manufacturing Organizations, or CMOs, that became redundant The effects were driven by reducing production capacities as well as further fostering the global production network with our collaboration partners during the year ended December 31, 2023. The related expenses were recognized in cost of sales in our consolidated statements of profit or loss. The change of €(155.3) million compared to the previous period related to addition (€45.1 million), to release (€126.0 million) and usage (€74.5 million).

As of December 31, 2023, our current provisions included €79.7 million in other obligations mainly comprising inventor remunerations as well as customs and duties (€51.4 million as of December 31, 2022, mainly comprising inventor remunerations as well as customs and duties). The change of €28.3 million compared to the previous period related mainly to additions.

18 Contingencies and other financial commitments

Contingencies

Our contingencies include, but are not limited to, intellectual property disputes and product liability and other product-related litigation. From time to time, in the normal course and conduct of our business, we may be involved in discussions with third parties about considering, for example, the use and/or remuneration for use of such third party's intellectual property. As of December 31, 2023, none of such intellectual property-related considerations that we have been notified of, and for which potential claims could be brought against us or our subsidiaries in the future, fulfill the criteria for recording a provision. We are subject to an increasing number of product liability claims. Such claims often involve highly complex issues related to medical causation, correctness and completeness of product information (Summary of Product Characteristics/package leaflet) as well as label warnings and reliance thereon, scientific evidence and findings, actual and provable injury, and other matters. These complexities vary from matter to matter. As of December 31, 2023, none of these claims fulfill the criteria for recording a provision. Substantially all of our contingencies are subject to significant uncertainties and, therefore, determining the likelihood of a loss and/or the measurement of any loss can be complex. Consequently, we are unable to estimate the range of reasonably possible loss. Our assessments, which result from a complex series of judgments about future events and uncertainties, are based on estimates and assumptions that have been deemed reasonable by management, but that may prove to be incomplete or inaccurate, and unanticipated events and circumstances may occur that might cause us to change those estimates and assumptions. We currently do not believe that any of these matters will have a material adverse effect on our financial position, and will continue to monitor the status of these and other claims that may arise. However, we could incur judgments, enter into settlements or revise our expectations regarding the outcome of matters, which could have a material adverse effect on our results of operations and/or our cash flows in the period in which the amounts are accrued or paid. We will continue to evaluate whether, if circumstances were to change in the future, the recording of a provision may be needed and whether potential indemnification entitlements exist against any such claim.

Certain pending matters to which we are a party are discussed below.

Alnylam Proceedings

In March 2022, Alnylam Pharmaceuticals, Inc., or Alnylam, filed a lawsuit against Pfizer and Pharmacia & Upjohn Co. LLC in the U.S. District Court for the District of Delaware alleging that an existing patent owned by Alnylam, U.S. Patent No. 11,246,933, or the '933 Patent, is infringed by the cationic lipid used in Comirnaty, and seeking monetary relief, which is not specified in their filings. We filed a counterclaim to become party to the Alnylam proceeding, and in June 2022, Alnylam added to its claims allegations that we induced infringement of the '933 Patent. Additionally, in July 2022, Alnylam filed a lawsuit against us, our wholly owned subsidiary, BioNTech Manufacturing GmbH, Pfizer and Pharmacia & Upjohn Co. LLC in the U.S. District Court for the District of Delaware alleging that we also induced infringement of a newly issued patent, U.S. Patent No. 11,382,979, or the '979 Patent, which is a continuation of the '933 Patent. The two lawsuits were consolidated on July 28, 2022. In May 2023, Alnylam filed a third lawsuit against Pfizer Inc. and Pharmacia & Upjohn Co. LLC in the U.S. District Court for the District of Delaware alleging infringement of U.S. Patent Nos. 11,633,479; 11,633,480; 11,612,657; and 11,590,229, all of which are continuations of the '933 Patent. We filed a counterclaim to become party to the new proceeding, and in July 2023, Alnylam added to its claims allegations that we induced infringement of the four new patents. All of the proceedings have been consolidated and are currently pending.

We believe we have strong defenses against the allegations claimed relative to each of the patents and intend to vigorously defend ourselves in the proceedings mentioned above. However, our analysis of Alnylam's claims is ongoing and complex, and we believe the outcome of the suit remains substantially uncertain. Taking into account discussions with our external lawyers, we do not consider the probability of an outflow of resources to be sufficient to recognize a provision at the balance sheet date. In our opinion, these matters constitute contingent liabilities as of the balance sheet date. However, it is currently impractical for us to estimate with sufficient reliability the respective contingent liabilities.

CureVac Proceedings

Germany

Infringement Proceedings – EP'122, DE'961, DE'974, DE'575, and EP'668

In July 2022, CureVac AG, or CureVac, filed a lawsuit against us and our wholly owned subsidiaries, BioNTech Manufacturing GmbH and BioNTech Manufacturing Marburg GmbH, in the Düsseldorf Regional Court, alleging Comirnaty's infringement of one European patent, EP1857122B1, or the EP'122 Patent, and three Utility Models DE202015009961U1, DE202015009974U1, and DE202021003575U1. In August 2022, CureVac added European Patent EP3708668B1, or the EP'668 Patent, to its German lawsuit.

On August 15, 2023, the Düsseldorf Regional Court held a hearing on infringement with respect to all five IP rights. At the hearing, the Court suspended its infringement ruling with respect to EP'122 until December 28, 2023. On September 28, 2023, the Court issued orders suspending its infringement rulings with respect to the remaining four IP rights (DE'961, DE'974, DE'575, and EP'668) pending validity decisions in the DE'961, DE'974, and DE'575 cancellation proceedings before the German Patent and Trademark Office and in the EP'668 opposition proceedings before the Opposition Division of the European Patent Office. In the September 28th orders, the Court explained that it was suspending its infringement rulings until validity decisions are reached, while contemporaneously noting concerns regarding the validity of DE'961, DE'974, DE'575, and EP'668. On December 28, 2023, the Düsseldorf Regional Court stayed the infringement proceedings as to EP'122 until a final appellate decision is rendered as to the validity of EP 122 by the Federal Court of Justice.

Infringement Proceedings – EP'755, DE'123, and DE'130

In July 2023, CureVac SE filed a second lawsuit against us and our wholly owned subsidiaries, BioNTech Manufacturing GmbH and BioNTech Manufacturing Marburg GmbH, in the Düsseldorf Regional Court, alleging Comirnaty's infringement of one European patent, EP4023755B1, or the EP'755 Patent, and two Utility Models DE202021004123U1, and DE202021004130U1.

Nullity Proceedings – EP'122

In September 2022, we filed a nullity action in the Federal Patent Court of Germany seeking a declaration that the EP'122 Patent is invalid. In April 2023, the Federal Patent Court of Germany issued a preliminary opinion in the EP'122 nullity action in support of the validity of the EP'122 Patent. The preliminary opinion did not address any infringement of the EP'122 Patent. The preliminary opinion is a preliminary assessment by the court of the merits of a claim, and is non-binding. On December 19, 2023, the Federal Patent Court held an oral hearing, after which it nullified EP'122.

Cancellation Proceedings– DE'961, DE'974, and DE'575

In November 2022, we filed cancellation actions seeking the cancellation of the three German Utility Models in the German Patent and Trademark Office. On December 27, 2023, the German Patent Office issued a preliminary opinion that DE'974 is likely to be cancelled based on invalidity pursuant to para. 1 (2) no. 5 Utility Model Act.

United States

In July 2022, we and Pfizer filed a complaint for a declaratory judgment in the U.S. District Court for the District of Massachusetts, seeking a judgment of non-infringement by Comirnaty of U.S. Patent Nos. 11,135,312, 11,149,278 and 11,241,493. In May 2023, the action in the U.S. District Court for the District of Massachusetts was transferred to the U.S. District Court for the Eastern District of Virginia, where CureVac filed counterclaims asserting infringement of six additional U.S. patents, U.S. Patent Nos. 10,760,070; 11,286,492; 11,345,920; 11,471,525; 11,576,966; and 11,596,686. In July 2023, CureVac filed amended counterclaims to assert an additional U.S. patent, U.S. Patent No. 11,667,910.

United Kingdom

In September 2022, we and Pfizer filed a declaration of non-infringement and revocation action against the EP'122 Patent and the EP'668 Patent in the Business and Property Courts of England and Wales. In October 2022, CureVac responded by filing a counterclaim alleging infringement of the EP'122 and EP'668 patents in the Business And Property Courts of England and Wales. On December 18, 2023, we amended our pleadings to further allege non-infringement and invalidity against EP'755.

All of the above proceedings are currently pending.

We believe we have strong defenses against the allegations claimed relative to each of the patents and utility models and intend to vigorously defend ourselves in the proceedings mentioned above. However, our analysis of CureVac's claims is ongoing and complex, and we believe the ultimate outcomes remain substantially uncertain. Taking into account discussions with our external lawyers, we do not consider the probability of an outflow of resources to be sufficient to recognize a provision at the balance sheet date. In our opinion, these matters constitute contingent liabilities as of the balance sheet date. However, it is currently impractical for us to estimate with sufficient reliability the respective contingent liabilities.

Moderna Proceedings

Germany

Infringement Proceedings – EP'949 and EP'565

In August 2022, Moderna filed a lawsuit against us and Pfizer and our wholly owned subsidiaries, BioNTech Manufacturing GmbH, BioNTech Europe GmbH and BioNTech Manufacturing Marburg GmbH, Pfizer Manufacturing Belgium NV, Pfizer Ireland Pharmaceuticals and Pfizer Inc. in the Düsseldorf Regional Court alleging Comirnaty's infringement of two European Patents, 3590949B1, or the EP'949 Patent, and 3718565B1, or the EP'565 Patent. On November 7, 2023, the European Patent Office ("EPO") Opposition Division revoked EP'565 after a one-day oral hearing. The Opposition Division issued a preliminary opinion on December 8, 2023 noting that it believes EP'949 is likely invalid. As a result of these EPO proceedings, the Düsseldorf Regional Court postponed its hearing on infringement, originally scheduled for December 12, 2023, to January 21, 2025.

United Kingdom

In August 2022, Moderna filed a lawsuit asserting Comirnaty's infringement of the EP'949 Patent and EP'565 Patent against us and our wholly owned subsidiaries, BioNTech Manufacturing GmbH, BioNTech Europe GmbH and BioNTech Manufacturing Marburg GmbH, Pfizer Limited, Pfizer Manufacturing Belgium NV and Pfizer Inc. in the Business and Property Courts of England and Wales. In September 2022, we and Pfizer filed a revocation action in the Business and Property Courts of England and Wales requesting revocation of the EP'949 Patent and EP'565 Patent.

United States

U.S. District Court Litigation

In August 2022, Moderna filed a lawsuit in the United States District Court for the District of Massachusetts against us and our wholly owned subsidiaries BioNTech Manufacturing GmbH and BioNTech US Inc. and Pfizer Inc. alleging Comirnaty's infringement of U.S. Patent Nos. 10,898,574, 10,702,600 and 10,933,127 and seeking monetary relief.

Inter Partes Review

In August 2023, Pfizer and we filed petitions seeking inter partes review of U.S. Patent Nos. 10,702,600 and 10,933,127 before the United States Patent Trial and Appeal Board.

Netherlands

In September 2022, Moderna filed a lawsuit against us and our wholly owned subsidiary BioNTech Manufacturing GmbH and Pfizer B.V., Pfizer Export B.V., C.P. Pharmaceuticals International C.V. and Pfizer Inc. in the District Court of The Hague alleging Comirnaty's infringement of the EP '949 Patent and the EP '565 Patent. The District Court of the Hague held a hearing on October 6, 2023 on infringement and validity with respect to the EP '949 Patent. On December 6, 2023, the Court found EP'949 to be invalid. The EP'565 case has been stayed pending Moderna's appeal of the Opposition Division's revocation of EP'565.

Ireland

In May 2023, Moderna filed a lawsuit against us and our wholly owned subsidiary BioNTech Manufacturing GmbH, Pfizer Inc., Pfizer Healthcare Ireland, Pfizer Ireland Pharmaceuticals, and C.P. Pharmaceuticals International C.V. alleging Comirnaty's infringement of the EP'949 Patent and EP'565 Patent in the High Court of Ireland.

Belgium

In May 2023, Moderna filed a lawsuit against us, our wholly owned subsidiary BioNTech Manufacturing GmbH, Pfizer Inc. and Pfizer Manufacturing Belgium alleging Comirnaty's infringement of the EP'949 Patent and the EP'565 Patent in the Brussels Dutch-speaking Enterprise Court.

All of the above proceedings are currently pending.

We believe we have strong defenses against the allegations claimed relative to each of the patents and intend to vigorously defend ourselves in the proceedings mentioned above. However, our analysis of Moderna's claims is ongoing and complex, and we believe the outcome of the suit remains substantially uncertain. Taking into account discussions with our external lawyers, we do not consider the probability of an outflow of resources to be sufficient to recognize a provision at the balance sheet date. In our opinion, these matters constitute contingent liabilities as of the balance sheet date. However, it is currently impractical for us to estimate with sufficient reliability the respective contingent liabilities.

Arbutus and Genevant Proceedings

In April 2023, Arbutus Biopharma Corp., or Arbutus, and Genevant Sciences GmbH, or Genevant, filed a lawsuit against Pfizer and us in the U.S. District Court for the District of New Jersey alleging that Pfizer and we have infringed the following patents owned by Arbutus: U.S. Patent Nos. 9,504,651; 8,492,359; 11,141,378; 11,298,320; and 11,318,098, through the use of Genevant's lipid nanoparticle technology and methods for producing such lipids in Comirnaty, and seeking monetary relief. This proceeding is currently pending.

We believe we have strong defenses against the allegations claimed relative to each of the patents and intend to vigorously defend ourselves in the lawsuit mentioned above. However, our analysis of Arbutus and Genevant's claims is ongoing and complex, and we believe the outcome of the suit remains substantially uncertain. Taking into account discussions with our external lawyers, we do not consider the probability of an outflow of resources to be sufficient to recognize a provision at the balance sheet date. In our opinion, these matters constitute contingent liabilities as of the balance sheet date. However, it is currently impractical for us to estimate with sufficient reliability the respective contingent liabilities.

Promosome Proceedings

In June 2023, Promosome LLC filed a lawsuit against Pfizer, us, and BioNTech Manufacturing GmbH in the U.S. District Court for the Southern District of California alleging that Pfizer and our Comirnaty vaccine has infringed U.S. Patent No. 8,853,179, and seeking monetary relief. On October 4, 2023, the parties filed a joint stipulation of dismissal, dismissing the lawsuit with prejudice. As part of this stipulation of dismissal, Promosome agreed to a covenant not to assert U.S. Patent No. 8,853,179 against Pfizer and us or any of their products, including Comirnaty. This matter is considered closed.

Other financial commitments

The other financial commitments were as follows:

(in millions €)	December 31, 2023	December 31, 2022
Commitments under purchase agreements for property, plant and equipment	154.4	105.2
Contractual obligation to acquire intangible assets	1,721.1	—
Total	**1,875.5**	**105.2**

Contractual obligations to acquire intangible assets exist in connection with in-licensing and research and development collaborations. We have entered into obligations to make milestone payments once specific targets have been reached. Provided that all of the milestone events are achieved, we would be obligated to pay up to €1,721.1 million as of December 31, 2023 (nil as of December 31, 2022) in connection with the acquisition of intangible assets. The amounts shown represent the maximum payments to be made, and it is unlikely that they will all fall due. The amounts and the dates of the actual payments may both vary considerably from those stated in the table, since the achievement of the conditions for payment is possible but uncertain. Other financial obligations from possible future sales-based milestone and license payments were not included in the table above.

The expected maturities of payment obligations under purchase agreements for property, plant and equipment and contractual obligations to acquire intangible assets are as follows:

Year ended December 31, 2023

(in millions €)	Less than 1 year	1 to 5 years	More than 5 years	Total
Commitments under purchase agreements for property, plant and equipment	152.5	1.9	—	154.4
Contractual obligation to acquire intangible assets	249.4	954.9	516.8	1,721.1
Total	**401.9**	**956.8**	**516.8**	**1,875.5**

Other financial obligations were recognized at nominal value.

19 Other Non-Financial Liabilities

(in millions €)	December 31, 2023	December 31, 2022
Liabilities to employees	73.3	50.6
Liabilities from share-based payment arrangements	29.0	36.2
Liabilities from wage taxes and social securities expenses	15.1	761.8
Other	20.8	29.2
Total	**138.2**	**877.8**
Total current	125.1	860.8
Total non-current	13.1	17.0

20 Leases

20.1 Amounts Recognized in the Consolidated Statements of Financial Position

Right-of-Use Assets

The following amounts are presented as right-of-use assets within the consolidated statements of financial position as of the dates indicated:

(in millions €)	December 31, 2023	December 31, 2022
Buildings	209.8	206.5
Production facilities	—	3.0
Other operating equipment	4.6	2.4
Total	**214.4**	**211.9**

Additions to the right-of-use assets during the year ended December 31, 2023, were €66.4 million (during the year ended December 31, 2022: €118.3 million).

Lease Liability

The following amounts are included in lease liabilities, loans and borrowings as of the dates indicated:

(in millions €)	December 31, 2023	December 31, 2022
Current	28.1	36.0
Non-current	188.6	174.1
Total	**216.7**	**210.1**

20.2 Amounts Recognized in the Consolidated Statements of Profit or Loss

Depreciation Charge of Right-of-Use Assets

	Years ended December 31,		
(in millions €)	2023	2022	2021
Buildings	40.7	35.2	14.7
Production facilities	3.0	23.1	14.0
Other operating equipment	1.5	0.5	0.3
Total depreciation charge	**45.2**	**58.8**	**29.0**
Interest on lease liabilities	5.7	5.1	2.9
Expense related to short-term leases and leases of low-value assets	58.9	27.1	9.5
Total amounts recognized in profit or loss	**109.8**	**91.0**	**41.4**

20.3 Amounts Recognized in the Consolidated Statements of Cash Flows

During the year ended December 31, 2023, the total cash outflow for leases amounted to €46.0 million (during the year ended December 31, 2022: €46.2 million; during the year ended December 31, 2021: €17.0 million).

20.4 Extension Options

The Group has several lease contracts that include extension options. These options are negotiated by management to provide flexibility in managing the leased asset portfolio and align with the Group's business needs. Management exercises judgment in determining whether these extension options are reasonably certain to be exercised. The undiscounted potential future lease payments, which relate to periods after the exercise date of renewal options and are not included in lease liabilities, amount to up to €157.2 million as of December 31, 2023, considering terms up until 2049 (as of December 31, 2022: €163.1 million considering terms up until 2049).

21 Related Party Disclosures

21.1 Parent and Ultimate Controlling Party

ATHOS KG, Holzkirchen, Germany is the sole shareholder of AT Impf GmbH, Munich, Germany and beneficial owner of our ordinary shares. ATHOS KG via AT Impf GmbH has de facto control over BioNTech based on its substantial shareholding, which practically enables it to exercise the majority of voting rights to pass resolutions at our Annual General Meeting, or AGM.

21.2 Transactions with Key Management Personnel

In May 2023, at the Annual General Meeting, our shareholders reappointed Ulrich Wandschneider and Michael Motschmann as members of the Supervisory Board. In addition, Nicola Blackwood was appointed to our Supervisory Board. She succeeded Christoph Huber, who left the Supervisory Board after reaching the applicable retirement age limit.

Key Management Personnel Compensation

Our key management personnel has been defined as the members of the Management Board and the Supervisory Board. Key management personnel compensation is comprised of the following:

	Years ended December 31,		
(in millions €)	2023	2022	2021
Management Board	**8.3**	**15.0**	**20.4**
Fixed compensation	3.9	2.9	2.2
Short-term incentive – first installment	0.7	0.6	0.6
Short-term incentive – second installment[1]	1.0	0.7	1.2
Other variable compensation[2]	0.8	0.1	—
Share-based payments (incl. long-term incentive)[3]	1.9	10.7	16.4
Supervisory Board	**0.6**	**0.5**	**0.4**
Total compensation paid to key management personnel	**8.9**	**15.5**	**20.8**

(1) The fair value of the second installment of the short-term incentive compensation which has been classified as a cash-settled share-based payment arrangement was determined pursuant to the regulations of IFRS 2 "Share-based Payments." This table shows the pro-rata share of personnel expenses for the respective financial year that are recognized over the award's vesting period beginning as of the service commencement date (date when entering or renewing service agreements) until each separate determination date and are remeasured until settlement date.

(2) Includes a one-time signing and retention cash payment agreed when renewing the service agreement agreed with Sean Marett.

(3) The fair value of the share-based payments was determined pursuant to the regulations of IFRS 2 "Stock-based Payments." This table shows the pro-rata share of personnel expenses resulting from stock-based compensation for the respective financial year. During the years ended December 31, 2023, 2022, and 2021, the amounts included expenses derived from a one-time signing bonus granted to Jens Holstein as of his appointment to the Management Board in the form of 4,246 phantom shares.

Management Board members participated in our ESOP program (see Note 16). Out of the 5,152,410 option rights granted to our Management Board under the ESOP 2018 program 4,921,630 options were exercised during the year ended December 31, 2022. The remaining 230,780 option rights were exercised by Sean Marett in May 2023. As of December 31, 2023, no further options issued to our Management Board members are outstanding.

21.3 Related Party Transactions

The total amount of transactions with ATHOS KG or entities controlled by it was as follows for the periods indicated:

	Years ended December 31,		
(in millions €)	2023	2022	2021
Purchases of various goods and services from entities controlled by ATHOS KG	0.3	0.3	0.9
Purchases of property and other assets from entities controlled by ATHOS KG	—	62.5	—
Total	**0.3**	**62.8**	**0.9**

On December 22, 2022, we entered into a purchase agreement with Santo Service GmbH, pursuant to which we acquired the real estate property An der Goldgrube 12 and the existing laboratory and office building including any movable assets for a total consideration of €62.5 million. The purchase price was paid during the year ended December 31, 2022. Santo Service GmbH is wholly owned by AT Impf GmbH, that is controlled by ATHOS KG.

The outstanding balances of transactions with ATHOS KG or entities controlled by them were as follows as of the periods indicated:

(in millions €)	December 31, 2023	December 31, 2022
ATHOS KG	0.4	—
Total	**0.4**	—

None of the balances are secured and no bad debt expense has been recognized in respect of amounts owed by related parties.

22 Numbers of Employees

The average number of employees is:

Quarterly average number of employees by function	Years ended December 31, 2023	2022	2021
Clinical Research & Development	434	243	137
Scientific Research & Development	1,871	1,302	875
Operations	1,469	1,240	863
Quality	470	383	322
Support Functions	1,217	828	431
Commercial & Business Development	179	108	66
Total	**5,640**	**4,104**	**2,694**

The average number of employees as of the reporting date is:

Number of employees by function as of the reporting date	Years ended December 31, 2023	2022	2021
Clinical Research & Development	592	274	153
Scientific Research & Development	2,080	1,512	1,026
Operations	1,562	1,365	1,036
Quality	474	413	301
Support Functions	1,390	983	539
Commercial & Business Development	194	145	83
Total	**6,292**	**4,692**	**3,138**

23 Fees for Auditors

The following fees were recognized for the services provided by EY GmbH & Co. KG Wirtschaftsprüfungsgesellschaft for the fiscal years ended December 31, 2023 and December 31, 2022:

	Years ended December 31,	
(in millions €)	**2023**	**2022**
Audit fees	3.2	2.9
Audit-related fees	0.3	0.4
Tax fees	0.1	0.2
All other fees	—	0.2
Total fees for professional audit services and other services	**3.6**	**3.7**

24 Corporate Governance

The declaration of conformity pursuant to Section 161 para. 1 of the German Stock Corporation Act (*Aktiengesetz*) is issued in accordance with the Corporate Governance Code in connection with the corporate governance declaration pursuant to Section 315d in conjunction with Section 289f HGB and can be found in the combined management report of BioNTech SE.

25 Events After the Reporting Period

On February 8, 2024, we and Autolus Therapeutics plc, or Autolus, a clinical-stage biopharmaceutical company developing next-generation programmed T cell therapies, announced a strategic collaboration aimed at advancing both companies' autologous CAR-T programs towards commercialization. We have entered into a license and option agreement and a securities purchase agreement under which we purchased $200.0 million of Autolus' American Deposit Shares in a private placement closed on February 13, 2024 resulting in a stake in Autolus ordinary shares of 12.5%. Under the terms of the license and option agreement, we made a $50.0 million upfront payment in exchange for the right to receive royalties on net sales of Autolus' lead asset obe-cel, co-commercialization options for Autolus' AUTO1/22 and AUTO6NG programs as well as an exclusive license and exclusive options to certain technologies owned by Autolus.

The Supervisory Board has appointed Annemarie Hanekamp to the Management Board as Chief Commercial Officer (CCO), effective as of July 1, 2024. She will take over the role from Sean Marett, who will retire as planned from the Management Board as of June 30, 2024.

The following English language translation of the German language independent auditor's report (Bestätigungsvermerk des unabhängigen Abschlussprüfers) refers to the consolidated financial statements, prepared in accordance with International Financial Reporting Standards as adopted by the EU, and the additional requirements of German commercial law pursuant to Sec. 315e (3) in conjunction with (1) HGB ("Handelsgesetzbuch": German Commercial Code), as well as the group management report, which is combined with the management report of the Company (combined management report), prepared on the basis of German commercial law (HGB), of BioNTech SE, Mainz, as of and for the year ended December 31, 2023 as a whole and not solely to the consolidated financial statements presented in this Prospectus on the preceding pages. The group management report is not part of this Prospectus.

Independent Auditor's Report

To BioNTech SE

Opinions

We have audited the consolidated financial statements of BioNTech SE, Mainz, and its subsidiaries (the Group), which comprise the consolidated balance sheet as at 31 December 2023, and the consolidated income statement, consolidated statement of other comprehensive income, consolidated statement of changes in equity and consolidated statement of cash flows for the fiscal year from 1 January to 31 December 2023, and notes to the financial statements, including a summary of significant accounting policies. In addition, we have audited the combined group management report of BioNTech SE for the fiscal year from 1 January to 31 December 2023. In accordance with the German legal requirements, we have not audited the group statement on Group corporate governance declaration pursuant to Secs. 315d HGB ["Handelsgesetzbuch": German Commercial Code] in section 5 of the combined group management report. In addition, we have not audited the content of the non-management report disclosures contained in sections 4.2.3 and 4.2.4 based on recommendation A.5 of the German Corporate Governance Code (GCGC 2022) and the non-financial report contained in section 7 of the combined group management report, which contains non-management report disclosures.

In our opinion, on the basis of the knowledge obtained in the audit,

- the accompanying consolidated financial statements comply, in all material respects, with the IFRSs as adopted by the EU, and the additional requirements of German commercial law pursuant to Sec. 315e (3) in conjunction with (1) HGB and, in compliance with these requirements, give a true and fair view of the assets, liabilities and financial position of the Group as at 31 December 2023 and of its financial performance for the fiscal year from 1 January to 31 December 2023, and
- the accompanying group management report as a whole provides an appropriate view of the Group's position. In all material respects, this group management report is consistent with the consolidated financial statements, complies with German legal requirements and appropriately presents the opportunities and risks of future development. We do not express an opinion on the content of the statement on corporate governance or on the sections 4.2.3, 4.2.4 and 7 of the combined management report referred to above.

Pursuant to Sec. 322 (3) Sentence 1 HGB, we declare that our audit has not led to any reservations relating to the legal compliance of the consolidated financial statements and of the group management report.

Basis for the opinions

We conducted our audit of the consolidated financial statements and of the group management report in accordance with Sec. 317 HGB and in compliance with German Generally Accepted Standards for Financial Statement Audits promulgated by the Institut der Wirtschaftsprüfer [Institute of Public Auditors in Germany] (IDW). Our responsibilities under those requirements and principles are further described in the "Auditor's responsibilities for the audit of the consolidated financial statements and of the group management report" section of our auditor's report. We are independent of the Group entities in accordance with the requirements of German commercial and professional law, and we have fulfilled our other German professional responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinions on the consolidated financial statements and on the group management report.

Other information

The Supervisory Board is responsible for the report of the Supervisory Board in the "Report of the Supervisory Board" section. The executive directors and the Supervisory Board are responsible for the declaration pursuant to Sec. 161 AktG ["Aktiengesetz": German Stock Corporation Act] on the German Corporate Governance Code, which is part of the Group corporate governance declaration. In all other respects, the executive directors are responsible for the other information. The other information comprises the aforementioned corporate governance declaration and the sections 4.2.3, 4.2.4 and 7 of the Group management report. The other information also comprises parts to be included in the annual report, of which we received a version prior to issuing this auditor's report, in particular:

- Sustainability Report,
- Report of the Supervisory Board,
- Remuneration report,

but not the consolidated financial statements, not the management report disclosures whose content is audited and not our auditor's report thereon.

Furthermore, the other information includes other components intended for the annual report which are expected to be made available to us after the audit opinion has been issued, in particular:

- the letter from the Executive Board to the shareholders,
- the multi-year overview of business development.

Our opinions on the consolidated financial statements and on the combined group management report do not cover the other information, and consequently we do not express an opinion or any other form of assurance conclusion thereon.

In connection with our audit, our responsibility is to read the other information and, in so doing, to consider whether the other information

- is materially inconsistent with the consolidated financial statements, with the group management report or our knowledge obtained in the audit, or
- otherwise appears to be materially misstated.

If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report in this regard.

Responsibilities of the executive directors and the supervisory board for the consolidated financial statements and the group management report

The executive directors are responsible for the preparation of the consolidated financial statements that comply, in all material respects, with IFRSs as adopted by the EU and the additional requirements of German commercial law pursuant to Sec 315e (3) in conjunction with (1) HGB and that the consolidated financial statements, in compliance with these requirements, give a true and fair view of the assets, liabilities, financial position and financial performance of the Group. In addition, the executive directors are responsible for such internal control as they have determined necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud (i.e., fraudulent financial reporting and misappropriation of assets) or error.

In preparing the consolidated financial statements, the executive directors are responsible for assessing the Group's ability to continue as a going concern. They also have the responsibility for disclosing, as applicable, matters related to going concern. In addition, they are responsible for financial reporting based on the going concern basis of accounting, unless there is an intention to liquidate the Group or to cease operations, or there is no realistic alternative but to do so.

Furthermore, the executive directors are responsible for the preparation of the group management report that, as a whole, provides an appropriate view of the Group's position and is, in all material respects, consistent with the consolidated financial statements, complies with German legal requirements and appropriately presents the opportunities and risks of future development. In addition, the executive directors are responsible for such arrangements and measures (systems) as they have considered necessary to enable the preparation of a group management report that is in accordance with the applicable German legal requirements, and to be able to provide sufficient appropriate evidence for the assertions in the group management report.

The supervisory board is responsible for overseeing the Group's financial reporting process for the preparation of the consolidated financial statements and of the group management report.

Auditor's responsibilities for the audit of the consolidated financial statements and of the group management report

Our objectives are to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and whether the group management report as a whole provides an appropriate view of the Group's position and, in all material respects, is consistent with the consolidated financial statements and the knowledge obtained in the audit, complies with the German legal requirements and appropriately presents the opportunities and risks of future development, as well as to issue an auditor's report that includes our opinions on the consolidated financial statements and on the group management report.

Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with Sec. 317 HGB and in compliance with German Generally Accepted Standards for Financial Statement Audits promulgated by the Institut der Wirtschaftsprüfer (IDW) will always detect a material misstatement. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated financial statements and this group management report.

We exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the consolidated financial statements and of the group management report, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinions. The risk of not detecting a material misstatement resulting from fraud is higher than the risk of not detecting a material misstatement resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit of the consolidated financial statements and of arrangements and measures (systems) relevant to the audit of the group management report in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of these systems.
- Evaluate the appropriateness of accounting policies used by the executive directors and the reasonableness of estimates made by the executive directors and related disclosures.
- Conclude on the appropriateness of the executive directors' use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in the auditor's report to the related disclosures in the consolidated financial statements and in the group management report or, if such disclosures are inadequate, to modify our respective opinions. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Group to cease to be able to continue as a going concern.
- Evaluate the overall presentation, structure and content of the consolidated financial statements, including the disclosures, and whether the consolidated financial statements present the underlying transactions and events in a manner that the consolidated financial statements give a true and fair view of the assets, liabilities, financial position and financial performance of the Group in compliance with IFRSs as adopted by the EU and the additional requirements of German commercial law pursuant to Sec. 315e (3) in conjunction with (1) HGB.

- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express opinions on the consolidated financial statements and on the group management report. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our opinions.
- Evaluate the consistency of the group management report with the consolidated financial statements, its conformity with law, and the view of the Group's position it provides.
- Perform audit procedures on the prospective information presented by the executive directors in the group management report. On the basis of sufficient appropriate audit evidence we evaluate, in particular, the significant assumptions used by the executive directors as a basis for the prospective information, and evaluate the proper derivation of the prospective information from these assumptions. We do not express a separate opinion on the prospective information and on the assumptions used as a basis. There is a substantial unavoidable risk that future events will differ materially from the prospective information.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

Cologne, March 20, 2024

EY GmbH & Co. KG
Wirtschaftsprüfungsgesellschaft

Schlebusch	Weigel
Wirtschaftsprüfer	Wirtschaftsprüfer
[German Public Auditor]	[German Public Auditor]

Audited Consolidated Financial Statements of BioNTech SE prepared in accordance with International Financial Reporting Standards as adopted by the EU and the additional requirements of German commercial law pursuant to Section 315e para. 3 in connection with para. 1 HGB as of and for the Year Ended December 31, 2022

Consolidated Statements of Profit or Loss

(in millions, except per share data)	Note	Years ended December 31, 2022	2021	2020
Revenues				
Commercial revenues	6	€17,194.6	€18,874.0	€ 303.5
Research & development revenues	6	116.0	102.7	178.8
Total revenues		**€17,310.6**	**€18,976.7**	**€ 482.3**
Cost of sales	7.1	(2,995.0)	(2,911.5)	(59.3)
Research and development expenses	7.2	(1,537.0)	(949.2)	(645.0)
Sales and marketing expenses	7.3	(59.5)	(50.4)	(14.5)
General and administrative expenses	7.4	(484.7)	(285.8)	(94.0)
Other operating expenses	7.5	(407.0)	(94.4)	(2.4)
Other operating income	7.6	815.3	598.4	250.5
Operating income / (loss)		**€12,642.7**	**€15,283.8**	**€ (82.4)**
Finance income	7.7	330.3	67.7	1.6
Finance expenses	7.8	(18.9)	(305.1)	(65.0)
Profit / (loss) before tax		**€12,954.1**	**€15,046.4**	**€(145.8)**
Income taxes	8	(3,519.7)	(4,753.9)	161.0
Profit for the period		**€ 9,434.4**	**€10,292.5**	**€ 15.2**
Earnings per share				
Basic profit for the period per share		€ 38.78	€ 42.18	€ 0.06
Diluted profit for the period per share		€ 37.77	€ 39.63	€ 0.06

The accompanying notes form an integral part of these consolidated financial statements.

Consolidated Statements of Comprehensive Income

(in millions)	Note	Years ended December 31, 2022	2021	2020
Profit for the period		**€9,434.4**	**€10,292.5**	**€ 15.2**
Other comprehensive income				
Other comprehensive income that may be reclassified to profit or loss in subsequent periods, net of tax				
Exchange differences on translation of foreign operations		11.2	8.4	(11.1)
Net other comprehensive income / (loss) that may be reclassified to profit or loss in subsequent periods		**€ 11.2**	**€ 8.4**	**€(11.1)**
Other comprehensive loss that will not be reclassified to profit or loss in subsequent periods, net of tax				
Net gain on equity instruments designated at fair value through other comprehensive income		10.5	—	—
Remeasurement income / (loss) on defined benefit plans		0.6	0.3	(0.3)
Net other comprehensive income / (loss) that will not be reclassified to profit or loss in subsequent periods		**€ 11.1**	**€ 0.3**	**€ (0.3)**
Other comprehensive income / (loss) for the period, net of tax		**€ 22.3**	**€ 8.7**	**€(11.4)**
Comprehensive income for the period, net of tax		**€9,456.7**	**€10,301.2**	**€ 3.8**

The accompanying notes form an integral part of these consolidated financial statements.

Consolidated Statements of Financial Position

(in millions)	Note	December 31, 2022	December 31, 2021
Assets			
Non-current assets			
Intangible assets	11	€ 219.7	€ 202.4
Property, plant and equipment	10	609.2	322.5
Right-of-use assets	19	211.9	197.9
Other financial assets	12	80.2	21.3
Other non-financial assets	14	6.5	14.4
Deferred tax assets	8	229.6	—
Total non-current assets		**€ 1,357.1**	**€ 758.5**
Current assets			
Inventories	13	439.6	502.5
Trade and other receivables	12	7,145.6	12,381.7
Other financial assets	12	189.4	381.6
Other non-financial assets	14	271.9	113.4
Income tax assets	8	0.4	0.4
Cash and cash equivalents	12	13,875.1	1,692.7
Total current assets		**€ 21,922.0**	**€ 15,072.3**
Total assets		**€ 23,279.1**	**€ 15,830.8**
Equity and liabilities			
Equity			
Share capital	15	248.6	246.3
Capital reserve	15	1,828.2	1,674.4
Treasury shares	15	(5.3)	(3.8)
Retained earnings		18,833.0	9,882.9
Other reserves	16	(848.9)	93.9
Total equity		**€ 20,055.6**	**€ 11,893.7**
Non-current liabilities			
Lease liabilities, loans and borrowings	12	176.2	171.6
Other financial liabilities	12	6.1	6.1
Income tax liabilities	8	10.4	4.4
Provisions	17	8.6	184.9
Contract liabilities	6	48.4	9.0
Other non-financial liabilities	18	17.0	12.8
Deferred tax liabilities	8	6.2	66.7
Total non-current liabilities		**€ 272.9**	**€ 455.5**
Current liabilities			
Lease liabilities, loans and borrowings	12	36.0	129.9
Trade payables	12	204.1	160.0
Other financial liabilities	12	785.1	1,190.4
Refund liabilities	6	24.4	90.0
Income tax liabilities	8	595.9	1,568.9
Provisions	17	367.2	110.2
Contract liabilities	6	77.1	186.1
Other non-financial liabilities	18	860.8	46.1
Total current liabilities		**€ 2,950.6**	**€ 3,481.6**
Total liabilities		**€ 3,223.5**	**€ 3,937.1**
Total equity and liabilities		**€ 23,279.1**	**€ 15,830.8**

The accompanying notes form an integral part of these consolidated financial statements.

Consolidated Statements of Changes in Stockholders' Equity

(in millions)	Note	Share capital	Capital reserve	Treasury shares	Retained earnings	Other reserves [1]	Total equity
As of January 1, 2020		**€ 232.3**	**€ 686.7**	**€ (5.5)**	**€ (424.8)**	**€ 4.8**	**€ 493.5**
Profit for the period		—	—	—	15.2	—	€ 15.2
Other comprehensive loss		—	—	—	—	(11.4)	€ (11.4)
Total comprehensive profit / (loss)		**€ —**	**€ —**	**€ —**	**€ 15.2**	**€ (11.4)**	**€ 3.8**
Issuance of share capital		14.0	861.0	0.7	—	—	€ 875.7
Transaction costs		—	(33.2)	—	—	—	€ (33.2)
Share-based payments	17	—	—	—	—	32.0	€ 32.0
As of December 31, 2020		**€ 246.3**	**€ 1,514.5**	**€ (4.8)**	**€ (409.6)**	**€ 25.4**	**€ 1,371.8**
Profit for the period		—	—	—	10,292.5	—	€ 10,292.5
Other comprehensive income		—	—	—	—	8.7	€ 8.7
Total comprehensive income		**—**	**—**	**—**	**10,292.5**	**8.7**	**€ 10,301.2**
Issuance of treasury shares	16	—	162.6	1.0	—	—	€ 163.6
Transaction costs		—	(2.7)	—	—	—	€ (2.7)
Share-based payments	17	—	—	—	—	59.8	€ 59.8
As of December 31, 2021		**€ 246.3**	**€ 1,674.4**	**€ (3.8)**	**€ 9,882.9**	**€ 93.9**	**€ 11,893.7**
Profit for the period		—	—	—	9,434.4	—	€ 9,434.4
Other comprehensive income		—	—	—	—	22.3	€ 22.3
Total comprehensive income		**€ —**	**€ —**	**€ —**	**€ 9,434.4**	**€ 22.3**	**€ 9,456.7**
Issuance of share capital	15	0.5	67.1	—	—	—	€ 67.6
Redemption of convertible note	12	1.8	233.2	—	—	—	€ 235.0
Share repurchase program	15	—	(979.5)	(6.9)	—	—	€ (986.4)
Transaction costs		—	(0.1)	—	—	—	€ (0.1)
Dividends	15	—	—	—	(484.3)	—	€ (484.3)
Share-based payments	16	—	833.1	5.4	—	(1,519.8)	€ (681.3)
Current and deferred taxes	8	—	—	—	—	554.7	€ 554.7
As of December 31, 2022		**€ 248.6**	**€ 1,828.2**	**€ (5.3)**	**€ 18,833.0**	**€ (848.9)**	**€ 20,055.6**

(1) Includes foreign currency translation reserve which was presented separately in prior periods.

Consolidated Statements of Cash Flows

(in millions)	Years ended December 31, 2022	2021	2020
Operating activities			
Profit for the period	€ 9,434.4	€ 10,292.5	€ 15.2
Income taxes	3,519.7	4,753.9	(161.0)
Profit before tax	**€12,954.1**	**€ 15,046.4**	**€ (145.8)**
Adjustments to reconcile profit before tax to net cash flows:			
Depreciation and amortization of property, plant, equipment, intangible assets and right-of-use assets	123.3	75.2	38.7
Share-based payment expenses	108.6	93.9	32.1
Net foreign exchange differences	625.5	(387.5)	41.3
Loss on disposal of property, plant and equipment	0.6	4.6	0.6
Finance income excluding foreign exchange differences	(265.3)	(1.5)	(1.6)
Finance expense excluding foreign exchange differences	18.9	305.2	22.3
Movements in government grants	0.3	(89.0)	92.0
Other non-cash income / (loss)	—	(2.2)	1.7
Unrealized net (gain) / loss on derivative instruments at fair value through profit or loss	(241.0)	57.3	—
Working capital adjustments:			
Decrease / (increase) in trade and other receivables, contract assets and other assets	4,369.9	(11,808.1)	(247.9)
Decrease / (increase) in inventories	62.9	(438.4)	(49.8)
Increase in trade payables, other financial liabilities, other liabilities, contract liabilities, refund liabilities and provisions	85.7	1,516.1	204.6
Interest received	29.3	1.2	1.4
Interest paid	(21.5)	(12.2)	(3.6)
Income tax received / (paid), net	(4,222.1)	(3,457.9)	0.5
Share-based payments	(51.8)	(13.4)	—
Net cash flows from / (used in) operating activities	**€13,577.4**	**€ 889.7**	**€ (13.5)**
Investing activities			
Purchase of property, plant and equipment	(329.2)	(127.5)	(66.0)
Proceeds from sale of property, plant and equipment	0.6	3.4	1.2
Purchase of intangible assets and right-of-use assets	(34.1)	(26.5)	(19.4)
Acquisition of subsidiaries and businesses, net of cash acquired	—	(20.8)	(60.6)
Purchase of financial instruments	(47.8)	(19.5)	—
(Investment) / proceeds from maturity of other financial assets	375.2	(375.2)	—
Net cash flows used in investing activities	**€ (35.3)**	**€ (566.1)**	**€ (144.8)**
Financing activities			
Proceeds from issuance of share capital and treasury shares, net of costs	110.5	160.9	753.0
Proceeds from loans and borrowings	0.8	—	156.0
Repayment of loans and borrowings	(18.8)	(52.6)	(1.6)
Payments related to lease liabilities	(41.1)	(14.1)	(12.7)
Share repurchase program	(986.4)	—	—
Dividends	(484.3)	—	—
Net cash flows from / (used in) financing activities	**€ (1,419.3)**	**€ 94.2**	**€ 894.7**
Net increase in cash and cash equivalents	12,122.8	417.8	736.4
Change in cash and cash equivalents resulting from exchange rate differences	59.6	64.7	(45.3)
Cash and cash equivalents at the beginning of the period	1,692.7	1,210.2	519.1
Cash and cash equivalents at December 31	**€13,875.1**	**€ 1,692.7**	**€1,210.2**

The accompanying notes form an integral part of these consolidated financial statements.

Notes to the Consolidated Financial Statements

1 Corporate Information

BioNTech SE is a limited company incorporated and domiciled in Germany. American Depositary Shares (ADS) representing BioNTech SE's ordinary shares have been publicly traded on Nasdaq Global Select Market since October 10, 2019. The registered office is located in Mainz, Germany (An der Goldgrube 12, 55131 Mainz). BioNTech SE is registered in the commercial register B of the Mainz Local Court under the number HRB 48720. These consolidated financial statements have been prepared in accordance with International Financial Reporting Standards (IFRS) as endorsed by the European Union (EU), and give a true and fair view of the financial position and results of operations of the Group in accordance with International Financial Reporting Standards (IFRS) and the results of operation of BioNTech SE and its subsidiaries, hereinafter also referred to as "BioNTech," the "Group," "we" or "us".

Our consolidated financial statements for fiscal year 2022 were prepared by the Management Board on March 27, 2023.

2 Significant Accounting Policies

2.1 Basis of Preparation

General

The consolidated financial statements have been prepared on a going concern basis in accordance with the IFRS as issued by the International Accounting Standards Board (IASB) as endorsed by the European Union and applied on a mandatory basis, and with the supplementary requirements of German commercial law pursuant to Section 315e of the German Commercial Code (HGB).

We prepare and publish our consolidated financial statements in Euros and round numbers to thousands or millions of Euros, respectively. Accordingly, numerical figures shown as totals in some tables may not be exact arithmetic aggregations of the figures that preceded them and figures presented in the explanatory notes may not add up to the rounded arithmetic aggregations. Rounding applied may differ from rounding published in different units in the previous years.

Segment Information

Decisions with respect to business operations and resource allocations are made by our Management Board, as the chief operating decision maker (CODM) based on BioNTech as a whole. Accordingly, we operate and make decisions as a single operating segment, which is also our reporting segment.

2.2 Basis of Consolidation

The consolidated financial statements comprise the financial statements of BioNTech SE and its controlled investees (subsidiaries).

The Group controls an investee if, and only if, the Group has

- power over the investee (*i.e.*, existing rights that give it the current ability to direct the relevant activities of the investee);
- exposure, or rights, to variable returns from its involvement with the investee; and
- the ability to use its power over the investee to affect its returns.

Generally, there is a presumption that a majority of voting rights results in control.

Whether an investee is controlled is re-assessed if facts and circumstances indicate that there are changes to one or more of the three elements of control. Consolidation of a subsidiary begins when control is obtained over the subsidiary and ceases when control over the subsidiary is lost.

The profit / (loss) and each component of other comprehensive income / (loss) for the period are attributed to the equity holders of the parent of the Group and to the non-controlling interests, even if this results in the non-controlling interests having a deficit balance. When necessary, adjustments are made to the consolidated financial statements of subsidiaries to bring their accounting policies in line with the Group's accounting policies. All intra-group assets and liabilities, equity, income, expenses and cash flows relating to transactions between members of the Group are eliminated on consolidation.

A change in the ownership interest of a subsidiary, without a loss of control, is accounted for as an equity transaction.

If control over a subsidiary is lost, the related assets (including goodwill), liabilities, non-controlling interests and other components of equity are derecognized, while any resultant gain or loss is recognized in the consolidated statements of profit or loss. Any investment retained is recognized at fair value.

2.3 Summary of Significant Accounting Policies

2.3.1 Business Combinations and Goodwill

Business combinations are accounted for using the acquisition method. The cost of an acquisition is measured as the aggregate of the consideration transferred, which is measured at acquisition date fair value, and the amount of any non-controlling interests in the acquiree.

Goodwill is initially measured at cost as the excess of the aggregate of the consideration transferred and the amount recognized for non-controlling interests and any previous interest held over the net identifiable assets acquired and liabilities assumed.

Costs related to executing business combinations are recognized when they are incurred and are classified as general and administrative expenses.

After initial recognition, goodwill is tested at least annually or when there is an indication for impairment. See Note 2.3.14. For the purpose of impairment testing, goodwill acquired in a business combination is, from the acquisition date, allocated to each of the cash-generating units that are expected to benefit from the combination, irrespective of whether other assets or liabilities of the acquiree are assigned to those units.

Where goodwill has been allocated to a cash-generating unit (CGU) and part of the operation within that unit is disposed of, the goodwill associated with the disposed operation is included in the carrying amount of the operation when determining the gain or loss on disposal. Goodwill disposed in these circumstances is measured based on the relative values of the disposed operation and the portion of the cash-generating unit retained.

2.3.2 Current versus Non-Current Classifications

Assets and liabilities in the consolidated statements of financial position are presented based on current or non-current classification.

An asset is current when it is either: (i) expected to be realized or intended to be sold or consumed in the normal operating cycle, (ii) held primarily for the purpose of trading, (iii) expected to be realized within twelve months after the reporting period or (iv) cash or cash equivalents, unless it is restricted from being exchanged or used to settle a liability for at least twelve months after the reporting period. All other assets are classified as non-current.

A liability is current when it is either: (i) expected to be settled in the normal operating cycle, (ii) held primarily for the purpose of trading, (iii) due to be settled within twelve months after the reporting period, or (iv) there is no unconditional right to defer the settlement of the liability for at least twelve months after the reporting period. The terms of the liability that could, at the option of the counterparty, result in its settlement by the issue of equity instruments do not affect its classification. The Group classifies all other liabilities as non-current.

Deferred tax assets and liabilities are classified as non-current assets and liabilities, respectively.

2.3.3 Fair Value Measurement

Fair value is a market-based measurement. For some assets and liabilities, observable market transactions or market information is available. For other assets and liabilities, observable market transactions or market information might not be available. When a price for an identical asset or liability is not observable, another valuation technique is used. To increase consistency and comparability in fair value measurements, there are three levels of the fair value hierarchy:

- Level 1 contains the use of quoted prices in active markets for identical assets or liabilities.
- Level 2 inputs are inputs other than quoted prices included within Level 1 that are observable for the asset or liability either directly or indirectly.
- Level 3 inputs are unobservable.

Within this hierarchy, estimated values are made by management based on reasonable assumptions, including other fair value methods.

For assets and liabilities that are recognized in the financial statements at fair value on a recurring basis, we determine whether transfers have occurred between levels in the fair value hierarchy by re-assessing categorization (based on the lowest level input that is significant to the fair value measurement as a whole) at the end of each reporting period.

For the purpose of fair value disclosures, classes of assets and liabilities have been determined on the basis of the nature, characteristics and risks of the asset or liability and the level of the fair value hierarchy, as explained above.

2.3.4 Revenue from Contracts with Customers

Revenue

Identification of the Contract

We generate revenues from collaboration and license agreements, which contain multiple elements, including licenses to use, research, develop, manufacture and commercialize candidates and products, research and development services as well as obligations to develop and manufacture preclinical and clinical material and products. We determined that those collaboration and license agreements qualify as contracts with customers. A contract is an agreement between two or more parties that establishes enforceable rights and obligations.

Identification of Performance Obligations

Our customer contracts often include bundles of licenses, goods and services. If the granting of a license is bundled together with delivering of goods and or the rendering of services, it is assessed whether these agreements are comprised of more than one performance obligation. A performance obligation is only accounted for as the grant of a license if the grant of a license is the sole or the predominant promise of the performance obligation.

Determining Transaction Prices

We apply judgement when determining the consideration that is expected to be received. If the consideration in an agreement includes a variable amount, we estimate the amount of consideration to which we will be entitled in exchange for transferring the goods to the customer. At contract inception, the variable consideration is estimated based on the most likely amount of consideration expected from the transaction and constrained until it is highly probable that a significant revenues reversal in the amount of cumulative revenues recognized will not occur when the associated uncertainty with respect to the variable consideration is subsequently resolved. The estimated revenues are updated at each reporting date to reflect the current facts and circumstances.

Allocation of Transaction Prices

If a contract with a customer contains more than one performance obligation, the transaction price is allocated to each performance obligation based on relative standalone selling prices. We have established the following hierarchy to determine the standalone selling prices.

- Where standalone selling prices for offered licenses, goods or services are observable and reasonably consistent across customers, our standalone selling price estimates are derived from our respective pricing history. However due to the limited number of customers and the limited company history this approach can rarely be used.
- Where sales prices for an offering are not directly observable or highly variable across customers, we follow a cost-plus-margin approach.
- For offerings that have highly variable pricing and lack substantial direct costs to estimate based on a cost-plus-margin approach, we allocate the transaction price by applying a residual approach.

Judgment is required when estimating standalone selling prices.

Recognition of Revenues

For each separate performance obligation, it is evaluated whether control is transferred either at a point in time or over time. For performance obligations that are satisfied over time, revenues are recognized based on a measure of progress, which depicts the performance in transferring control to the customer. Under the terms of our licensing arrangements, we provide the licensee with a research and development license, which represents a right to access our

intellectual property as it exists throughout the license period (as our intellectual property is still subject to further research). Therefore, the promise to grant a license is accounted for as a performance obligation satisfied over time as our customers simultaneously receive and consume the benefits from our performance.

Earnings based on the collaboration partners' gross profit, which is shared under the respective collaboration agreements, are recognized based on the sales-based or usage-based royalty exemption; i.e. when, or as, the underlying sales occur, which is when the performance obligation has been satisfied. As described further in Note 3 certain judgment is applied when accounting for the collaboration agreements.

Revenue arrangements that involve two or more partners who contribute to the provision of a specific good or service to a customer are assessed in terms of principal-agent considerations in order to determine the appropriate treatment for the transactions between us and the collaborator and the transactions between us and other third parties. The classification of transactions under such arrangements is determined based on the nature and contractual terms of the arrangement along with the nature of the operations of the participants. Any consideration related to activities in which we are considered the principal, which includes being in control of the good or service before such good or service is transferred to the customer, are accounted for as gross revenues. Any consideration related to activities in which we are considered the agent, are accounted for as net revenues.

Revenues from the sale of pharmaceutical and medical products (*e.g.*, COVID-19 vaccine sales and other sales of peptides and retroviral vectors for clinical supply) are recognized when we transfer control of the product to the customer. Control of the product normally transfers when the customer gains physical possession and we have not retained any significant risks of ownership or future obligations with respect to the product. In general, payments from customers are due within 30 days after invoice. However, with respect to our collaboration with Pfizer Inc., or Pfizer, there is a significant time lag between when revenues are recognized and the payments are received. The contractual settlement of the gross profit share has a temporal offset of more than one calendar quarter. As Pfizer's fiscal quarter for subsidiaries outside the United States differs from ours, it creates an additional time lag between the recognition of revenues and the payment receipt.

For certain contracts, the finished product may temporarily be stored at our location under a bill-and-hold arrangement. Revenues from bill-and-hold arrangements are recognized at the point in time when the customer obtains control of the product and all of the following criteria have been met: (i) the arrangement is substantive; (ii) the product is identified separately as belonging to the customer; (iii) the product is ready for physical transfer to the customer; and (iv) we do not have the ability to use the product or direct it to another customer. In determining when the customer obtains control of the product, we consider certain indicators, including whether title and significant risks and rewards of ownership have transferred to the customer and whether customer acceptance has been received.

Contract Balances

Contract Assets

A contract asset is the right to consideration in exchange for goods or services transferred to the customer. If we transfer goods or services to a customer before the customer pays the respective consideration or before payment is due, a contract asset is recognized for the earned consideration that is conditional.

Trade Receivables

A receivable represents our right to an amount of consideration that is unconditional (*i.e.*, only the passage of time is required before payment of the consideration is due).

Contract Liabilities

A contract liability is the obligation to transfer goods or services to a customer for which we have received consideration (or an amount of consideration is due) from the customer. If a customer pays consideration before we transfer goods or services to the customer, a contract liability is recognized when the payment is made or when the payment is due (whichever is earlier). Contract liabilities are recognized as revenue when we fulfill our performance obligations under the contract.

Refund Liabilities

A refund liability is a consideration which has been received but which will need to be refunded to the customer in the future as it represents an amount to which we are ultimately not entitled under the contract. A refund liability is measured at the amount of consideration received (or receivable) to which we do not expect to be entitled (i.e., amounts not included in the transaction price). We update our estimates of refund liabilities (and the corresponding change in the transaction price) at the end of each reporting period.

2.3.5 Government Grants

Government grants are recognized where there is reasonable assurance that the grant will be received and all attached conditions will be complied with. When the grant relates to an expense item, it is recognized as other income on a systematic basis over the periods that the related costs, for which the grant is intended to compensate, are expensed. When the grant relates to an asset, it is recognized as deferred income within the consolidated statements of financial position. Other income is subsequently recognized in our consolidated statements of profit or loss over the useful life of the underlying asset subject to funding.

2.3.6 Taxes

Current Income Tax

Current income tax assets and liabilities are measured at the amount expected to be recovered from or paid to the taxation authorities. The tax rates and tax laws used to compute the amount are those that are enacted or substantively enacted at the reporting date in the countries where the Group operates and generates taxable income.

In addition, current income taxes presented for the period include adjustments for uncertain tax payments or tax refunds for periods not yet finally assessed by tax authorities, excluding interest expenses and penalties on the underpayment of taxes. In the event that amounts included in the tax return are considered unlikely to be accepted by the tax authorities (uncertain tax positions), a provision for income taxes is recognized.

Management periodically evaluates positions taken in the tax returns with respect to situations in which applicable tax regulations are subject to interpretation and establishes provisions where appropriate.

Deferred Tax

Deferred tax is provided using the liability method on temporary differences between the tax bases of assets and liabilities and their carrying amounts for financial reporting purposes at the reporting date.

Deferred tax liabilities are recognized for all taxable temporary differences, except:

- when the deferred tax liability arises from the initial recognition of goodwill or an asset or liability in a transaction that is not a business combination and, at the time of the transaction, affects neither the accounting profit nor taxable profit or loss; or
- in respect of taxable temporary differences associated with investments in subsidiaries, associates and interests in joint arrangements, when the timing of the reversal of the temporary differences can be controlled and it is probable that the temporary differences will not reverse in the foreseeable future.

Deferred tax assets are recognized for all deductible temporary differences, the carry forward of unused tax credits and any unused tax losses. Deferred tax assets are recognized to the extent that it is probable that taxable profit will be available against which the deductible temporary differences, the carry forward of unused tax credits and unused tax losses can be utilized, except:

- when the deferred tax asset relating to the deductible temporary difference arises from the initial recognition of an asset or liability in a transaction that is not a business combination and, at the time of the transaction, affects neither the accounting profit nor taxable profit or loss; or
- in respect of deductible temporary differences associated with investments in subsidiaries, associates and interests in joint arrangements, deferred tax assets are recognized only to the extent that it is probable that the temporary differences will reverse in the foreseeable future and taxable profit will be available against which the temporary differences can be utilized.

Deferred tax assets and liabilities are measured at the tax rates that are expected to apply in the year in which the asset is realized, or the liability is settled, based on tax rates (and tax laws) that have been enacted or substantively enacted at the reporting date.

Unrecognized deferred tax assets are re-assessed at each reporting date and are recognized to the extent that it has become probable that future taxable profits will allow the deferred tax asset to be recovered.

Recognition of Taxes

Current and deferred tax items are recognized similarly to the underlying transaction either in profit or loss, other comprehensive income or directly in equity.

Current tax assets and current tax liabilities are offset if, and only if, we have a legally enforceable right to set off the recognized amounts and intend either to settle on a net basis, or to realize the asset and settle the liability simultaneously. Deferred tax assets and deferred tax liabilities are only offset when we have a legally enforceable right to set off current tax assets and current tax liabilities and the deferred tax assets and deferred tax liabilities relate to income taxes levied by the same taxation authority on either (i) the same taxable entity or (ii) different taxable entities, which intend either to settle current tax liabilities and assets on a net basis, or to realize the assets and settle the liabilities simultaneously, in each future period in which significant amounts of deferred tax liabilities or assets are expected to be settled or recovered.

Sales Tax

Expenses and assets are recognized net of sales tax, except when the sales tax incurred on a purchase of assets or services is not recoverable from the taxation authority.

The net amount of sales tax recoverable from, or payable to, the taxation authority is included as part of receivables or payables in the consolidated statements of financial position.

Future tax legislation

Based on the Organisation for Economic Co-operation and Development (OECD) Base Erosion and Profit Shifting (BEPS) project to tackle tax avoidance the OECD/G20 Inclusive Framework (an association of about 140 countries) decided to introduce a global minimum taxation for large multinational groups (so-called Pillar 2). The Global Anti-Base Erosion Rules shall ensure large multinational groups pay a minimum level of tax on the income arising in each jurisdiction where they operate. In December 2021, the OECD published so-called OECD Model Rules, which serve as a draft bill for implementation into national domestic law, followed by guidelines and commentaries published in March 2022. In December 2022, the EU adopted a corresponding EU directive (EU 2022/2523), which obliges EU member states to transpose the rules into national domestic law.

The date of application of the national domestic law in Germany is scheduled for the fiscal year 2024. Subsequent, when the OECD Model Rules has entered into force in Germany, the Group will be obliged to file top-up tax information returns for all entities which are part of the group, beginning with the fiscal year 2024. If in any jurisdiction the effective tax rate is below the minimum rate (15%) the Group may be subject to the so-called top-up tax or a so-called qualified domestic minimum top-up tax. To date, no jurisdiction in which the Group operates has transposed the OECD Model Rules into national domestic law and entered into force. The Group closely follows the progress of the legislative process in each country in which the Group operates.

2.3.7 Foreign Currencies

Our consolidated financial statements are presented in Euros, which is also our functional currency. For each entity, the Group determines the functional currency, and items included in the consolidated financial statements of such entities are measured using that functional currency. We use the direct method of consolidation and, on disposal of a foreign operation, the gain or loss that is reclassified to the consolidated statements of profit or loss reflects the amount that arises from using this method.

Transactions and Balances

Transactions in foreign currencies are initially recorded by the Group's entities at their respective functional currency spot rates at the date the transaction first qualifies for recognition.

Monetary assets and liabilities denominated in foreign currencies are translated at the functional currency spot rates of exchange at the reporting date.

Non-monetary items that are measured in terms of historical cost in a foreign currency are translated using the exchange rates at the dates of the initial transactions.

In determining the spot exchange rate to use on initial recognition of the related asset, expense or income (or part of it) on the derecognition of a non-monetary asset or non-monetary liability relating to advance consideration, the date of the transaction is the date on which the Group initially recognizes the non-monetary asset or non-monetary liability arising from the advance consideration. If there are multiple payments or receipts in advance, the Group determines the transaction date for each payment or receipt of advance consideration.

Foreign Currency Translation

Foreign currency translation effects from the translation of operating activities include foreign exchange differences arising on operating items such as trade receivables and trade payables and are either shown as other operating income or expenses on a cumulative basis. Foreign currency translation effects presented within finance income and expenses include foreign exchange differences arising on financing items such as loans and borrowings as well as foreign exchange differences arising on cash and cash equivalents and are either shown as finance income or expenses on a cumulative basis.

Foreign Currency Translation on Consolidation

Upon consolidation, the assets and liabilities of foreign operations are translated into Euros at the rate of exchange prevailing at the reporting date and the transactions recorded in their consolidated statements of profit or loss are translated at exchange rates prevailing at the dates of the transactions.

The exchange differences arising on translation for consolidation are recognized in other comprehensive income. On disposal of a foreign operation, the component of other comprehensive income relating to that particular foreign operation is reclassified to profit or loss.

Any goodwill arising on the acquisition of a foreign operation and any fair value adjustments to the carrying amounts of assets and liabilities arising upon the acquisition are treated as assets and liabilities of the foreign operation and translated at the spot rate of exchange at the reporting date.

2.3.8 Cash Dividend

We recognize a liability to pay a dividend when the distribution is authorized. As per the corporate laws of Germany, a distribution is authorized when it is approved by the general shareholder meeting. A corresponding amount is recognized directly in equity.

2.3.9 Property, Plant and Equipment

Construction in progress is stated at cost. Property, plant and equipment are stated at cost, net of accumulated depreciation and accumulated impairment losses, if any. Such cost includes the cost of replacing part of the property, plant and equipment if the recognition criteria are met. All other repair and maintenance costs are expensed as incurred.

Depreciation is calculated on a straight-line basis over the estimated useful lives of the assets, as follows:

Property, plant and equipment	Useful life (years)
Buildings	10-33
Equipment, tools and installations	5-18

Operating and business equipment has a useful life of 1-10 years and is reported under equipment, tools and installations due to immateriality.

An item of property, plant and equipment initially recognized is derecognized upon disposal (*i.e.*, at the date the recipient obtains control) or when no future economic benefits are expected from its use or disposal. Any gain or loss arising on derecognition of the asset (calculated as the difference between the net disposal proceeds and the carrying amount of the asset) is included in the consolidated statements of profit or loss when the asset is derecognized.

The residual values, useful lives and methods of depreciation of property, plant and equipment are reviewed at each financial year-end and adjusted prospectively, if appropriate.

2.3.10 Leases

At the inception of a contract, we assess whether the contract is, or contains, a lease. A contract is, or contains, a lease if the contract conveys the right to control the use of an identified asset for a period of time in exchange for consideration. To assess whether a contract conveys the right to control the use of an identified asset, we assess whether:

- the contract involves the use of an identified asset—this may be specified explicitly or implicitly and should be physically distinct or represent substantially all of the capacity of a physically distinct asset. If the supplier has a substantive substitution right, then the asset is not identified;

- we have the right to obtain substantially all of the economic benefits from the use of the asset throughout the period of use; and
- we have the right to direct the use of the asset. We possess this right when we hold the decision-making rights that are most relevant to changing how and for what purpose the asset is used. In rare cases where the decision about how and for what purpose the asset is used is predetermined, the Group has the right to direct the use of the asset if either:
  - we have the right to operate the asset; or
  - we designed the asset in a way that predetermines how and for what purpose it will be used.

At inception or on reassessment of a contract that contains a lease component, the consideration in the contract is allocated to each lease component on the basis of their relative standalone prices. However, for leases of land and buildings in which it is a lessee, we have elected not to separate non-lease components, and instead account for the lease and non-lease components as a single lease component.

We recognize a right-of-use asset and a lease liability at the lease commencement date.

The right-of-use asset is initially measured at cost, which comprises the initial amount of the lease liability adjusted for any lease payments made at or before the commencement date, plus any initial direct costs incurred and an estimate of the costs to dismantle and remove the underlying asset or to restore the underlying asset or the site on which it is located, less any lease incentives received by the Group.

The right-of-use asset is subsequently depreciated using the straight-line method from the commencement date to the earlier of the end of the useful life of the right-of-use asset and the end of the lease term. The estimated useful lives of right-of-use assets are determined on the same basis as those of property, plant and equipment. In addition, the right-of-use asset is periodically reduced by impairment losses, if any, and adjusted for certain remeasurements of the lease liability.

The lease liability is initially measured at the present value of the lease payments that are not paid at the commencement date, discounted using the incremental borrowing interest rate implicit in the lease or, if that rate cannot be readily determined, the Group's incremental borrowing rate. Generally, the incremental borrowing rate is used as the discount rate.

Lease payments included in the measurement of the lease liability comprise the following:

- fixed payments, including in-substance fixed payments;
- variable lease payments that depend on an index or a rate, initially measured using the index or rate as of the commencement date;
- amounts expected to be payable under a residual value guarantee; and
- the exercise price under a purchase option that is reasonably certain to be exercised, lease payments in an optional renewal period if it is reasonably certain that the extension option is exercised, and penalties for early termination of a lease unless it is reasonably certain that the contract is not terminate early.

The lease liability is subsequently measured at amortized cost using the effective interest method. It is remeasured when there is a change in future lease payments arising from a change in an index or rate, if there is a change in the estimate of the amount expected to be payable under a residual value guarantee, or if we change our assessment of whether we will exercise a purchase, extension or termination option. When the lease liability is remeasured, a corresponding adjustment is made to the carrying amount of the right-of-use asset or is recorded in the consolidated statements of profit or loss if the carrying amount of the right-of-use asset has been reduced to zero.

Right-of-use assets are presented separately and lease liabilities are presented in "Financial Liabilities" in the consolidated statements of financial position.

Depreciation is calculated on a straight-line basis over the estimated useful lives of the assets or shorter lease term, as follows:

Right-of-use assets	Useful life or shorter lease term (years)
Buildings	2-25
Equipment, tools and installations	2-5
Production facilities	2-3
Automobiles	3-4

Short-Term Leases and Leases of Low-Value Assets

We have elected not to recognize right-of-use assets and lease liabilities for short-term leases of machinery that have a lease term of 12 months or less or leases of low-value assets. We recognize the lease payments associated with these leases as an expense in the consolidated statements of profit or loss on a straight-line basis over the lease term.

2.3.11 Intangible Assets

Intangible assets acquired separately are measured on initial recognition at cost. The cost of intangible assets acquired in a business combination is their fair value at the date of acquisition. Following initial recognition, intangible assets are carried at cost less any accumulated amortization and accumulated impairment losses.

The useful lives of intangible assets are assessed as either finite or indefinite.

Intangible assets with finite lives are amortized generally on a straight-line basis over the useful life and assessed for impairment whenever there is an indication that the intangible asset may be impaired. The amortization period and the amortization method for an intangible asset with a finite useful life are reviewed at the end of each reporting period at the least. The amortization expense on intangible assets with finite lives is recognized in the consolidated statements of profit or loss in the expense category that is consistent with the function of the intangible assets.

A summary of the useful lives applied to the Group's intangible assets is as follows:

Intangible assets	Useful life (years)
Intellectual property rights	8-20
Licenses	3-20
Software	3-8

Intangible assets with indefinite useful lives are not amortized, but are tested for impairment at least annually, or when there is an indication for impairment, either individually or at the level of a cash-generating unit (see Note 2.3.14 for further details). The assessment of indefinite life is reviewed annually to determine whether the indefinite life continues to be supportable. If not, the change in useful life from indefinite to finite is made on a prospective basis.

We have classified advanced payments on intangible assets as intangible assets, which are not yet ready for use. Advanced payments on intangible assets are tested for impairment on an annual basis.

An intangible asset is derecognized upon disposal (*i.e.*, at the date the recipient obtains control) or when no future economic benefits are expected from its use or disposal. Any gain or loss arising upon derecognition of the asset (calculated as the difference between the net disposal proceeds and the carrying amount of the asset) is included in the consolidated statements of profit or loss.

Research and Development Costs

Research costs are expensed as incurred. Development expenditures on an individual project are recognized as an intangible asset if, and only if, all of the following six criteria can be demonstrated:

- the technical feasibility of completing the intangible asset so that the asset will be available for use or sale;
- the intention to complete the project;
- the ability and intention to use or sell the asset;
- how the asset will generate future economic benefits;
- the availability of resources to complete the asset; and

- the ability to reliably measure the expenditure during development.

Due to the inherent risk of failure in pharmaceutical development and the uncertainty of approval, management has determined that these criteria are not met in the biotech sector until regulatory approval has been obtained. The related expenditure is reflected in the consolidated statements of profit or loss in the period in which the expenditure is incurred.

Following initial recognition of the development expenditure as an asset, the asset is carried at cost less any accumulated amortization and accumulated impairment losses. Amortization of the asset begins when development is complete and the asset is available for use. It is amortized over the period of expected future benefit. Amortization is recorded in cost of sales. During the period of development, the asset is tested for impairment annually.

2.3.12 Financial Instruments

A financial instrument is any contract that gives rise to a financial asset of one entity and a financial liability or equity instrument of another entity.

i) Financial Assets

Initial Recognition and Measurement

Financial assets mainly include trade receivables, cash and cash equivalents, cash deposits with an original term of six months recognized as other financial assets as well as equity investments. Financial assets are initially measured at fair value and – depending on their classification – subsequently measured at amortized cost, fair value through other comprehensive income (OCI) or fair value through profit or loss.

Subsequent Measurement

The measurement of financial assets depends on their classification, as described below.

Financial Assets measured at Amortized Cost

Financial assets at amortized cost include trade receivables. With respect to trade receivables, we applied the practical expedient which means that they are measured at the transaction price determined under IFRS 15. Refer to the accounting policies in Note 2.3.4. Other financial assets are measured at amortized costs since they are held to collect contractual cash flows, which are solely payments of principal and interest. Gains and losses are recognized in our consolidated statements of profit or loss when the financial asset is derecognized, modified or impaired.

Financial Assets designated at Fair Value through OCI (Equity Instruments)

Upon initial recognition, we can irrevocably elect to classify equity investments as equity instruments designated at fair value through OCI when they meet the definition of equity under IAS 32 and are not held for trading. The classification is determined on an instrument-by-instrument basis. Gains and losses on these financial assets are never recycled to profit or loss. Dividends are recognized as other income in the consolidated statements of profit or loss when the right of payment has been established. Equity instruments designated at fair value through OCI are not subject to impairment assessment. We elected to irrevocably classify our non-listed and listed equity investments under this category. They are recognized using trade date accounting.

Financial Assets at Fair Value through Profit or Loss

Derivatives not designated as hedging instruments are measured at fair value through profit or loss. A financial asset exists if the derivative has a positive fair value.

Derecognition

A financial asset (or, where applicable, a part of a financial asset or part of a group of similar financial assets) is primarily derecognized (i.e., removed from the consolidated statements of financial position) when the rights to receive cash flows from the asset have expired or have been transferred in terms of fulfilling the derecognition criteria.

Impairment of Financial Assets

An allowance for expected credit losses (ECLs) is considered for all non-derivative financial debt investments including cash, time deposits and debt securities of the Group. ECLs are based on the difference between the contractual cash flows due in accordance with the contract and all of the cash flows that the Group expects to receive, discounted at an approximation of the original effective interest rate. The expected cash flows will include cash flows from the sale of collateral held or other credit enhancements that are integral to the contractual terms.

For trade receivables and contract assets, the Group applies a simplified approach in calculating ECLs. Therefore, the Group does not track changes in credit risk, but instead recognizes a loss allowance based on lifetime ECLs at each reporting date. We have established an ECL-model that is based on the probability of default (PD), considers the respective country default probabilities and takes the maturities into account. For the PD of companies, we use the maturities of the trade receivables and the scoring of the companies.

ii) Financial Liabilities

Financial liabilities are generally measured at amortized cost using the effective-interest method. Derivatives with negative fair values not designated as hedging instruments and liabilities for contingent consideration in business combinations are measured at fair value.

All financial liabilities are recognized initially at fair value and, in the case of loans and borrowings and payables, net of directly attributable transaction costs.

Financial liabilities measured at amortized cost, include loans and borrowings, trade payables and other financial liabilities. They are measured at amortized cost using the effective interest rate (EIR) method. Gains and losses are recognized in the consolidated statements of profit or loss when the liabilities are derecognized as well as through the EIR amortization process.

Amortized cost is calculated by taking into account any discount or premium on acquisition and fees or costs that are an integral part of the EIR. The EIR amortization is included as finance costs in the consolidated statements of profit or loss.

Derecognition

A financial liability is derecognized when the obligation under the liability is discharged or cancelled or expires. When an existing financial liability is replaced by another from the same lender on substantially different terms, or the terms of an existing liability are substantially modified, such an exchange or modification is treated as the derecognition of the original liability and the recognition of a new liability. The difference in the respective carrying amounts is recognized in the consolidated statements of profit or loss.

iii) Expenses and Income from Exchange Forward Contracts

Effects from foreign exchange forward contracts, which are measured at fair value through profit or loss, are either shown as other operating income or expenses on a cumulative basis and might switch between those two positions during the year-to-date reporting periods.

2.3.13 Inventories

Inventories are valued at the lower of cost and net realizable value.

Costs incurred in bringing each product to its present location and condition are accounted for as follows:

- raw materials and supplies: purchase cost on a first-in / first-out basis; or
- unfinished goods and finished goods: cost of direct materials and labor, including both internal manufacturing and third-party contract manufacturing organizations, or CMOs, and a proportion of manufacturing overheads based on the normal operating capacity, but excluding borrowing costs.

Net realizable value is the estimated selling price in the ordinary course of business less estimated costs of completion and the estimated costs necessary to make the sale. Write-offs are recorded if inventories are expected to be unsaleable, do not fulfill the specification defined by our quality standards or if its shelf-life has expired. For inventories subject to the collaboration partners' gross profit share mechanism, we consider the contractual compensation payments in the estimate of the net realizable value.

2.3.14 Impairment of Non-Financial Assets

At each reporting date, we assess whether there is an indication that a non-financial asset may be impaired. Goodwill is tested for impairment at least annually as of October 1. Impairment is determined for goodwill by assessing the recoverable amount of each cash-generating unit (or group of CGUs) to which the goodwill relates. If any indication exists, or when annual impairment testing is performed, we estimate the asset's or CGU's recoverable amount. The recoverable amount is the higher of an asset's or CGU's fair value less costs of disposal and its value in use. The recoverable amount is determined for an individual asset, unless the asset does not generate cash inflows that are largely independent of those from other assets or groups of assets. In case the asset is not generating independent cash inflows the impairment test is performed for the smallest group of assets that generate largely independent cash inflows from other assets (CGU). When the carrying amount of an asset or cash-generating unit exceeds its recoverable amount, the asset or the non-current assets of the CGU are considered impaired and written down to their recoverable amount.

In assessing value in use, the estimated future cash flows are discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset. In determining fair value less costs of disposal, recent market transactions and our market capitalization are taken into account.

If a value in use is determined it is based on detailed budgets and forecast calculations, which are prepared separately for each of our cash-generating units to which the individual assets are allocated. These budgets and forecast calculations generally cover a period of at least five years. A long-term growth rate is calculated and applied to project future cash flows after the last year of the detailed planning period.

Impairment losses are recognized in the consolidated statements of profit or loss in expense categories consistent with the function of the impaired asset.

For assets excluding goodwill, an assessment is made at each reporting date to determine whether there is an indication that previously recognized impairment losses no longer exist or have decreased. If such indication exists, the asset's or cash-generating unit's recoverable amount is estimated. A previously recognized impairment loss is reversed only if there has been a change in the assumptions used to determine the asset's recoverable amount since the last impairment loss was recognized. The reversal is limited so that the carrying amount of the asset does not exceed its recoverable amount, nor exceed the carrying amount that would have been determined, net of depreciation, had no impairment loss been recognized for the asset in prior years. Such reversal is recognized in the consolidated statements of profit or loss.

2.3.15 Cash and Cash Equivalents

Cash and cash equivalents comprise cash at banks and on hand and short-term investments we consider to be highly liquid (including deposits and money market funds) with an original maturity of three months or less, that are readily convertible to a known amount of cash and subject to an insignificant risk of changes in value. Deposits with an original maturity of more than three months are recognized as other financial assets.

2.3.16 Provisions

Provisions are recognized when there is a present obligation (legal or constructive) as a result of a past event, it is probable that an outflow of resources embodying economic benefits will be required to settle the obligation and a reliable estimate can be made of the amount of the obligation. When we expect some or all of a provision to be reimbursed, for example, under an insurance contract, the reimbursement is recognized as a separate asset, but only when the reimbursement is virtually certain.

A provision is also recognized for certain contracts with suppliers for which the unavoidable costs of meeting the obligations exceed the economic benefits expected to be received. The economic benefits considered in the assessment comprise the future benefits we are directly entitled to under the contract as well as the anticipated future benefits that are the economic consequence of the contract if these benefits can be reliably determined.

The expense relating to a provision is presented in the consolidated statements of profit or loss net of any reimbursement.

2.3.17 Share-Based Payments

Employees (and others providing similar services) receive remuneration in the form of share-based payments, which are settled in equity instruments (equity-settled transactions) or in cash (cash-settled transactions).

In accordance with IFRS 2, share-based payments are generally divided into cash-settled and equity-settled. Both types of payment transactions are measured initially at their fair value as of the grant date. The fair value is determined using an appropriate valuation model, further details of which are given in Note 16. Rights granted under cash-settled transactions are remeasured at fair value at the end of each reporting period until the settlement date. The cost of share-based payment awards is recognized over the relevant service period, applying either the straight-line method or the graded vesting method, where applicable.

These costs are recognized in cost of sales, research and development expenses, sales and marketing expenses or general and administrative expenses, together with a corresponding increase in equity (other reserves) or other liabilities, over the period in which the service is provided (the vesting period). The cumulative expense recognized for cash- and equity-settled transactions at each reporting date until the vesting date reflects the extent to which the vesting period has expired, and also reflects the best estimate of the number of equity instruments that will ultimately vest.

If we have a choice of settling either in cash or by providing equity instruments, the rights granted are accounted for as an equity-settled transaction, unless there is a present obligation to settle in cash.

If, due to local tax regulations, an amount is withheld for the employee's tax obligations and paid directly to the tax authorities in cash on the employee's behalf, the entire share-based payment program remains an equity-settled plan based on the IFRS 2 classification. Accordingly the amount withheld for the employee's tax obligations expected to be paid directly to the tax authorities is reclassified from Other reserves to Other non-financial liabilities.

2.3.18 Treasury Shares

We apply the par value method to our repurchases of outstanding American Depositary Shares, or ADSs. Accordingly, the nominal value of acquired treasury shares is deducted from equity shown in a separate category, Treasury Shares. Any premium paid in excess of the nominal value of a repurchased ADS is deducted from capital reserves. On the trade date, we recognize a liability and on the settlement date, we settle in cash. We recognize the foreign exchange differences that may occur between trade and settlement date as profit or loss.

2.4 Standards Applied for the First Time

In 2022, the following potentially relevant new and amended standards and interpretations became effective, but did not have an impact on our consolidated financial statements:

Standards / Interpretations	Date of application
Amendments to IFRS 3 Business Combinations: Reference to the Conceptual Framework	January 1, 2022
Amendments to IAS 37 Provisions, Contingent Liabilities and Contingent Assets: Onerous Contracts – Cost of Fulfilling a Contract Amendments to IAS 37	January 1, 2022
Amendments to IAS 16 Property, Plant and Equipment: Proceeds before Intended Use	January 1, 2022
Annual Improvements to IFRS Standards 2018-2020	January 1, 2022

2.5 Standard Issued but Not Yet Effective

The new and amended standards and interpretations that are issued, but not yet effective, up to the date of issuance of the financial statements and that might have an impact on our financial statements are disclosed below. We have not adopted any standards early and intend to adopt these new and amended standards and interpretations, if applicable, when they become effective.

Standards / Interpretations		Date of application
IFRS 17 Insurance Contracts		January 1, 2023
Amendments to IFRS 17 Insurance Contracts		January 1, 2023
Amendments to IAS 1 and IFRS Practice Statement 2: Disclosure of Accounting Policies		January 1, 2023
Amendments to IAS 8 Accounting policy changes: Definition of Accounting Estimates		January 1, 2023
Amendments to IAS 12 Income Taxes: Deferred Tax related to Assets and Liabilities arising from a Single Transaction		January 1, 2023
Amendments to IAS 1 Presentation of Financial Statements: Classification of Liabilities as Current or Non-Current	(1)	January 1, 2024
Amendments to IAS 1 Presentation of Financial Statements: Non-current Liabilities with Covenants	(1)	January 1, 2024
Amendments to IFRS 16 Leases: Lease Liability in a Sale and Leaseback	(1)	January 1, 2024

(1) Standards had not yet been endorsed in the European Union at the time of publication.

We do not expect a significant impact of the application of any of these standards and amendments.

3 Significant Accounting Judgments, Estimates and Assumptions

The preparation of the consolidated financial statements requires management to make judgments, estimates and assumptions that affect the reported amounts of revenues, expenses, assets and liabilities, the accompanying disclosures and the disclosure of contingent liabilities. Uncertainty about these assumptions and estimates could result in outcomes that require a material adjustment to the carrying amount of assets or liabilities affected in future periods.

Significant accounting judgement as well as key assumptions concerning the future and other key sources of estimation uncertainty at the reporting date that have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year are described below. We based our assumptions and estimates on parameters available when the consolidated financial statements were prepared. Existing circumstances and assumptions about future developments, however, may change due to market changes or circumstances arising that are beyond the control of the Group. Such changes are reflected in the assumptions when they occur.

Revenues from Contracts with Customers

We applied the following judgments, estimates and assumptions that significantly affect the determination of the amount and timing of revenues from contracts with customers:

Identification and Determination of Performance Obligations

We generate revenues from collaboration and license agreements, which contain multiple elements, including licenses to use, research, develop, manufacture and commercialize candidates and products, research and development services as well as obligations to develop and manufacture preclinical and clinical material and products. We determined that those collaboration and license agreements qualify as contracts with customers. A contract is an agreement between two or more parties that establishes enforceable rights and obligations. At inception of each agreement, we apply judgment when determining which promises represent distinct performance obligations. If promises are not distinct, they are combined until the bundle of promised goods and services is distinct. For some agreements, this results in accounting for goods and services promised in a collaboration and license agreement as a single performance obligation with a single measure of progress. For these combined performance obligations, we assess which of these promises is the predominant promise to determine the nature of the performance obligation. When licenses are granted, we determined that the grant of the license is the predominant promise within the combined performance obligations. It is assessed that we grant our customers a right to access or a right to use our intellectual property due to the collaboration and license agreements.

Measurement of the Transaction Price

Our collaboration and license agreements often include variable considerations, which are contingent on the occurrence or non-occurrence of a future event *(i.e.*, reaching a certain milestone). When determining deferred revenues of a collaboration and license agreement, we need to estimate the amount of consideration to which we will be entitled in exchange for transferring the promised goods or services to our customers.

As there are usually only two possible outcomes (i.e., milestone is reached or not), we have assessed that the method of the most likely amount is the best method to predict the amount of consideration to which we will be entitled. At contract inception, the most likely amount for milestone payments is estimated to be zero. We have assessed that the likelihood of achieving the respective milestone decreases depending on how far the expected date of achieving the milestone lies in the future. At each reporting date, we use judgment to determine when to include variable consideration in the transaction price, such that it is highly probable that a significant revenue reversal in the amount of cumulative revenue recognized will not occur when the associated uncertainty with respect to the variable consideration is subsequently resolved. We have concluded that future milestone payments are fully constrained at the end of the current fiscal year.

Future milestone payments would become unconstrained at the satisfaction of the milestone event, specifically a development event, a regulatory approval or achievement of a sales milestone.

Allocation of the Transaction Price to Performance Obligations and Revenue Recognition as Performance Obligations are Satisfied

We allocate the transaction price to performance obligations based on their relative standalone selling prices, which are generally based on our best estimates and interpretations of facts and circumstances of each contractual agreement and may require significant judgment to determine appropriate allocation.

Upfront payments and reimbursement for expenses are initially deferred on our consolidated statements of financial position. We assessed that no significant financing component exists within our collaboration agreements since the overall business purpose of advanced payments is to support the payment structure other than to provide a significant benefit of financing. For performance obligations in which the costs vary based on progress, an input-based measure considering cost incurred depicts most reliably the progress of the related research activities. In other cases, revenue recognition on a straight-line basis may most reliably depict our performance toward complete satisfaction. If the contractual activities progress, the achievement of development milestones will be used to measure the progress toward complete satisfaction. We evaluate the measure of progress each reporting period and, if necessary, adjust the measure of performance and related revenue recognition. Any such adjustments are recorded on a cumulative catch-up basis, which would affect revenues and net loss in the period of adjustment.

Upon successfully commercializing a pharmaceutical product, the collaboration and license agreements also provide for additional profit-sharing or tiered royalties earned when customers recognize net sales of licensed products as well as sales milestone payments. Revenue is recognized based on the sales-based or usage-based royalty exemption; *i.e.*. when, or as, the underlying sales occur, which is when the performance obligation has been satisfied.

Principal-Agent Considerations

Collaboration agreements that involve two or more partners who contribute to the provision of a specific good or service to a customer are assessed in terms of principal-agent considerations. Under our current collaboration agreements, the allocation of marketing and distribution rights defines territories in which the collaboration partner acts as a principal respectively. We recognize revenue net based on the collaboration partners' gross profit in territories where the partner is responsible for supply and on a gross basis when directly supplying our customers in our territories when control has been transferred. Amounts paid to collaboration partners for their share of our profits earned where we are the principal in the transaction are recorded as cost of sales.

Pfizer Agreement Characteristics

With respect to our collaboration with Pfizer, commercial revenues are recognized based on our collaboration partners' gross profit from COVID-19 vaccine sales, which is shared under the respective collaboration agreement. In determining commercial revenues pursuant to this collaboration agreement, we are reliant on our collaboration partner for details regarding its gross profit for the period at hand. Certain of the information which our collaboration partner provides us with to identify the gross profit are, by necessity, preliminary and subject to change.

Pfizer's gross profit shares are calculated based on sales and include consideration of transfer prices. The latter includes manufacturing and shipping costs, which represent standard prices and include mark-ups on manufacturing costs as specified by the terms of the agreement. Manufacturing and shipping cost variances were considered as far as those have been identified. Nevertheless, those input parameters may be adjusted once actual costs are determined. The

sales as reported by Pfizer have been used to estimate license obligations in terms of royalties and sales milestones. Sales milestones and royalties are recognized as they are earned by the partners. Sales milestones are shared equally, while royalty payments are borne by the partners on the basis of revenues in the territories for which the partners are responsible and subsequently deducted as cost under the gross profit shared. The estimated royalty fees applied to net sales reflect the license obligations to the extent currently identified from third party contractual arrangements. Changes in estimates are accounted for prospectively, when determined.

Manufacturing cost variances include expenses from unused contract manufacturing capacities and overstock inventories finally scrapped. As only materialized costs – which means manufacturing capacities finally lapsed or inventories finally scrapped – are cash-effectively shared with the partner, the gross profit share impact is anticipated once assessed as highly probable to occur. Any changes to this assessment will be recognized prospectively.

Pfizer's determination of manufacturing and shipping costs also affects the transfer prices that have been charged to COVID-19 vaccine supplies that it manufactures and supplies to us and may be subject to adjustment whenever manufacturing and shipping cost variances are identified. Likewise, our own cost of sales and the respective gross profit share owed to our partner may be adjusted prospectively, when changes are determined.

For the carrying amounts of the revenue recognition-related contract balances, see Note 6. Judgment is required in determining whether a right to consideration is unconditional and thus qualifies as a receivable.

Provisions and Contingencies

We are currently confronted with claims and legal proceedings. Those include claims from third parties demanding indemnification for purported infringement of third party's patent or other intellectual proprietary rights as well as product liability claims. For these matters we assess whether provisions must be recorded and whether contingencies must be reported.

Due to uncertainties relating to these matters, provisions and contingencies are based on the best information available.

Significant judgment is required in the determination of whether and when a provision is to be recorded and what the appropriate amount for such provision should be. Notably, judgment is required in the following areas:

- Determining whether an obligation exists
- Determining the probability of outflow of economic benefits
- Determining whether the amount of an obligation is reliably estimable
- Estimating the amount of the expenditure required to settle the present obligation

At the end of each reporting period, we reassess the potential obligations related to our pending claims and litigation and adjust our respective provisions and contingencies to reflect the current best estimate. In addition, we monitor and evaluate new information that we receive after the end of the respective reporting period, but before the Consolidated Financial Statements are authorized for issue, to determine whether this provides additional information regarding conditions that existed at the end of the reporting period. Changes to the estimates and assumptions and outcomes that differ from these estimates and assumptions, could require material adjustments to the carrying amounts of the respective provisions recorded and additional provisions.

The expected timing or amounts of any outflows of economic benefits resulting from these lawsuits and claims are uncertain and difficult to estimate or even not estimable, as they generally depend on the duration of the legal proceedings and settlement negotiations required to resolve the litigation and claims and the unpredictability of the outcomes of legal disputes in several jurisdictions.

Disclosures in respect of third-party claims and litigation for which no provisions have been recognized are made in the form of contingent liabilities, unless a potential outflow of resources is considered remote. It is not practicable to estimate the financial impact of contingent liabilities due to the uncertainties around lawsuits and claims as outlined above.

For further disclosures and carrying amounts relating to provisions and contingencies, see Note **17**.

Research and Development Expenses

The nature of our business and primary focus of our activities, including development of our platforms and manufacturing technologies, generate a significant amount of research and development expenses. Research costs are expensed as incurred. Development expenditures on an individual project are recognized as an intangible asset if, and only if, the capitalization criteria are met. We have entered into agreements under which third parties grant licenses to us. If those licenses grant access to technologies, both parties jointly perform research or development activities and both are exposed to significant risks and rewards of the activities, costs incurred with the agreements are not treated differently from costs related to own product candidates. If the agreements grant us rights to use certain patents and technologies that meet the definition of an identifiable asset, they are treated as acquired intangible assets. Based on our assessment we have concluded that, due to the inherent risk of failure in pharmaceutical development and the uncertainty of approval, these criteria are regularly not met before regulatory approval is achieved. The related expenditure is reflected in the consolidated statements of profit or loss in the period in which the expenditure is incurred. Sales-based milestone or royalty payments incurred under license agreements relating to self-developed intangibles after the approval date of the respective pharmaceutical product are recognized as expenses as incurred. Prior to initial regulatory approval, costs relating to production of pre-launch products which do not fulfill capitalization criteria are expensed as research and development expenses in the period incurred.

Share-Based Payments

Determining the fair value of share-based payment transactions requires the most appropriate valuation for the specific program, which depends on the underlying terms and conditions. We used valuation models like a binomial or Monte-Carlo simulation model for the measurement of the cash- and equity-settled transactions' fair value considering certain assumption relating to, *e.g.*, the volatility of stock price, the determination of an appropriate risk-free interest rate, expected dividends and the probability of reaching a minimum hurdle to exercise the relevant options. For awards which were granted prior to the initial public offering, at a time where no quoted market prices existed, the valuation model assumptions included the option's underlying share price. For awards which were granted post the initial public offering, the grant date's share prices on the Nasdaq Global Select Market were included in the valuation.

A retention assumption is applied when estimating the number of equity instruments for which service conditions are expected to be satisfied and will be revised in case material differences arise. Ultimately, a true-up to the number satisfied until settlement date will be recorded.

For further disclosures relating to share-based payments, see Note 16.

Embedded Derivatives

Defining the fair value of the embedded derivative which was bifurcated from the convertible note, as host contract, requires significant judgment. We used the Cox-Rubinstein binomial tree model when determining the fair value of the conversion right, the embedded derivative which was bifurcated from the convertible note, as host contract. The primary inputs used in the model include stock price volatility, credit spreads, risk-free interest rate and foreign exchange forward rates. Stock price volatility is based on our implied volatility, credit risk is model implied and adjusted for movement in credit spreads for B-rated corporates at each valuation date, the risk-free interest rate is based on currency specific time congruent IBOR and swap rates whereas the foreign exchange forward rates are based on observable market data.

For further disclosures relating to financial instruments, see Note 12.

Income Taxes

We are subject to income taxes in more than one tax jurisdiction. Due to the increasing complexity of tax laws and the corresponding uncertainty regarding the legal interpretation by the fiscal authorities, tax calculations are generally subject to an elevated amount of uncertainty. To the extent necessary, possible tax risks are taken into account in the form of provisions.

We do not recognize or impair deferred tax assets when it is unlikely that a corresponding amount of future taxable profit will be available against which the deductible temporary differences, tax loss carry forwards and tax credits can be utilized. When determining whether sufficient future taxable profit will be available against which the deductible temporary differences, tax loss carry forwards and tax credits can be utilized, significant management judgment is required. This includes management's assessment on the character and amounts of taxable future profits, the periods in which those profits are expected to occur, and the availability of tax planning opportunities. As a matter of policy, convincing evidence supporting the recognition of deferred tax assets is required if an entity has suffered a loss in either the current or the preceding periods.

Our management continued to determine that deferred tax assets on tax losses carried forward that relate to subsidiaries which have a loss making history cannot be recognized. This includes the assessment that those subsidiaries neither have any taxable temporary difference nor any tax planning opportunities available that could support the recognition of deferred tax assets.

For further disclosures relating to deferred taxes, see Note 8.

4 Group Information

Information about Subsidiaries

The consolidated financial statements include the following subsidiaries:

Name	Country of incorporation	Registered office	% equity interest December 31, 2022	% equity interest December 31, 2021
BioNTech BioNTainer Holding GmbH	Germany	Mainz (2)	100%	n/a(1)
BioNTech Cell & Gene Therapies GmbH	Germany	Mainz (2)	100%	100%
BioNTech Delivery Technologies GmbH	Germany	Halle (2)	100%	100%
BioNTech Diagnostics GmbH	Germany	Mainz (2)	100%	100%
BioNTech Europe GmbH	Germany	Mainz (2)	100%	100%
BioNTech Individualized mRNA Manufacturing GmbH i.G.	Germany	Mainz (2)	100%	n/a(1)
BioNTech Innovation GmbH	Germany	Mainz (2)	100%	100%
BioNTech Innovative Manufacturing Services GmbH	Germany	Idar-Oberstein (2)	100%	100%
BioNTech Idar-Oberstein Services GmbH	Germany	Idar-Oberstein (2)	100%	n/a(1)
BioNTech Manufacturing GmbH	Germany	Mainz (2)	100%	100%
BioNTech Manufacturing Marburg GmbH	Germany	Marburg (2)	100%	100%
BioNTech Innovation and Services Marburg GmbH	Germany	Marburg (2)	100%	100%
JPT Peptide Technologies GmbH	Germany	Berlin (2)	100%	100%
NT Security and Services GmbH	Germany	Mainz (2)	100%	n/a(1)
reSano GmbH	Germany	Mainz (2)	100%	100%
BioNTech Real Estate Holding GmbH	Germany	Holzkirchen (2)	100%	100%
BioNTech Real Estate Verwaltungs GmbH	Germany	Holzkirchen (2)	100%	100%
BioNTech Real Estate GmbH & Co. KG	Germany	Holzkirchen (2)	100%	100%
BioNTech Real Estate An der Goldgrube GmbH & Co. KG	Germany	Holzkirchen (2)	100%	100%
BioNTech Real Estate Haus Vier GmbH & Co. KG	Germany	Holzkirchen (2)	100%	100%
BioNTech Real Estate Adam-Opel-Straße GmbH & Co. KG	Germany	Holzkirchen (2)	100%	100%
BioNTech Real Estate An der Goldgrube 12 GmbH & Co. KG	Germany	Holzkirchen (2)	100%	100%
BioNTech Australia Pty Ltd	Australia	Melbourne	100%	n/a(1)
BioNTech R&D (Austria) GmbH	Austria	Vienna	100%	100%
BioNTech (Shanghai) Pharmaceuticals Co. Ltd.	China	Shanghai	100%	100%
BioNTech Rwanda Ltd.	Rwanda	Kigali	100%	n/a(1)
BioNTech Pharmaceuticals Asia Pacific Pte. Ltd.	Singapore	Singapore	100%	100%
BioNTech Turkey Tıbbi Ürünler Ve Klinik Araştirma Ticaret Anonim Şirketi	Turkey	Istanbul	100%	100%
BioNTech UK Limited	United Kingdom	London (previously Reading)	100%	100%
BioNTech Research and Development, Inc.	United States	Cambridge	100%	100%
BioNTech USA Holding, LLC	United States	Cambridge	100%	100%
BioNTech US Inc.	United States	Cambridge	100%	100%
JPT Peptide Technologies Inc.	United States	Cambridge	100%	100%

(1) Has been incorporated during the year ended December 31, 2022.
(2) Subsidiary makes use of the exemption of Sections 264 para. 3 and 264b HGB for the 2022 financial year.

All entities listed above are included in our consolidated financial statements.

Parent Company

ATHOS KG, Holzkirchen, Germany is the sole shareholder of AT Impf GmbH, Munich, Germany, and beneficial owner of the following percentage of ordinary shares in BioNTech at the dates as indicated. ATHOS KG via AT Impf GmbH has de facto control over BioNTech based on its substantial shareholding, which practically enabled it to exercise the majority of voting rights to pass resolutions at our Annual General Meeting, or AGM.

Name	Country of incorporation	Registered office	Ownership of ordinary shares in BioNTech (in %) December 31, 2022	December 31, 2021
AT Impf GmbH	Germany	Munich	43.42%	43.75%

Entity with significant Influence over the Group

Medine GmbH, Mainz, owned the following percentage of ordinary shares in BioNTech at the following dates as indicated:

Name	Country of incorporation	Registered office	Ownership of ordinary shares in BioNTech (in %) December 31, 2022	December 31, 2021
Medine GmbH	Germany	Mainz	17.38%	17.11%

5 Business Combinations

Business Combinations during the year ended December 31, 2021

BioNTech R&D (Austria) GmbH, or BioNTech Austria (previously PhagoMed Biopharma GmbH)

On October 1, 2021, BioNTech Austria, an Austrian biotechnology company, specialized in the development of a new class of antibacterials, was fully acquired to expand our infectious disease portfolio capabilities.

The total consideration comprised an upfront consideration of €50.0 million (less acquired debt) of which €23.2 million are considered remuneration and will be recognized as personnel expense over a three-year period in which services are to be provided. An additional consideration of maximum €100.0 million is dependent the achievement of certain clinical development milestones. At the acquisition date, the contingent consideration was recognized with its fair value of €5.5 million and is presented as non-current financial liabilities in the consolidated statements of financial position (see Note 12).

The final fair values and values in accordance with IFRS 3 of the identifiable net assets of BioNTech Austria as of the date of acquisition were as follows:

(in millions)	**Fair value recognized on acquisition** BioNTech R&D (Austria) GmbH
Assets	
Intangible assets	€ 43.3
Other non-financial assets non-current and current	1.5
Total assets	**€ 44.8**
Liabilities	
Other non-financial liabilities non-current and current	15.4
Total liabilities	**€ 15.4**
Total identifiable net assets at fair value	**€ 29.4**
Bargain purchase	(2.2)
Consideration transferred	**€ 27.2**
Consideration	
Cash paid	21.7
Contingent consideration liability	5.5
Total consideration	**€ 27.2**

(in millions)	BioNTech R&D (Austria) GmbH
Transaction costs of the acquisition (included in cash flows from operating activities)	€ (0.5)
Net cash acquired (included in cash flows used in investing)	0.9
Cash paid (included in cash flow used in investing activities)	(21.7)
Net cash flow on acquisition	**€ (21.3)**

The intangible assets comprise a pre-clinical candidate, PM-477 as well as a platform.

A bargain purchase of €2.2 million was recognized in other operating income.

The consolidated statements of profit or loss include the results of BioNTech Austria since the acquisition date. From the date of acquisition through December 31, 2021, BioNTech Austria did not have any significant impact on the operating income or the revenues of the Group. The same applies if the transaction had occurred at the beginning of the reporting period.

6 Revenues from Contracts with Customers

6.1 Disaggregated Revenue Information

Set out below is the disaggregation of the Group's revenues from contracts with customers:

	Years ended December 31,		
(in millions)	2022	2021	2020
Commercial revenues	**€17,194.6**	**€18,874.0**	**€303.5**
COVID-19 vaccine revenues	17,145.2	18,806.8	270.5
Sales to collaboration partners[1)]	*1,224.3*	*970.9*	*61.4*
Direct product sales to customers	*3,184.7*	*3,007.2*	*20.6*
Share of collaboration partners' gross profit and sales milestones	*12,736.2*	*14,828.7*	*188.5*
Other sales	49.4	67.2	33.0
Research & development revenues from collaborations	**116.0**	**102.7**	**178.8**
Total	**€17,310.6**	**€18,976.7**	**€482.3**

1) Represents sales to our collaboration partners of products manufactured by us and reflects manufacturing costs and variances to the extent identified.

During the year ended December 31, 2022, revenues recognized from Pfizer Inc., or Pfizer (€13,795.8 million) and the German Federal Ministry of Health (€3,020.5 million), each account for more than 10% of total revenues. During the year ended December 31, 2021, revenues recognized from Pfizer (€15,500.0 million) and the German Federal Ministry of Health (€1,945.6 million) account for more than 10% of total revenues. During the year ended December 31, 2020, revenues recognized from Genentech (€49.2 million) and Pfizer (€371.5 million), accounted for more than 10% of total revenues. During the year ended December 31, 2022, based on the geographic region in which our customers and collaboration partners are located we mainly recognized revenues in the United States (€12,709.7 million) and Germany (€3,031.0 million). During the year ended December 31, 2021, the main geographic regions were United States (€14,636.5 million), Germany (€2,241.9 million) and Belgium (€675.0 million). During the year ended December 31, 2020, the main geographic regions were United States (€381.9 million) and Belgium (€56.2 million).

Commercial Revenues

During the year ended December 31, 2022, commercial revenues were recognized from the supply and sales of our COVID-19 vaccine worldwide. We are the marketing authorization holder in the United States, the European Union, the United Kingdom, Canada and other countries, and holder of emergency use authorizations or equivalents in the United States (jointly with Pfizer) and other countries, submissions to pursue regulatory approvals in those countries where emergency use authorizations or equivalent were initially granted are ongoing. Pfizer has marketing and distribution rights worldwide with the exception of China, Germany and Turkey. Shanghai Fosun Pharmaceutical (Group) Co., Ltd, or Fosun Pharma has marketing and distribution rights in China, Hong Kong special administrative region, or SAR, Macau SAR and the region of Taiwan. The allocation of marketing and distribution rights defines territories in which the collaboration partners act as a principal.

Sales to Collaboration Partners

Sales to collaboration partners represent sales of products manufactured by us to collaboration partners. Whenever responsibilities in the manufacturing and supply process of the COVID-19 vaccine shift and the COVID-19 vaccine is transferred, the vaccine is sold from one partner to the other. Under the collaboration with Pfizer, from time to time, those sales are significantly influenced by amounts due to write-offs of inventories as well as costs related to production capacities derived from contracts with Contract Manufacturing Organizations (CMOs) that became redundant. Those costs represent accrued manufacturing variances and are charged to our partner once finally materialized. These manufacturing variances are reflected as transfer price adjustment once identified and assessed highly probable. Sales to collaboration partners during the years ended December 31, 2022, 2021 and 2020, amounted to €1,224.3 million, €970.9 million and €61.4 million, respectively. During the years ended December 31, 2022, and 2021 those sales included €850.0 million and €31.0 million, respectively, related to the aforementioned manufacturing variances. (Nil with respect to sales during the year ended December 31, 2020).

Direct Product Sales to Customers

By supplying our territories during the years ended December 31, 2022, 2021 and 2020, we recognized €3,184.7 million, €3,007.2 million and €20.6 million of revenues, respectively, from direct COVID-19 vaccine sales in Germany and Turkey. The share of gross profit that we owe our collaboration partner Pfizer based on our sales is recognized as cost of sales.

Share of Collaboration Partners' Gross Profit and Sales Milestones

Based on COVID-19 vaccine sales in the collaboration partners' territories, we are eligible to receive a share of their gross profit, which represents a net figure and is recognized as collaboration revenue during the commercial phase, together with sales milestones that are recorded once the underlying thresholds are met. When determining the gross profit, manufacturing cost variances either reflected as transfer price adjustment as described above, or resulting from costs highly probable to be incurred by the partner were considered. During the year ended December 31, 2022, €12,736.2 million gross profit share has been recognized as revenues. During the year ended December 31, 2021 €14,352.1 million gross profit share and €476.6 million of sales milestones have been recognized as revenues. During the year ended December 31, 2020, we recognized €188.5 million gross profit share has been recognized as revenues.

Research and Development Revenues from Collaborations

During the year ended December 31, 2022, research and development revenues were mainly derived from our collaborations with Pfizer, Genentech Inc., or Genentech, and Sanofi S.A, or Sanofi. This includes revenues derived from our new research, development and commercialization collaboration with Pfizer to develop a potential first mRNA-based vaccine for the prevention of shingles (herpes zoster virus, or HZV) which we entered during the year ended December 31, 2022.

During the year ended December 31, 2021, research and development revenues were mainly derived from our collaborations with Genentech and Pfizer.

During the year ended December 31, 2020, research and development revenues were mainly derived from our collaborations with Pfizer and Genentech.

The revenues from contracts with customers disclosed above were recognized as follows:

(in millions)	Years ended December 31, 2022	2021	2020
Timing of revenue recognition			
Goods and services transferred at a point in time	*€ 4,447.2*	*€ 4,034.3*	*€108.8*
Goods and services transferred over time	*127.2*	*113.7*	*185.0*
Revenue recognition applying the sales-based or usage-based royalty recognition constraint model[(1)]	*12,736.2*	*14,828.7*	*188.5*
Total	**€17,310.6**	**€18,976.7**	**€482.3**

(1) Represents sales based on the share of the collaboration partners' gross profit and sales milestones.

6.2 Contract Balances

(in millions)	December 31, 2022	December 31, 2021
Trade and other receivables	€ 7,145.6	€ 12,381.7
Contract liabilities	125.5	195.1
Refund liabilities	24.4	90.0

Trade and other receivables significantly decreased from €12,381.7 million to €7,145.6 million and predominantly comprise trade receivables from our COVID-19 collaboration with Pfizer as well as our direct product sales to customers in our territory. The contractual settlement of the gross profit share has a temporal offset of more than one calendar quarter. As Pfizer's fiscal quarter for subsidiaries outside the United States differs from ours, it creates an additional time lag between the recognition of revenues and the payment receipt. Consequently, as of December 31, 2022, our trade receivables included, in addition to the profit share for the fourth quarter of 2022, trade receivables which related to the gross profit share for the third quarter of 2022. The payment settling our gross profit share for the third quarter of 2022 (as defined by the contract) in the amount of €1,816.5 million was received from our collaboration partner subsequent to the end of the reporting period as of January 12, 2023.

Contract liabilities mainly include upfront fees received from our major collaboration and license agreements as well as advance payments received for future COVID-19 vaccine sales and other sales. The contract liabilities from collaboration and commercial supply agreements as of December 31, 2022, comprise €65.7 million remaining upfront fees from collaboration agreements, and €56.3 million of advance payments for future COVID-19 vaccine sales (as of December 31, 2021: €61.9 million of remaining upfront fees from collaborations as well as €131.9 million of advance payments for future COVID-19 vaccine sales).

During the year ended December 31, 2022, the contract liabilities changed as revenues were recognized from contract liabilities outstanding at the beginning of the year by progressing our research and development collaboration agreements as well as partially reclassified into refund liabilities (during the year ended December 31, 2021: decrease in contract liabilities by fulfilling commercial performance obligations and progressing our research and development collaboration agreements).

The refund liabilities relate to our collaboration partner and represent consideration which has been received but which will need to be refunded to the collaboration partner.

Set out below is the amount of revenue recognized for the periods indicated:

	Years ended December 31,		
(in millions)	**2022**	**2021**	**2020**
Amounts included in contract liabilities at the beginning of the year	€63.1	€73.7	€58.9

6.3 Performance Obligations

The contract liabilities allocated to the remaining performance obligations from collaboration or commercial supply agreements (unsatisfied or partially unsatisfied) as of year-end are as follows:

(in millions)	**December 31, 2022**	**December 31, 2021**
Within one year	€ 77.1	€ 186.1
More than one year	48.4	9.0
Total	**€ 125.5**	**€ 195.1**

7 Income and Expenses

7.1 Costs of Sales

(in millions)	Years ended December 31, 2022	2021	2020
Cost of sales related to COVID-19 vaccine revenues	€2,960.1	€2,855.6	€35.6
Cost related to other sales	34.9	55.9	23.7
Total	**€2,995.0**	**€2,911.5**	**€59.3**

During the year ended December 31, 2022, cost of sales increased compared to the year ended December 31, 2021, mainly due to recognizing cost of sales from our COVID-19 vaccine sales, which included the share of gross profit that we owe our collaboration partner Pfizer based on our sales. In addition, cost of sales was impacted by expenses arising from inventory write-offs and expenses for production capacities derived from contracts with Contract Manufacturing Organizations, or CMOs, that became redundant. The effects were driven by the introduction of a new COVID-19 vaccine formulation, the switch from the monovalent vaccine to our Omicron-adapted bivalent COVID-19 vaccines and due to accelerating internal manufacturing capacities during the year ended December 31, 2022.

During the year ended December 31, 2021, cost of sales increased compared to the year ended December 31, 2020, mainly due to recognizing cost of sales from our COVID-19 vaccine sales, which included the share of gross profit that we owe our collaboration partner Pfizer based on our sales.

7.2 Research and Development Expenses

(in millions)	Years ended December 31, 2022	2021	2020
Purchased services	€ 621.6	€572.6	€359.9
Wages, benefits and social security expense	385.9	233.1	126.3
Laboratory supplies	398.0	53.8	107.8
Depreciation and amortization	49.3	32.9	30.2
Other	82.2	56.8	20.8
Total	**€1,537.0**	**€949.2**	**€645.0**

During the year ended December 31, 2022, research and development expenses increased compared to the year ended December 31, 2021, mainly due to expenses in connection with the development and production of our Omicron-adapted bivalent COVID-19 vaccines and from progressing the clinical studies for our pipeline candidates. The increase was further driven by an increase in wages, benefits and social security expenses resulting from an increase in headcount as well as expenses incurred under our share-based-payment arrangements.

During the year ended December 31, 2021, research and development expenses increased compared to the year ended December 31, 2020, mainly due to increased research and development expenses from the BNT162 clinical trials launched and conducted in the year ended December 31, 2021, recorded as purchased services with respect to those expenses, which are initially incurred by Pfizer and subsequently charged to us under the collaboration agreement. The increase was further driven by an increase in wages, benefits and social security expenses resulting from an increase in headcount, recording expenses incurred under our share-based-payment arrangements as well as from recognizing inventor remuneration expenses.

7.3 Sales and Marketing Expenses

(in millions)	Years ended December 31, 2022	2021	2020
Purchased services	€24.0	€26.5	€10.9
IT costs	11.2	5.0	0.2
Wages, benefits and social security expense	7.8	4.3	1.6
Other	16.5	14.6	1.8
Total	**€59.5**	**€50.4**	**€14.5**

During the year ended December 31, 2022, sales and marketing expenses increased compared to the year ended December 31, 2021, mainly due to increased expenses for IT consulting and an increase in wages, benefits and social security expenses resulting from an increase in headcount.

During the year ended December 31, 2021, sales and marketing expenses increased compared to the year ended December 31, 2020, mainly due to an increase in purchased service which we incurred in connection with our COVID-19 vaccine commercial activities.

7.4 General and Administrative Expenses

	Years ended December 31,		
(in millions)	**2022**	**2021**	**2020**
Wages, benefits and social security expense	€145.9	€ 90.5	€33.0
Purchased services	143.9	70.2	26.0
IT and office equipment	88.1	25.1	7.4
Insurance premiums	21.3	30.4	4.8
Other	85.5	69.6	22.8
Total	**€484.7**	**€285.8**	**€94.0**

During the year ended December 31, 2022, general and administrative expenses increased compared to the year ended December 31, 2021, mainly due to increased expenses for IT consulting and IT services, increased expenses for purchased management consulting and legal services as well as an increase in wages, benefits and social security expenses resulting mainly from an increase in headcount. Our business development transactions also contributed to the increase in general and administrative expenses.

During the year ended December 31, 2021, general and administrative expenses increased compared to the year ended December 31, 2020, mainly due to an increase in wages, benefits and social security expenses resulting from an increase in headcount and expenses incurred under the share-based payment arrangements, increased expenses for purchased management consulting and legal services as well as higher insurance premiums caused by increased business volume.

7.5 Other Operating Expenses

	Years ended December 31,		
(in millions)	**2022**	**2021**	**2020**
Loss on derivative instruments at fair value through profit or loss	€385.5	€86.3	€—
Other	21.5	8.1	2.4
Total	**€407.0**	**€94.4**	**€ 2.4**

During the year ended December 31, 2022, the other expenses increased compared to the year ended December 31, 2021, mainly from recording the change in fair value of foreign exchange forward contracts that were entered into during the year ended December 31, 2022, to manage some of our transaction exposures but were not designated as hedging instruments under IFRS.

During the year ended December 31, 2021, the other operating expenses increased compared to the year ended December 31, 2020, mainly from recording the change in fair value of foreign exchange forward contracts.

7.6 Other Operating Income

	Years ended December 31,		
(in millions)	**2022**	**2021**	**2020**
Foreign exchange differences, net	€727.4	€446.3	€ —
Government grants	1.4	137.2	239.0
Gain on derivative instruments at fair value through profit or loss	—	5.7	—
Other	86.5	9.2	11.5
Total	**€815.3**	**€598.4**	**€250.5**

During the year ended December 31, 2022, the other income increased compared to the year ended December 31, 2021, which was mainly due from recognizing foreign exchange differences arising on operating items. The foreign exchange differences included in operating income primarily arose from valuing our U.S. dollar denominated trade receivables which were mainly incurred under our COVID-19 collaboration with Pfizer, U.S. dollar denominated trade payables as well as U.S. dollar denominated other financial liabilities which mainly relate to obligations incurred from our license agreements.

During the year ended December 31, 2021, the other income increased compared to the year ended December 31, 2020, which was mainly due from recognizing foreign exchange differences and government grant funding. The government grant funding mainly related to an initiative by the German Federal Ministry of Education (*Bundesministerium für Bildung und Forschung*, or the BMBF) to support our COVID-19 vaccine program, BNT162. During the year ended December 31, 2021, the final draw downs were made. The government funding from the BMBF amounted in total to €375.0 million during the years ended December 31, 2021, and 2020.

7.7 Finance Income

	Years ended December 31,		
(in millions)	**2022**	**2021**	**2020**
Fair value adjustments of financial instruments measured at fair value	€216.8	€ —	€—
Foreign exchange differences, net	65.0	66.2	—
Interest income	48.5	1.5	1.6
Total	**€330.3**	**€67.7**	**€ 1.6**

During the year ended December 31, 2022, the finance income increased compared to the year ended December 31, 2021, mainly due to final fair value measurement adjustments of the derivative embedded within the convertible note upon the early redemption of the convertible note as of March 1, 2022, the redemption date, as well as increased interest income from our bank deposits.

7.8 Finance Expenses

	Years ended December 31,		
(in millions)	**2022**	**2021**	**2020**
Interest expenses related to financial assets	€11.1	€ 2.5	€ —
Interest expenses related to lease liabilities	5.1	2.9	2.0
Amortization of financial instruments	2.7	21.9	3.1
Fair value adjustments of financial instruments measured at fair value	—	277.8	17.3
Foreign exchange differences, net	—	—	42.6
Total	**€18.9**	**€305.1**	**€65.0**

During the year ended December 31, 2022, the finance expenses decreased compared to the year ended December 31, 2021, mainly due to final settlement of the derivative embedded within the convertible note which led to financial income whereas during the year ended December 31, 2021, expenses in the amount of €277.8 million were derived from the respective fair value measurement adjustment.

7.9 Employee Benefits Expense

	Years ended December 31,		
(in millions)	**2022**	**2021**	**2020**
Wages and salaries	€544.8	€345.9	€160.7
Social security costs	58.6	31.7	17.9
Pension costs	2.1	1.2	0.8
Total	**€605.5**	**€378.8**	**€179.4**

Wages and salaries include, among other things, expenses for share-based payments.

8 Income Tax

Income tax for the years ended December 31, 2022, December 31, 2021, and December 31, 2020, comprised current income taxes, other taxes and deferred taxes. We are subject to corporate taxes, the solidarity surcharge and trade taxes. Our corporate tax rate in the reporting year remained unchanged (15.0%) as did the solidarity surcharge (5.5%) whereas the average trade tax rate changed resulting in a combined income tax rate of 27.25% in the year ended December 31, 2022 (during the years ended December 31, 2021 and 2020: 30.72% and 30.79%, respectively). Deferred taxes are calculated at a rate of 27.2%. Deferred taxes for Austria are calculated at a corporate tax rate of 25.0%. Austria's decrease of its corporate tax rate down to 23.0% in 2024 will be recognized from 2023 onwards. BioNTech USA Holding, LLC is subject to Federal Corporate Income Tax (21.0%) as well as State Income Tax in various state jurisdictions (effective rate of 4.7%). The deferred tax rates calculations basis remained unchanged compared to the previous period.

The following table illustrates the current and deferred taxes for the periods indicated:

	Years ended December 31,		
(in millions)	**2022**	**2021**	**2020**
Current income taxes	€3,629.6	€4,535.0	€ —
Deferred taxes	(109.9)	218.9	(161.0)
Income taxes	**€3,519.7**	**€4,753.9**	**€(161.0)**

The following table reconciles the expected income taxes to the actual current income taxes and deferred taxes as presented in the table above. The expected income taxes were calculated using the combined income tax rate of BioNTech SE applicable to the Group and mentioned above which was applied to profit before taxes to calculate the expected income taxes.

	Years ended December 31,		
(in millions)	**2022**	**2021**	**2020[1]**
Profit / (Loss) before tax	**€12,954.1**	**€15,046.4**	**€(145.8)**
Expected tax credit / (benefit)	€ 3,529.7	€ 4,622.5	€ (44.9)
Effects			
Deviation due to local tax basis	8.9	9.1	0.6
Deviation due to deviating income tax rate (Germany and foreign countries)	7.3	9.4	1.3
Change in valuation allowance	30.6	3.0	(26.2)
Effects from tax losses	23.2	19.5	(90.4)
Change in deferred taxes due to tax rate change	(2.3)	(7.5)	—
Non-deductible expenses	2.5	90.5	0.8
Non tax-effective income	(87.9)	(0.3)	—
Non tax-effective share-based payment expenses	8.7	15.5	9.8
Tax-effective equity transaction costs	—	(1.2)	(10.2)
Adjustment prior year taxes	(31.5)	(2.9)	0.3
Non-tax effective bargain purchase	—	(0.7)	(2.2)
Other effects	30.5	(3.0)	0.1
Income taxes	**€ 3,519.7**	**€ 4,753.9**	**€(161.0)**
Effective tax rate	**27.2%**	**31.6%**	**n.m.[2]**

(1) Certain amounts have been combined in the prior period to conform with the current period presentation.
(2) The information is not meaningful due to the loss before tax in the respective period.

The non-tax effective income of €87.9 million mainly contained the finance income effect of the final fair value measurement adjustments of the derivative embedded within the convertible note upon the early redemption of the convertible note as of March 1, 2022.

On November 15, 2018, we established a share option program pursuant to which we were permitted to grant selected employees and our Management Board options to receive shares in the Company. The program is designed as an Employee Stock Ownership Plan, or ESOP. We offered the participants a certain number of rights, or option rights, subject to their explicit acceptance. Grants under the ESOP took place from November 2018 until December 2019. An exercise of option rights in accordance with the terms of the ESOP gives a participant the right to obtain shares against payment of the exercise price. By way of an updated decision of the Supervisory Board at the end of September 2022 compared to the initial settlement mechanism, an ESOP settlement may be made by delivery to the participant of such number of ADSs equal to the net value of the exercised option rights after deduction of (i) the exercise price and (ii) the applicable wage taxes (including solidarity surcharge thereon and church tax, if applicable) and social security contributions resulting from such exercise. The respective number of ADS shall be settled with ADS acquired in the course of the share repurchase program. The applicable wage taxes (including solidarity surcharge thereon and church tax, if applicable) and social security contributions resulting from such exercise are paid in cash directly to the respective authorities. Tax expenses on the settlement are only recognized once the option rights have been exercised. After considering the settlement in the three months ended December 31, 2022, a deferred tax asset remained in our consolidated statement of financial position of €33.4 million which relates to future settlements. As the current tax effect resulting from the settlement exceeded the amount of the related cumulative remuneration expense, the current tax associated with the excess was directly recognized in equity in the amount of €368.8 million.

The settlement mechanism of the LTI-plus program (see Note 16.1 for plan details) in the course of the three months ended December 31, 2022, led to a decrease in payable income taxes in the amount of €14.0 million. Thereof current income taxes in the total amount of €8.7 million were recognized in our consolidated financial statements of profit or loss to the extent expenses have been recognized with an effect of profit and loss in the past. As the current tax effect resulting from the settlement exceeded the amount of the related cumulative remuneration expense, the current tax associated with the excess was directly recognized in equity in the amount of €5.3 million.

The current actual tax savings associated with the excess were directly recognized in equity in a total amount of €374.1 million. Considering these tax amounts directly recognized in equity when calculating an effective tax rate, the tax rate would be decreased by about three percentage points.

Taxes

Deferred taxes for the periods indicated relate to the following:

Year ended December 31, 2022

(in millions)	January 1, 2022	Recognized in P&L	Recognized in OCI	Recognized directly in equity	December 31, 2022
Fixed assets	€ (6.5)	€ 22.3	€ —	€ —	€ 15.8
Right-of-use assets	(47.5)	(8.3)	—	—	(55.8)
Inventories	1.8	147.1	—	—	148.9
Trade and other receivables	(95.6)	(67.1)	—	—	(162.7)
Contract liabilities	10.6	(20.6)	—	—	(10.0)
Lease liabilities, loans and borrowings	71.8	(9.0)	—	—	62.8
Net employee defined benefit liabilities	0.9	(0.5)	0.3	—	0.7
Share-based payments	—	8.5	—	179.9	188.4
Other provisions	6.3	4.7	—	—	11.0
Other (incl. deferred expenses)	1.6	59.9	—	—	61.5
Tax losses / tax credits	70.9	28.6	—	—	99.5
Deferred tax assets net (before valuation adjustment)	**€ 14.3**	**€ 165.6**	**€ 0.3**	**€ 179.9**	**€ 360.1**
Valuation adjustment	(81.0)	(55.7)	—	—	(136.7)
Deferred tax assets / (liabilities), net (after valuation adjustment)	**€ (66.7)**	**€ 109.9**	**€ 0.3**	**€ 179.9**	**€ 223.4**
Thereof deferred tax assets	**€ —**	**€ 58.9**	**€ —**	**€ 179.9**	**€ 238.8**
Thereof deferred tax liability	**€ (66.7)**	**€ 60.2**	**€ 0.3**	**€ —**	**€ (6.2)**

Year ended December 31, 2021

(in millions)	January 1, 2021	Recognized in P&L	Recognized in OCI	Acquisition of subsidiaries and businesses	December 31, 2021
Fixed assets	€ 5.6	€ (1.3)	€ —	€ (10.8)	€ (6.5)
Right-of-use assets	(30.0)	(17.5)	—	—	(47.5)
Inventories	1.0	0.8	—	—	1.8
Trade and other receivables	(3.0)	(92.6)	—	—	(95.6)
Lease liabilities	—	—	—	—	—
Lease liabilities, loans and borrowings	25.9	45.9	—	—	71.8
Contract liabilities	23.4	(12.8)	—	—	10.6
Net employee defined benefit liabilities	0.8	0.1	—	—	0.9
Other provisions	1.5	4.8	—	—	6.3
Other (incl. deferred expenses)	10.6	(9.0)	—	—	1.6
Tax losses / tax credits	175.7	(106.8)	—	2.0	70.9
Deferred tax assets net (before valuation adjustment)	**€ 211.5**	**€ (188.4)**	**€ —**	**€ (8.8)**	**€ 14.3**
Valuation adjustment	(50.5)	(30.5)	—	—	(81.0)
Deferred tax assets / (liabilities), net (after valuation adjustment)	**€ 161.0**	**€ (218.9)**	**€ —**	**€ (8.8)**	**€ (66.7)**

As of December 31, 2022, our accumulated tax losses comprised tax losses of German entities not within the tax group (as of December 31, 2022: BioNTech BioNTainer Holding GmbH and BioNTech Idar-Oberstein Services GmbH, NT Security and Services GmbH, BioNTech Real Estate Verwaltungs GmbH and the Real Estate partnerships; as of December 31, 2021: BioNTech Innovation and Services Marburg GmbH, BioNTech Innovation GmbH, BioNTech Real Estate Verwaltungs GmbH and the Real Estate partnerships) and U.S. tax group. Up until the year ended December 31, 2021, our accumulated tax losses also comprised those of the German tax group. Our accumulated tax losses for the periods indicated amounted to the following:

	Years ended December 31,		
(in millions)	**2022**	**2021**	**2020**
Corporate tax	€352.3	€272.0	€596.4
Trade tax	204.1	170.6	513.6

	Years ended December 31,		
(in millions)	**2022**	**2021**	**2020**
Federal tax credits	€ 10.5	€ 4.0	€ 0.8
State tax credits	4.1	1.6	0.3

Up until the year ended December 31, 2022, deferred tax assets on tax losses had not been recognized, as there was not sufficient probability in terms of IAS 12 that there would have been future taxable profits available against which the unused tax losses could have been utilized.

During the year ended December 31, 2021, deferred tax assets on tax losses which had been recognized for the losses incurred by the German tax group were fully utilized (as per the end of each quarter during the year ended December 31, 2021, a proportionate amount of the deferred tax assets related to the tax loss carryforward was utilized). The change in deferred taxes was also supplemented by deferred taxes on temporary differences.

Since December 2020, our COVID-19 vaccine has been fully approved, granted conditional marketing authorization, or approved or authorized for emergency or temporary use in over 100 countries and regions worldwide, which resulted in recognition of revenues from the commercial sale of pharmaceutical products for the first time. Therefore as of December 31, 2020, it was considered highly probable that taxable profits for the German tax group would be available against which the tax losses could be utilized. On this basis, we had recognized deferred tax assets and liabilities with a net amount of €161.0 million for the cumulative tax losses and temporary differences determined for the German tax group as of December 31, 2020.

The intended settlement mechanism of Option Rights of the Chief Executive Officer Grant (see Note 16.4 for plan details) led, based on IAS 12, to a deferred tax asset in the total amount of €153.6 million as of December 31, 2022. Thereof a deferred tax asset in the amount of €6.4 million is recognized as income taxes in our consolidated statements of profit or loss to the extent expenses have been recognized with an effect of profit and loss in the past. In accordance with IAS 12.68c, the remainder in the amount of €147.2 million is recognized directly in equity as other reserves in our consolidated statements of changes in stockholders' equity.

As of December 31, 2022, we have not recognized deferred tax assets for unused tax losses and temporary differences at amount of €136.7 million (December 31, 2021: €81.0 million December 31, 2020 €50.5 million) as there is not sufficient probability in terms of IAS 12 that there will be future taxable income available against which the unused tax losses and temporary differences can be utilized.

These amounts included tax losses at an amount of €304.0 million U.S. federal tax losses and €184.6 million US state tax losses (December 31, 2021: €238.1 million U.S. federal tax losses and €147.4 million U.S. state tax losses, December 31, 2020: €136.8 million U.S. federal tax losses and €60.9 million U.S. state tax losses) related to the US tax group, thereof €24.0 million U.S. federal losses and thereof €179.0 million U.S. state tax losses that begin to expire at various dates beginning in 2033. All other material unused tax losses and temporary differences can be carried forward indefinitely.

9 Earnings per Share

Basic earnings per share (EPS) is calculated by dividing the profit for the year attributable to ordinary equity holders of the parent by the weighted average number of ordinary shares outstanding during the year.

Diluted EPS is calculated by dividing the profit attributable to ordinary equity holders of the parent by the weighted average number of ordinary shares outstanding during the year plus the weighted average number of ordinary shares that would be issued on conversion of all the dilutive potential ordinary shares into ordinary shares.

The following table reflects the income and share data used in the basic and diluted EPS calculations:

(in millions)	Years ended December 31, 2022	2021	2020
Profit attributable to ordinary equity holders of the parent for basic earnings	**€9,434.4**	**€10,292.5**	**€ 15.2**
Weighted average number of ordinary shares outstanding for basic EPS	**243.3**	**244.0**	**235.4**
Effects of dilution from share options	6.5	15.7	13.1
Weighted average number of ordinary shares outstanding adjusted for the effect of dilution	**249.8**	**259.7**	**248.5**
Earnings per share			
Basic profit for the period per share	€ 38.78	€ 42.18	€ 0.06
Diluted profit for the period per share	€ 37.77	€ 39.63	€ 0.06

10 Property, Plant and Equipment

(in millions) **Acquisition and production costs**	Land and buildings	Equipment, tools and installations	Construction in progress and advance payments	Total
As of January 1, 2021	€ 61.3	€ 142.4	€ 81.6	€285.3
Additions	20.0	44.3	63.2	127.5
Disposals	(0.8)	(15.1)	(1.7)	(17.6)
Reclassifications	23.1	25.8	(48.9)	—
Currency differences	0.5	0.7	0.1	1.3
Acquisition of subsidiaries and businesses	—	0.2	—	0.2
As of December 31, 2021	**€ 104.1**	**€ 198.3**	**€ 94.3**	**€396.7**
As of January 1, 2022	104.1	198.3	94.3	396.7
Additions	100.2	46.7	182.3	329.2
Disposals	—	(1.1)	(0.5)	(1.6)
Reclassifications	12.0	28.2	(40.2)	—
Currency differences	0.7	0.9	(0.4)	1.2
As of December 31, 2022	**€ 217.0**	**€ 273.0**	**€ 235.5**	**€725.5**

(in millions) **Cumulative depreciation and impairment charges**	Land and buildings	Equipment, tools and installations	Construction in progress and advance payments	Total
As of January 1, 2021	**€ 10.4**	**€ 47.9**	**€ —**	**€ 58.3**
Depreciation	4.4	25.0	—	29.4
Disposals	(0.6)	(13.1)	—	(13.7)
Currency differences	—	0.2	—	0.2
As of December 31, 2021	**€ 14.2**	**€ 60.0**	**€ —**	**€ 74.2**
As of January 1, 2022	14.2	60.0	—	74.2
Depreciation	7.8	34.6	—	42.4
Disposals	—	(0.4)	—	(0.4)
Currency differences	—	0.1	—	0.1
As of December 31, 2022	**€ 22.0**	**€ 94.3**	**€ —**	**€116.3**

(in millions) Carrying amount	Land and buildings	Equipment, tools and installations	Construction in progress and advance payments	Total
As of December 31, 2021	**€ 89.9**	**€ 138.3**	**€ 94.3**	**€322.5**
As of December 31, 2022	**€ 195.0**	**€ 178.7**	**€ 235.5**	**€609.2**

11 Intangible Assets

(in millions) Acquisition costs	Goodwill	Concessions, licenses, in-process R&D and similar rights	Advance payments	Total
As of January 1, 2021	€ 53.7	€ 147.2	€ 6.0	€206.9
Additions	—	5.9	4.2	10.1
Disposals	—	(8.5)	(1.2)	(9.7)
Reclassifications	—	1.2	(1.2)	—
Currency differences	4.1	2.5	—	6.6
Acquisition of subsidiaries and businesses	—	43.3	—	43.3
As of December 31, 2021	**€ 57.8**	**€ 191.6**	**€ 7.8**	**€257.2**
As of January 1, 2022	57.8	191.6	7.8	257.2
Additions	—	22.8	11.4	34.2
Disposals	—	(0.1)	—	(0.1)
Reclassifications	—	6.1	(6.1)	—
Currency differences	3.4	1.9	—	5.3
As of December 31, 2022	**€ 61.2**	**€ 222.3**	**€ 13.1**	**€296.6**

(in millions) Cumulative amortization and impairment charges	Goodwill	Concessions, licenses, in-process R&D and similar rights	Advance payments	Total
As of January 1, 2021	€ —	€ 43.4	€ —	€43.4
Amortization	—	16.8	—	16.8
Disposals	—	(5.5)	—	(5.5)
Currency differences	—	0.1	—	0.1
As of December 31, 2021	**€ —**	**€ 54.8**	**€ —**	**€54.8**
As of January 1, 2022	—	54.8	—	54.8
Amortization	—	22.0	—	22.0
Disposals	—	(0.1)	—	(0.1)
Currency differences	—	0.2	—	0.2
As of December 31, 2022	**€ —**	**€ 76.9**	**€ —**	**€76.9**

(in millions) Carrying amount	Goodwill	Concessions, licenses, in-process R&D and similar rights	Advance payments	Total
As of December 31, 2021	**€ 57.8**	**€ 136.8**	**€ 7.8**	**€202.4**
As of December 31, 2022	**€ 61.2**	**€ 145.4**	**€ 13.1**	**€219.7**

Goodwill and Intangible Assets with Indefinite Useful Lives

(in millions)	CGU Immunotherapies		External Product Sales of JPT		Total	
	As of December 31, 2022	As of December 31, 2021	As of December 31, 2022	As of December 31, 2021	**As of December 31, 2022**	**As of December 31, 2021**
Goodwill	€ 60.7	€ 57.3	€ 0.5	€ 0.5	**€ 61.2**	**€ 57.8**

For the year ended December 31, 2022, we have total Goodwill of €61.2 million, which relates almost completely to the CGU immunotherapies. The CGU immunotherapies focus on the development of therapies to address a range of rare and infectious diseases and include our broad pipeline that includes mRNA-based immune activators, antigen-targeting T cells and antibodies, and defined immunomodulators of various immune cell mechanisms.

The recoverable amount of the CGU immunotherapies has been determined based on a fair value less cost of disposal (FVLCD) derived from our market capitalization as observable input parameter. As a result of the analysis, management did not identify an impairment for this CGU.

We concluded that no reasonable possible change of the recoverable amount would cause the carrying amount of the CGU Immunotherapies to exceed its recoverable amount.

Non-Current Assets by Region

As of December 31, 2022, non-current assets comprised €188.0 million intangible assets, property, plant and equipment, right-of-use assets and other assets of our subsidiaries incorporated in the United States (as of December 31, 2021: €139.7 million). The remaining non-current assets mainly relate to subsidiaries incorporated in Germany.

12 Financial Assets and Financial Liabilities

12.1 Capital Risk Management

Our capital management objectives are designed primarily to finance our growth strategy.

Our treasury committee reviews the total amount of cash on a regular basis. As part of this review, the committee considers the total cash and cash equivalents, the cash outflow, currency translation differences and refinancing activities. We monitor cash using a burn rate. The cash burn rate is defined as the average monthly net cash flow from operating and investing activities during a financial year.

(in millions)	December 31, 2022	December 31, 2021
Cash at banks and on hand	**€ 1,325.2**	**€ 1,092.7**
Cash equivalents	**12,549.9**	**600.0**
Bank deposits	9,401.0	600.0
Money market funds	3,148.9	—
Total	**€ 13,875.1**	**€ 1,692.7**

In general, the aim is to maximize the financial resources available for further research and development projects.

Since December 1, 2021, we have an investment and asset management policy in place that contains policies and processes for managing cash, which requires that our investment portfolio shall be maintained in a manner that minimizes risk of the invested capital. These risks include mainly credit risk and concentration risk. The portfolio must provide liquidity in a timely manner to accommodate operational and capital needs. The portfolio is managed efficiently by the Treasury department.

We are not subject to externally imposed capital requirements. Our capital management objectives were achieved in the reporting year.

12.2 Categories of Financial Instruments

Financial Assets: Financial Assets at Amortized Cost and at Fair Value through OCI and Profit or Loss

Set out below, is an overview of financial assets at amortized cost and at fair value through OCI and profit or loss, other than cash and cash equivalents, held by the Group as of the dates indicated:

Financial assets *(in millions)*	December 31, 2022	December 31, 2021
Derivatives not designated as hedging instruments		
Foreign exchange forward contracts	€ 183.7	€ 5.7
Equity instruments designated at fair value through OCI		
Non-listed equity investments	57.1	19.5
Listed equity investments	20.0	—
Financial assets at amortized cost		
Trade and other receivables	7,145.6	12,381.7
Cash deposit with an original term of six months	—	375.2
Other financial assets	8.8	2.5
Total	**€ 7,415.2**	**€ 12,784.6**
Total current	7,335.0	12,763.3
Total non-current	80.2	21.3

Derivatives Not Designated as Hedging Instruments

Derivatives not designated as hedging instruments relate to foreign exchange forward contracts that were entered into during the years ended December 31, 2022, and 2021, to manage some of our foreign currency exposures. The foreign exchange forward contracts are measured at fair value through profit or loss and are intended to reduce the exposure to foreign currency risk resulting from trade receivables denominated in U.S. dollar.

Equity Instruments Designated at Fair Value through OCI

In January 2022, we acquired 13.0% of the shares (fully diluted as of closing) of Crescendo Biologics Ltd., a private, clinical-stage immuno-oncology company developing novel, targeted T-cell enhancing Humabody therapeutics headquartered in Cambridge, United Kingdom. The equity investment complements a collaboration to develop novel immunotherapies for the treatment of patients with cancer and other diseases.

In November 2022, we acquired 8.3% of the shares (fully diluted as of closing) leading to 7.1% of the voting rights, of Ryvu Therapeutics S.A., a listed clinical-stage drug discovery and development company focused on novel small-molecule therapies that address emerging targets in oncology headquartered in Krakow, Poland. The equity investment complements a multi-target research collaboration to develop multiple small molecule programs targeting immune modulation in cancer and potentially other disease areas.

In accordance with IFRS 9, we elected to present changes in fair value of these equity investments in OCI to avoid fluctuation to be disclosed in our consolidated financial statements of profit or loss.

In connection with the agreement announced in January 2023, under which we plan to acquire, subject to the satisfaction of customary closing conditions and certain regulatory approvals, all remaining shares of InstaDeep Ltd., or InstaDeep, a leading global technology company in the field of artificial intelligence ("AI") and machine learning. The fair value of our stake in InstaDeep which was initially acquired during the year ended December 31, 2021, was remeasured based on the preliminary estimate of the expected purchase price.

Since the acquisition date, no material gains and losses on our equity investments in Crescendo Biologics Ltd. and Ryvu Therapeutics S.A. have occurred.

Financial Assets at Amortized Cost

Trade and other receivables remained outstanding as of December 31, 2022, mainly due to the contractual settlement of the gross profit share under our COVID-19 collaboration with Pfizer as described in Note 6.2 as well as from our direct product sales to customers in our territory.

Financial Liabilities: Financial Liabilities at Amortized Cost and at Fair Value through Profit or Loss (including Loans and Borrowings and Other Financial Liabilities)

Set out below, is an overview of financial liabilities, other financial liabilities and trade payables held by the Group as of the dates indicated:

Lease liabilities, loans and borrowings

(in millions)	December 31, 2022	December 31, 2021
Lease liabilities	€ 210.1	€ 181.6
Convertible note – host contract[1]	—	99.7
Loans and borrowings	2.1	20.2
Total	**€ 212.2**	**€ 301.5**
Total current	36.0	129.9
Total non-current	176.2	171.6

(1) The convertible note was fully redeemed by exercising our early redemption option as of March 1, 2022, the redemption date.

Other financial liabilities

(in millions)	December 31, 2022	December 31, 2021
Derivatives not designated as hedging instruments		
Convertible note – embedded derivative[1]	€ —	€ 308.7
Foreign exchange forward contracts	—	63.0
Financial liabilities at fair value through profit or loss		
Contingent consideration	6.1	6.1
Total financial liabilities at fair value	**€ 6.1**	**€ 377.8**
Trade payables and other financial liabilities at amortized cost, other than loans and borrowings		
Trade payables	204.1	160.0
Other financial liabilities	785.1	818.7
Total trade payables and other financial liabilities at amortized cost, other than loans and borrowings	**€ 989.2**	**€ 978.7**
Total other financial liabilities	**€ 995.3**	**€ 1,356.5**
Total current	989.2	1,350.4
Total non-current	6.1	6.1

(1) The convertible note was fully redeemed by exercising our early redemption option as of March 1, 2022, the redemption date.

Total financial liabilities

(in millions)	December 31, 2022	December 31, 2021
Lease liabilities, loans and borrowings	€ 212.2	€ 301.5
Other financial liabilities	995.3	1,356.5
Total	**€ 1,207.5**	**€ 1,658.0**
Total current	1,025.2	1,480.3
Total non-current	182.3	177.7

Loans and Borrowings

June 2020 Private Placement – Convertible Note

A fund associated with Temasek (Ellington Investments Pte. Ltd.), or Temasek, and another accredited investor participated in a private investment which we refer to as the June 2020 Private Placement. The private placement included an investment in a four-year mandatory convertible note and an investment in ordinary shares and closed as of August 28, 2020, following the satisfaction of customary closing conditions. The private placement included an investment in ordinary shares (see Note 15) and a €100.0 million investment in a four-year mandatory convertible note with a coupon of 4.5% per annum and a conversion premium of 20% above its reference price. As of closing, the convertible note had been classified as a financial liability according to IAS 32 because the conversion features of the note lead to a conversion into a variable number of shares and is measured at amortized cost since the fair value option was not applied. On initial recognition, the financial liability was measured at the present value of the contractually determined future cash flows discounted at the effective interest rate of 9.0%. The financial liability was subsequently measured at amortized cost by using the effective interest rate method, reflecting actual and revised estimated contractual cash flows until extinguished upon conversion. In February 2022, we gave notice to Temasek that we would exercise our early redemption option and fully redeemed the convertible note on March 1, 2022, the redemption date. As of the redemption date, the conversion features provided for in the contract initially identified as a combined embedded derivative were finally measured at fair value through profit and loss and recognized as finance income in our consolidated statements of profit or loss. During April 2022, the early redemption was fulfilled by issuing the number of our ordinary shares calculated pursuant to the early redemption provisions of the convertible note (see Note 15), plus paying a fractional share and accrued but unpaid interest up to (but excluding) the redemption date.

Derivatives Not Designated as Hedging Instruments

Derivatives not designated as hedging instruments relate to foreign exchange forward contracts that were entered into during the years ended December 31, 2022, and 2021, to manage some of our foreign currency exposures. The foreign exchange forward contracts are measured at fair value through profit or loss and are intended to reduce the exposure to foreign currency risk resulting from trade receivables denominated in U.S. dollar.

Other Financial Liabilities at Amortized Cost

Other financial liabilities at amortized cost mainly include obligations derived from license agreements which are being incurred with respect to our COVID-19 vaccine sales in our and the collaboration partners' territories where we and our partners are using third party intellectual property. In addition, other financial liabilities at amortized cost comprise obligations from services received but not yet invoiced.

12.3 Fair Values

Fair values of cash and cash equivalents, trade receivables, trade payables and other current financial assets and liabilities approximated their carrying amounts as of December 31, 2022 and December 31, 2021, largely due to the short-term maturities of these instruments.

The fair values of financial instruments measured at fair value were reassessed on a quarterly basis. The money market funds, or MMFs, which are recognized as cash and cash equivalents, are valued using quoted prices on the valuation date in active markets (Level 1). The change in the derivative's fair value related to the equity investment of Pfizer (see Note 15) was derived from our share price development between contract signing and closing (Level 1). As described above, as of the redemption date, the fair value of the derivative embedded in our convertible note was finally assessed by applying the Cox-Ross-Rubinstein binomial tree model which is based on significant observable inputs (Level 2) and described in further detail in Note 15. The foreign exchange forward contracts are valued using valuation techniques, which employ the use of foreign exchange spot and forward rates (Level 2). The fair values of listed equity investments are measured based on the stock prices of the listed companies (Level 1). The fair values of non-listed equity investments are measured based on observable inputs, e.g., based on multiple analyses (Level 2). The initial fair value of contingent considerations determined at acquisition was based on cash flow projections (unobservable Level 3 input factors) and remained valid since no material changes of the underlying performance criteria have occurred.

12.4 Financial Instruments Risk Management Objectives and Policies

Our financial liabilities comprise lease liabilities, loans and borrowings, trade and other payables as well as hedging liabilities. The main purpose of these financial liabilities is to enable our operations. Our principal financial assets include mainly cash and trade receivables that derive directly from our operations.

We are exposed to market risk, credit risk and liquidity risk. Our Management Board oversees the management of these risks.

The treasury committee provides assurance to our Management Board that our financial risk activities are governed by appropriate policies and procedures and that financial risks are identified, measured and managed in accordance with our policies and risk objectives. The Management Board reviews and agrees policies for managing each of these risks, which are summarized below.

12.5 Market Risks

Market risks address the risks that the fair value or future cash flows of a financial instrument will fluctuate due to changes in market prices. Market risks comprise three types of risk: interest risks, foreign currency risks and other price risks. Financial instruments affected by market risks include financial assets like trade and other receivables, cash and cash equivalents as well as financial liabilities like trade payables and other financial liabilities. We do not consider interest risks as well as other price risks as material risks for us.

The sensitivity analysis in the following sections is related to the position as of December 31, 2022 and December 31, 2021.

There were no material changes in the way the risks were managed and valued during the years ended December 31, 2022, and 2021. Because of the significantly higher cash balances the market risk exposure on counterparty risk has increased.

Foreign Currency Risks

Foreign currency risks address the risks that the fair value or future cash flows of an exposure will fluctuate because of changes in foreign exchange rates. We are subject to currency risks, as our income and expenditures are denominated in Euro and the U.S. dollar. As such, we are exposed to exchange rate fluctuations between these currencies. Cash inflows denominated in U.S. dollar mainly result from generating proceeds under our collaboration agreements which significantly increased in the past year. Our commercial revenues are primarily collaboration revenues from earnings based on our partners' gross profit, which is shared under the respective collaboration agreements and represents payments we receive in U.S. dollar. Cash outflows dominated in U.S. dollar mainly result from amounts spent on research and development activities as well as expanding our global footprint further. Especially when funds are required in Euros, we are exposed to foreign currency exchange risks. With the aim of preserving capital, surplus liquidity is invested carefully for example into foreign currency investments. Exchange rate fluctuations can reduce the value of our financial positions. We limit the effects of the identified risks by means of a coordinated and consistently implemented risk strategy. Besides applying natural hedging relationships where possible, a matter of principle, foreign exchange forward contracts are concluded as instruments to mitigate foreign currency exchange risk associated with foreign currency-denominated payments. However, the foreign exchange forward contracts which we entered were not designated as hedging instruments under IFRS.

The carrying amount of the monetary assets and liabilities denominated in U.S. dollar at the dates indicated are as follows:

(in millions)	December 31, 2022	December 31, 2021
Cash and cash equivalents in U.S. dollar	€ 1,487.4	€ 436.2
Monetary assets in U.S. dollar	7,098.5	11,895.5
Monetary liabilities and provisions in U.S. dollar	1,527.8	656.7
Total	**€ 7,058.1**	**€ 11,675.0**

The following tables demonstrate the sensitivity to a reasonably possible change in U.S. dollar exchange rates or U.S. dollar forward rates, with all other variables held constant. The impact on our profit before tax is due to changes in the fair value of monetary assets and liabilities. The exposure to foreign currency changes for all other currencies is not material.

		1 € =	Closing rate		Average rate	
Currency	**Country**		**2022**	**2021**	**2022**	**2021**
U.S. dollar	United States		1.0666	1.1326	1.0530	1.1827

(in millions)	Change in U.S. dollar rate	Effect on profit / (loss) before tax	Effect on pre-tax equity
	+5 %	€ (195.2)	€ (191.5)
2022	-5%	215.7	211.7
	+5 %	(329.5)	(328.5)
2021	-5%	364.3	363.0

12.6 Credit Risk Management

Credit risks address the risks that a counterparty will not meet its obligations under a financial instrument or customer contract, leading to a financial loss. We are exposed to credit risks from our operating activities, including deposits with banks and financial institutions, foreign exchange transactions and trade and other receivables.

Trade and Other Receivables

Our exposure to credit risks of trade receivables is primarily related to transactions with corporate customers in the biopharma / biotech industry that operate in the United States or Germany as well as governments which are customers established in connection with fulfilling our commercial obligations in our territories as defined under our current COVID-19 collaboration agreements. An analysis of the aging of receivables and the creditworthiness of customers is used to evaluate this risk at each reporting date. We follow risk control procedures to assess the credit quality of our customers taking into account their financial position, past experience and other factors. The compliance with credit limits by corporate customers is regularly monitored by us.

As of December 31, 2022, the outstanding trade receivables were mainly due from our collaboration partner Pfizer. Besides well-established pharmaceutical companies and governmental institutions, to a smaller extent, our other customers are medical universities, other public institutions and peers in the biopharma industry, which all have very high credit ratings. Due to this customer portfolio, the credit risk on trade receivables is generally very low. We have not incurred bad debt expense and do not expect that this will change with respect to the trade receivables outstanding as of December 31, 2022.

Generally, if overdue by more than 90 days and not subject to enforcement activity, trade receivables are considered for write-offs. The maximum exposure to credit risk at the reporting date is the carrying value of each class of financial assets disclosed in Note 12.2. The expected credit risk on trade receivables and other financial assets derived from applying the simplified approach in calculating expected credit losses was estimated to be not material as of December 31, 2022, and December 31, 2021. We do not hold collateral as security.

Cash and Cash Equivalents as well as Cash Deposits with an Original Term of Three Months and MMFs

Credit risks from balances with banks and financial institutions are managed by our Treasury department in accordance with our investment and asset management policy.

Credit risk stemming from cash and cash equivalents, cash deposits with an original term of three months as well as from MMFs is very low due to its demand feature and the high credit rating of the respective banks.

The maximum exposure to credit risk for the components of the consolidated statements of financial position as of December 31, 2022, and December 31, 2021, are the carrying amounts as illustrated in Note 12.1 and Note 12.2.

12.7 Liquidity Risk

We plan to invest heavily in R&D as we make a strong drive to build out our global development organization and diversify our therapeutic area footprint. Additionally, we plan to enhance capabilities through complementary acquisitions, technologies, infrastructure and manufacturing. Our liquidity management ensures the availability of cash and cash equivalents, short term financial instruments for operational activities and further investments through appropriate budget planning. In addition, a sufficient level of cash and cash equivalents, which is managed centrally, is always maintained to finance the operational activities.

We monitor liquidity risks using a liquidity planning tool.

Ultimately, the responsibility for liquidity risk management lies with our Management Board, which has established an appropriate approach to managing short-, medium- and long-term financing and liquidity requirements. We manage liquidity risks by holding appropriate reserves, as well as by monitoring forecasted and actual cash flows and reconciling the maturity profiles of financial assets and liabilities.

Risk Concentration

Concentrations arise when the number of counterparties is small or when a larger number of counterparties is engaged in similar business activities, or activities in the same geographical region, or has economic features that would cause their ability to meet contractual obligations to be affected similarly by changes in economic, political or other conditions. Concentrations indicate the relative sensitivity of our performance to developments affecting a particular industry.

The maturity profile of our financial liabilities based on contractual undiscounted payments is summarized as follows:

Year ended December 31, 2022

(in millions)	Less than 1 year	1 to 5 years	More than 5 years	Total
Loans and borrowings	€ —	€ 2.1	€ —	**€ 2.1**
Trade and other payables	204.1	—	—	**204.1**
Lease liabilities	40.5	112.9	79.1	**232.5**
Contingent consideration	—	—	6.1	**6.1**
Other financial liabilities	785.1	—	—	**785.1**
Total	**€ 1,029.7**	**€ 115.0**	**€ 85.2**	**€1,229.9**

Year ended December 31, 2021

(in millions)	Less than 1 year	1 to 5 years	More than 5 years	Total
Loans and borrowings	€ 2.6	€ 11.5	€ 6.1	**€ 20.2**
Trade and other payables	160.0	—	—	**160.0**
Lease liabilities	31.3	89.1	88.9	**209.3**
Contingent consideration	—	—	6.1	**6.1**
Foreign exchange forward contracts	63.0	—	—	**63.0**
Other financial liabilities	818.7	—	—	**818.7**
Total	**€ 1,075.6**	**€ 100.6**	**€ 101.1**	**€1,277.3**

12.8 Changes in Liabilities Arising from Financing Activities

Year ended December 31, 2022

(in millions)	January 1, 2022	Cash flows	Acquisition of subsidiaries and businesses	Changes in fair value	New leases and disposals	Reclassification	Other	December 31, 2022
Current obligations under lease contracts	€ 27.9	€(41.1)	€ —	€ —	€ 14.8	€ 33.3	€ 1.1	€ 36.0
Non-current obligations under lease contracts	153.7	—	—	—	52.6	(33.3)	1.1	174.1
Loans and borrowings	119.9	(18.0)	—	—	—	—	(99.8)[1]	2.1
Convertible note – embedded derivative	308.7	—	—	—	—	—	(308.7)[1]	—
Total	**€ 610.2**	**€(59.1)**	**€ —**	**€ —**	**€ 67.4**	**€ —**	**€(406.3)**	**€ 212.2**

(1) Related to the early redemption of our convertible note during the year ended December 31, 2022, as further described in Note 15.

Year ended December 31, 2021

(in millions)	January 1, 2021	Cash flows	Acquisition of subsidiaries and businesses	Changes in fair value	New leases and disposals	Reclassifi-cation	Other	December 31, 2021
Current obligations under lease contracts	€ 6.1	€(14.1)	€ —	€ —	€ 22.1	€ 13.4	€ 0.4	**€ 27.9**
Non-current obligations under lease contracts	78.1	—	—	—	87.7	(13.4)	1.3	**153.7**
Loans and borrowings	155.9	(52.6)	1.3	—	—	—	15.3	**119.9**
Convertible note – embedded derivative	30.9	—	—	277.8	—	—	—	**308.7**
Total	**€ 271.0**	**€(66.7)**	**€ 1.3**	**€ 277.8**	**€ 109.8**	**€ —**	**€17.0**	**€ 610.2**

13 Inventories

(in millions)	December 31, 2022	December 31, 2021
Raw materials and supplies	€ 409.7	€ 248.3
Unfinished goods	21.0	84.5
Finished goods	8.9	169.7
Total	**€ 439.6**	**€ 502.5**

During the year ended December 31, 2022, inventory write-offs to net realizable value and reserves related to our COVID-19 vaccine amounting to €484.6 million were recognized in cost of sales due to the switch from the BNT162b2 vaccine to an Omicron-adapted bivalent vaccine and further raw materials reserves recognized with respect to our excess stock, compared to €194.6 million in the previous period. The inventories valued at net realizable value in our consolidated statements of financial position as of December 31, 2022, consider contractual compensation payments. We have not pledged any inventories as securities for liabilities. During the years ended December 31, 2022, and 2021, costs of inventories in the amount of €1,550.6 million and €1,255.1 million, respectively, were recognized as cost of sales.

14 Other Non-Financial Assets

(in millions)	December 31, 2022	December 31, 2021
Sales tax receivable	€ 93.8	€ 26.7
Deferred expenses	88.7	62.1
Prepayments related to CRO and CMO contracts	35.3	22.8
Prepayments related to service contracts	31.3	6.5
Other	29.3	9.7
Total	**€ 278.4**	**€ 127.8**
Total current	271.9	113.4
Total non-current	6.5	14.4

15 Issued Capital and Reserves

As of December 31, 2022, the number of shares outstanding was 243,215,169. This amount excludes 5,337,031 shares held in treasury. For the year ended December 31, 2021, the number of shares outstanding was 242,521,489, excluding 3,788,592 shares held in treasury.

Second Tranche Share Repurchase Program

In November 2022, our Management Board and Supervisory Board authorized the second tranche of our share repurchase program of ADSs, with a value of up to $0.5 billion, commencing on December 7, 2022.

Capital Transactions During the Year Ended December 31, 2022

In January 2022, we announced a new research, development and commercialization collaboration with Pfizer to develop a potential first mRNA-based vaccine for the prevention of shingles (herpes zoster virus, or HZV). In connection with this collaboration, Pfizer agreed to make an equity investment in us, acquiring 497,727 ordinary shares paying a total amount of €110.6 million. The issuance of 497,727 ordinary shares with the nominal amount of €0.5 million was registered with the commercial register (*Handelsregister*) on March 24, 2022. The equity investment which was issued in a foreign currency represents a derivative from the date of signing until the date of closing of the transaction. From the fair value measurement of this derivative, €43.0 million were recognized in finance income in our consolidated statements of profit or loss during the year ended December 31, 2022. At closing date, in February 2022, this derivative and the agreed investment amount were recognized in our capital reserve and, taking an increase in share capital of €0.5 million into account, led to a net increase of the capital reserve of €67.1 million in our consolidated statements of financial position.

In March 2022, we redeemed our convertible note by exercising our early redemption option (see Note 12), which was fulfilled in April 2022, by issuing 1,744,392 ordinary shares. The nominal amount of €1.8 million was recorded in share capital and, finally, as a result of the transaction, the capital reserve increased by €233.2 million in our consolidated statements of financial position. The declaratory registration with the commercial register (*Handelsregister*) was made on May 20, 2022.

In June 2022, at the Annual General Meeting, our shareholders approved the proposed special cash dividend of €2.00 per ordinary share (including those held in the form of ADSs), which led to an aggregate payment of €484.3 million.

In March 2022, our Management Board and Supervisory Board authorized a share repurchase program of ADSs, pursuant to which we may repurchase ADSs in the amount of up to $1.5 billion over the next two years. On May 2, 2022, the first tranche of our share repurchase program of ADSs, with a value of up to $1.0 billion, commenced. In November 2022, our Management Board and Supervisory Board authorized the second tranche of our share repurchase program of ADSs, with a value of up to $0.5 billion, commencing on December 7, 2022. During the year ended December 31, 2022, ADSs were repurchased at an average price of $143.98, for total consideration of $1.0 billion (€986.4 million).Repurchased ADSs were used to satisfy settlement obligations under our share-based payment arrangements.

In November and December 2022, the ESOP 2018 and LTI-plus awards were settled by transferring ordinary shares previously held in treasury to the entitled employees and Management Board members (see Note 16**)**.

Capital Transactions During the Year Ended December 31, 2021

In November 2020, we entered into a sales agreement, or the Sales Agreement, with Jefferies LLC and SVB Leerink LLC (now known as SVB Securities LLC), as sales agents, to establish an at-the-market offering program, pursuant to which we may sell, from time to time, ADSs representing ordinary shares for aggregate gross proceeds of up to $500.0 million. During the year ended December 31, 2021, we sold 995,890 ADSs, each representing one of our ordinary shares and previously held in treasury, under the Sales Agreement. During the year ended December 31, 2021, the aggregate gross proceeds were $200.0 million (€163.6 million). We did not sell any ADS during year ended December 31, 2022. As of December 31, 2022, the remaining capacity under the Sales Agreement is still $207.1 million. Under the at-the-market offering program ADSs are sold via the stock exchange and therefore no shareholders' subscription rights are affected. As a result of the transaction, treasury shares in the amount of €1.0 million were issued and the capital reserve increased by €162.6 million during the year ended December 31, 2021. Costs of €2.7 million related to the equity transaction were recorded in equity as deduction from the capital reserve.

16 Share-Based Payments

During the years ended December 31, 2022, 2021, and 2020, our share-based payment arrangements led to the following expenses:

(in millions)	Note	Years ended December 31, 2022	2021	2020
Expense arising from equity-settled share-based payment arrangements		€ 46.5	€61.0	€32.1
Employee Stock Ownership Plan	*16.5*	*13.8*	*20.2*	*17.1*
Chief Executive Officer Grant	16.4	*3.1*	*5.9*	*11.3*
Management Board Grant[1]	16.3	*4.3*	*2.4*	*2.7*
BioNTech 2020 Employee Equity Plan for Employees Based Outside North America	16.1	*25.3*	*32.5*	*1.0*
Expense arising from cash-settled share-based payment arrangements		61.5	32.7	0.7
Employee Stock Ownership Plan	16.5	*53.4*	*6.3*	—
Management Board Grant[1]	16.2, 16.3	—	*3.6*	*0.7*
BioNTech Restricted Stock Unit Plan for North America Employees	16.1	*8.1*	*22.8*	—
Total		**€108.0**	**€93.7**	**€32.8**
Cost of sales		3.0	7.0	1.1
Research and development expenses		84.6	60.5	24.9
Sales and marketing expenses		0.8	0.5	0.1
General and administrative expenses		19.6	25.7	6.7
Total		**€108.0**	**€93.7**	**€32.8**

(1) In May 2021 and 2022, phantom options were granted under the Management Board Grant for the years 2021 and 2022 which led to a modification from equity-settled to cash-settled share-based payment arrangement and a reclassification of €1.1 million and €3.3 million between equity and non-current other liabilities, respectively. Expenses incurred before and after the modification dates have been disclosed as equity-settled or cash-settled share-based payment arrangement, respectively. The amount includes expenses incurred with respect to a one-time signing bonus granted to Jens Holstein as of his appointment to the Management Board (see Note 20.2).

During the years ended December 31, 2022, 2021, and 2020, our share-based payment arrangements led to a cash outflow of €51.8 million, €13.4 million and nil million, respectively. We expect to settle equity-settled share-based payment arrangements under the Chief Executive Officer Grant (see Note 16.4) and under the Employee Stock Ownership Plan (see Note 16.5) on a net basis by delivering to the participant a number of ADSs equal to the net value of the exercised option rights after deduction of (i) the exercise price and (ii) the applicable wage taxes (including solidarity surcharge thereon and church tax, if applicable) and social security contributions resulting from such exercise. This reduces the dilutive impact of the respective rights. If all of the rights outstanding as of December 31, 2022, will be exercised accordingly, the cash outflow to the tax authority in 2023 would amount to approximately €360.0 million (based on the share price as of December 31, 2022).

16.1 BioNTech Employee Equity Plan

BioNTech 2020 Employee Equity Plan for Employees Based Outside North America (Equity-Settled)

Description of Share-Based Payments

In December 2020, we approved the BioNTech 2020 Employee Equity Plan for employees based outside North America, or the European Plan. Under the European Plan, Restricted Stock Units, or RSUs, are offered to our employees. As of the grant date in February 2021, the European Plan was implemented for the calendar year 2020 by entering into award agreements with our employees under the LTI 2020 program. In addition, further award agreements were entered into under the LTI-plus program with employees who did not participate in the Employee Stock Ownership Plan, or ESOP. In January 2022 and December 2022, the European Plan was granted for the calendar years 2021 and 2022, the LTI 2021 and LTI 2022 program, respectively. RSUs issued under the LTI 2020, LTI 2021 and LTI

2022 programs vest annually in equal installments over respective waiting periods of four years commencing in December 2020, December 2021 and December 2022, respectively. RSUs issued under the LTI-plus program vested annually in equal installments over the waiting period of two years, which elapsed in December 2022. Hence, during the year ended December 31, 2022, the LTI-plus awards were settled by transferring shares previously held in treasury, see Note 15. All programs were classified as equity-settled as we have the ability to determine the method of settlement.

Measurement of Fair Values

The fair values of the awards issued under the European Plan were based upon the price of our ADSs representing ordinary shares at grant date.

Reconciliation of Outstanding Share-Options

	LTI-plus program	LTI 2020 program	LTI 2021 program	LTI 2022 program
As of January 1, 2021	396,938	252,766	—	—
Forfeited / Modified	(24,927)	(10,350)	—	—
Granted / Allocated	—	—	110,036	—
As of December 31, 2021	372,011	242,416	110,036	—
As of January 1, 2022	372,011	242,416	110,036	—
Forfeited / Modified	(7,932)	(7,111)	(5,428)	—
Granted / Allocated	—	—	—	396,110
Exercised[1]	(364,079)	—	—	—
As of December 31, 2022	**—**	**235,305**	**104,608**	**396,110**
thereof vested	—	*119,291*	*27,365*	—
thereof un-vested	—	*116,014*	*77,243*	*396,110*

(1) The closing price of an American Depositary Share of BioNTech on Nasdaq on December 15, 2022, the settlement date, converted from USD to Euro using the exchange rate published by the German Central Bank (*Deutsche Bundesbank)* on the same day was €171.40.

Inputs Used in Measurement of the Fair Values at Grant Dates

	LTI-plus program	LTI 2020 program	LTI 2021 program	LTI 2022 program
Weighted average fair value	87.60	92.21	203.22	165.03
Waiting period (in years)	2.0	4.0	4.0	4.0

BioNTech 2020 Restricted Stock Unit Plan for North America Employees (Cash-Settled)

Description of Share-Based Payments

In December 2020, we approved the BioNTech 2020 Restricted Stock Unit Plan for North America Employees, or the North American Plan. Under the North American Plan, RSUs are offered to our employees. These RSUs vest over four years, with 25% vesting one year after the service commencement date and the remainder vesting in equal quarterly installments thereafter. The first awards under the North American Plan were granted in February 2021. The service date for these awards is the date as of which the employee became employed by BioNTech US. During the years ended December 31, 2022, and 2021, further awards were granted under the North American Plan, which included awards granted to new hire employees and ongoing recurring awards to existing employees on the approximate anniversary of each employee's start date of employment with BioNTech US. As these RSUs are intended to be cash-settled upon vesting, the awards were defined as a cash-settled share-based payment arrangement. During the years ended December 31, 2022, 2021, and 2020, the exercise of RSUs resulted in a cash outflow of €9.4 million, €10.1 million and nil million, respectively.

As of December 31, 2022, the liability related to these awards amounted to €13.4 million (€13.0 million as of December 31, 2021).

16.2 Management Board Grant – Short-Term Incentive (Cash-Settled)

The service agreements with our Management Board provide for a short-term incentive compensation which is an annual performance-related bonus for the years of their respective service periods.

50% of those yearly awards are paid out one year after the achievement of the performance targets for the respective bonus year has been determined subject to an adjustment relative to the performance of the price of the American Depositary Shares representing our ordinary shares during that year (second installment). The second installments represent cash-settled share-based payment arrangements. The fair values of the liabilities are recognized over the awards' vesting periods beginning when entering or renewing service agreements, i.e., being the service commencement date, until each separate determination date and are remeasured until settlement date. As of December 31, 2022, the liability related to these awards amounted to €2.3 million (€1.0 million as of December 31, 2021).

16.3 Management Board Grant Long-Term Incentive (Partly Equity-Settled, Partly Cash-Settled)

Description of Share-Based Payments

The service agreements with our Management Board provide for long-term incentive compensation (Management Board Grant - LTI) through an annual grant of options to acquire BioNTech shares during their respective service periods. The options granted each year will be subject to the terms and conditions of the respective authorizations of the Annual General Meeting creating our Employee Stock Ownership Plan (ESOP) and the applicable option agreement thereunder.

The options will vest annually in equal installments over four years commencing on the first anniversary of the allocation date and will be exercisable four years after the allocation date. The vested options can only be exercised if each of the following performance criteria has been achieved: (i) at the time of exercise, the current price is equal to or greater than the threshold amount (that is, the exercise price, provided that such amount increases by seven percentage points on each anniversary of the allocation date); (ii) at the time of exercise, the current price is at least equal to the target price (that is, (a) for the twelve-month period starting on the fourth anniversary of the allocation date, $8.5 billion divided by the total number of the ordinary shares outstanding immediately following the initial public offering (other than ordinary shares owned by BioNTech), and (b) for each twelve-month period starting on the fifth or subsequent anniversary of the allocation date, 107% of the target share price applicable for the prior twelve-month period); and (iii) the closing price for the fifth trading day prior to the start of the relevant exercise window is higher than the exercise price by at least the same percentage by which the Nasdaq Biotechnology Index or a comparable successor index as of such time is higher than such index was as of the last trading day before the allocation date. Following the expiry of the waiting period, option rights may be exercised during the exercise windows as set out in the ESOP agreement. The option rights can be exercised up to ten years after the allocation date. If they have not been exercised by that date, they will be forfeited without compensation.

The right to receive options generally represents an equity-settled share-based payment arrangement. The allocation of the number of issued options in 2020 occurred in February 2020. In May 2021 and May 2022, phantom options equivalent to the number of options the Management Board members would have been entitled to receive for 2021 and 2022 were granted under the Management Board Grant which led to a modification from equity-settled to cash-settled share-based payment arrangement and a reclassification of €1.1 million and €3.3 million between equity and non-current other liabilities as of the respective allocation dates. As of December 31, 2022, the assessment of options expected to be allocated in future years was based on estimated allocation dates in the middle of the respective years.

Measurement of Fair Values

A Monte-Carlo simulation model has been used to measure the fair values at the (estimated) allocation dates of the Management Board Grant. This model incorporates the impact of the performance criteria regarding share price and index development described above. The parameters used for measuring the fair values as of the respective (estimated) allocation dates were as follows:

	Allocation date February 2020	Allocation date May 12, 2021[1]	Allocation date May 17, 2021[1]	Allocation date May 2022[1]
Weighted average fair value	€ 10.83	€ 54.51	€ 50.69	€ 65.99
Weighted average share price	€ 28.20	€ 174.51	€ 185.92	€ 153.16
Exercise price[2]	€ 28.32	€ 173.66	€ 175.16	€ 142.60
Expected volatility (%)	36.6%	46.5%	46.5%	44.4%
Expected life (years)	4.8	4.6	4.6	5.8
Risk-free interest rate (%)	1.6%	3.8%	3.8%	3.9%

(1) Classified as cash-settled share-based payment arrangement; all other share-based payment arrangements are classified as equity-settled.
(2) The share options allocated as of February 2020 and the phantom share options allocated as of May 2021 and 2022 are subject to an effective exercise price cap.

	Estimated allocation date 2023	Estimated allocation date 2024	Estimated allocation date 2025	Estimated allocation date 2026
Weighted average fair value[1]	€ 63.84	€ 57.06	€ 54.80	€ 49.70
Weighted average share price[1]	€ 140.84	€ 140.84	€ 140.84	€ 140.84
Exercise price[1]	€ 142.95	€ 148.51	€ 155.51	€ 161.62
Expected volatility (%)	43.1%	38.3%	38.2%	38.5%
Expected life (years)[1]	5.8	5.8	5.8	5.8
Risk-free interest rate (%)	3.9%	3.9%	3.9%	3.9%

(1) Valuation parameter for estimated allocation dates derived from the Monte-Carlo simulation model.

For the awards allocated as of February 2020, the exercise price for each option is $30.78 (€28.32), calculated using the foreign exchange rate published by the German Central Bank (*Deutsche Bundesbank*) as of the grant date. The share options allocated as of February 2020 are subject to an effective exercise price cap, which means that the exercise price shall be adjusted to ensure that the current price of an ADS as of the exercise date does not exceed 800% of the exercise price. Our Supervisory Board reserves the right to limit the economic benefit from the exercise of the options to extent the result from extraordinary events or developments. For the awards allocated as of May 12, 2021, May 17, 2021, and May 31, 2022 the exercise prices are $185.23 (€173.66), $186.83 (€175.16) and $152.10 (€142.60), respectively (all amounts calculated as of December 31, 2022, using the foreign exchange rate as published by the German Central Bank (*Deutsche Bundesbank*)). For the awards with estimated allocation dates, the exercise prices of options expected to be allocated have been derived from the Monte-Carlo simulation model. Those will be adjusted until the actual allocation has occurred and the exercise price has ultimately been determined. The phantom share options allocated as of May 2021 and 2022 are subject to the effective exercise price cap. In addition, the maximum compensation that the Management Board members are entitled to receive under those relevant agreements together with other compensation components received by each such board member in the respective grant year is capped at €20.0 million for Ugur Sahin as Chief Executive Officer (CEO) and €10.0 million for all other Management Board members. Expected volatility was based on an evaluation of the historical volatilities of comparable companies over the historical period commensurate with the expected option term. The expected term was based on general option holder behavior for employee options.

Reconciliation of Outstanding Share-Options

The (phantom) share options allocated and expected to be allocated to our Management Board as of December 31, 2022, are presented in the table below.

	Allocation date February 2020	Allocation date May 12, 2021[1]	Allocation date May 17, 2021[1]	Allocation date May 2022[1]
(Phantom) share options outstanding (expected to be allocated)	248,096	45,279	6,463	86,118
thereof allocated and vested but subject to performance and waiting requirements	*124,048*	*11,320*	*1,616*	—
thereof allocated and un-vested	*124,048*	*33,959*	*4,847*	*86,118*
Weighted average exercise price (€)	28.32	173.66	175.16	142.60

(1) Classified as cash-settled share-based payment arrangement; all other share-based payment arrangements are classified as equity-settled.

	Estimated allocation date 2023[1]	Estimated allocation date 2024[1]	Estimated allocation date 2025[1]	Estimated allocation date 2026[1]
(Phantom) share options outstanding (expected to be allocated)	97,436	93,785	63,251	48,705
Weighted average exercise price (€)	142.95	148.51	155.51	161.62

(1) Valuation parameter derived from the Monte-Carlo simulation model.

For the awards with estimated allocation dates, the numbers of options expected to be allocated have been derived from a Monte-Carlo simulation model. Those will be adjusted until the actual allocation has occurred and the number of options granted has ultimately been determined.

As of December 31, 2022, the share options allocated and expected to be allocated under our equity-settled share-based payment arrangements had a remaining weighted average expected life of 4.0 years (as of December 31, 2021: 3.6 years).

As of December 31, 2022, the liability related to the phantom option awards amounted to €5.6 million (€3.2 million as of December 31, 2021).

16.4 Chief Executive Officer Grant (Equity-Settled)

Description of Share-Based Payments

In September 2019, we granted Prof. Ugur Sahin, M.D., an option to purchase 4,374,963 of our ordinary shares, subject to Prof. Sahin's continuous employment with us. The options' exercise price per share is the Euro translation of the public offering price from our initial public offering, €13.60 ($15.00), which is subject to the effective exercise price cap and the maximum cap mechanism. Under the exercise price cap the exercise price shall be adjusted to ensure that the current price of an ADS as of the exercise date does not exceed 800% of the exercise price. Under the maximum cap mechanism the maximum economic benefit receivable in respect of any exercised option, is capped at $240.00. As a result, the effective exercise price will not increase above a Euro amount equivalent to $30.00. The options vest annually in equal installments after four years commencing on the first anniversary of the initial public offering and will be exercisable four years after the initial public offering. The vested option rights can only be exercised if and to the extent that each of the following performance criteria has been achieved: (i) at the time of exercise, the current price is equal to or greater than the threshold amount (that is, the exercise price, provided that such amount increases by seven percentage points on each anniversary of the allocation date); (ii) at the time of exercise, the current price is at least equal to the target price (that is, (a) for the twelve-month period starting on the fourth anniversary of the allocation date, $8.5 billion divided by the total number of the shares outstanding immediately following the initial public offering (other than shares owned by us), and (b) for each twelve-month period starting on the fifth or subsequent anniversary of the allocation date, 107% of the target share price applicable for the prior twelve-month period); and (iii) the closing price for the fifth trading day prior to the start of the relevant exercise window is higher than the exercise price by at least the same percentage by which the Nasdaq Biotechnology Index or a comparable successor index as of such time is higher than such index was as of the last trading day before the allocation date. Following the expiry of the waiting period, option rights may be exercised during the exercise windows as defined by our ESOP. The option rights can be exercised up to ten years after the allocation date. If they have not been exercised by that date, they will be forfeited without compensation.

Measurement of Fair Values

A Monte-Carlo simulation model has been used to measure the fair value at the grant date of the Chief Executive Officer Grant. This model incorporates the impact of the performance criteria regarding share price and index development described above in the calculation of the award's fair value at grant the date. The inputs used in the measurement of the fair value at grant the date of the Chief Executive Officer Grant were as follows:

	Grant date October 9, 2019
Weighted average fair value	€ 5.63
Weighted average share price	€ 13.60
Exercise price	€ 13.60
Expected volatility (%)	41.4%
Expected life (years)	5.4
Risk-free interest rate (%)	1.5%

Expected volatility was based on an evaluation of the historical volatilities of comparable companies over the historical period commensurate with the expected term. The expected term was based on general option holder behavior for employee options.

Reconciliation of Outstanding Share-Options

During the years ended December 31, 2022, and 2021, no further options were granted or forfeited. As of December 31, 2022, 75% of the options have vested but are subject to waiting requirements.

As of December 31, 2022, the share options outstanding had a remaining weighted average expected life of 2.1 years (as of December 31, 2021: 3.1 years).

16.5 Employee Stock Ownership Plan (Partly Equity-Settled, Partly Cash-Settled)

Description of Share-Based Payments

Based on an authorization of the general meeting on August 18, 2017, we established a share option program under which we granted selected employees options to receive our shares. The program is designed as an Employee Stock Ownership Plan, or ESOP. We offered the participants a certain number of rights by explicit acceptance by the participants. The exercise of the option rights in accordance with the agreement gives the participants the right to obtain shares against payment of the exercise price. With respect to the Management Board members, other than Ryan Richardson, who was not a Management Board member at the time the options were granted, the options are subject to the effective exercise price cap as well as the maximum cap mechanism. Under the exercise price cap the exercise price shall be adjusted to ensure that the current price of an ADS as of the exercise date does not exceed 800% of the exercise price. Under the maximum cap mechanism, the maximum economic benefit receivable in respect of any exercised option, is capped at $240. As a result, the effective exercise price will not increase above a Euro amount equivalent to $30.00. The option rights (other than Prof. Özlem Türeci's, M.D., and Ryan Richardson's options) generally fully vest after four years and can only be exercised if: (i) the waiting period of four years has elapsed; and (ii) at the time of exercise, the average closing price of the shares of the Company or the average closing price of the right or certificate to be converted into an amount per share on the previous ten trading days preceding the exercise of the option right exceeds the strike price by a minimum of 32%, with this percentage increasing by eight percentage points as of the fifth anniversary of the respective issue date and as of each subsequent anniversary date. Following the expiry of the waiting period, option rights may be exercised within a period of four weeks from the date of the Annual General Meeting or the publication of the annual financial statements, the semi-annual report or our most recent quarterly report or interim report (exercise windows). The option rights can be exercised up to eight years after the allocation date. If they have not been exercised by that date, they will be forfeited without compensation.

By way of a shareholders' resolution of the general meeting on August 19, 2019, the authorization to issue such option rights was amended such that, in order for the options to be exercisable, the average closing price of the Company's shares or the average closing price of the right or certificate to be converted into an amount per share on the ten trading days immediately preceding the exercise must exceed the strike price by a minimum of 28%, with this percentage increasing by seven percentage points as of the fifth anniversary of the issue date and as of each subsequent anniversary date. Also, in addition to the aforementioned requirements, the exercise is only possible if the share price (calculated by reference to the price of the ordinary share underlying the ADS) has performed similar to or better than the Nasdaq Biotechnology Index. The changes made do not affect option rights already issued.

Measurement of Fair Values

The fair value of the ESOP has been measured using a binomial model. Service conditions attached to the arrangement were not taken into account in measuring the fair value.

The share options can only be exercised by the grantee if the price of the share is equal or greater to the threshold amount as defined in the arrangement. Moreover, the option rights can only be exercised if the IPO has occurred. Both conditions have been incorporated into the fair value at the grant date.

The inputs used in the measurement of the fair values at the grant date of the ESOP were as follows:

	Grant date November 15, 2018	Grant dates between February 21 and April 3, 2019	Grant dates between April 29 and May 31, 2019	Grant date December 1, 2019
Weighted average fair value	€ 7.41	€ 6.93	€ 7.04	€ 9.49
Weighted average share price	€ 14.40	€ 15.72	€ 16.03	€ 19.84
Exercise price[1]	€ 10.14	€ 15.03	€ 15.39	€ 15.82
Expected volatility (%)	46.0%	46.0%	46.0%	46.0%
Expected life (years)	5.8	6.0	6.0	5.5
Risk-free interest rate (%)	0.1%	0.1%	0.1%	0.1%

(1) With respect to the Management Board members, other than Ryan Richardson who was not a Management Board member at the time the options were granted, the options are subject to the effective exercise price cap as well as the maximum cap mechanism.

Expected volatility has been based on an evaluation of the historical and the implied volatilities of comparable companies over the historical period commensurate with the expected term. The expected term has been based on general option holder behavior for employee options.

Reconciliation of Outstanding Share-Options (Equity-Settled)

Set out below is an overview of changes to share options outstanding and number of ordinary shares underlying these options that occurred during the periods indicated:

	Share options outstanding	Number of ordinary shares underlying options	Weighted average exercise price (€)[1]
As of January 1, 2021	645,892	11,626,056	10.23
Forfeited	(3,885)	(69,932)	10.14
As of December 31, 2021	**642,007**	**11,556,124**	**10.23**
As of January 1, 2022	642,007	11,556,124	10.23
Modified[2]	(1,040)	(18,720)	10.14
Exercised[3]	(583,383)	(10,500,890)	10.14
As of December 31, 2022	**57,584**	**1,036,514**	**11.10**
thereof vested	*48,331*	*869,960*	*10.14*
thereof un-vested	*9,253*	*166,554*	*15.29*

(1) With respect to the Management Board members, other than Ryan Richardson who was not a Management Board member at the time the options were granted, the options are subject to the effective exercise price cap as well as the maximum cap mechanism.
(2) Rights have been modified to cash-settled rights, all other terms remained unchanged.
(3) The average closing price of an American Depositary Share of BioNTech on Nasdaq weighted over the various settlement dates converted from USD to Euro using the exchange rate published by the German Central Bank (*Deutsche Bundesbank)* on the same days was €160.44.

The Supervisory Board determined in September 2022 that the ESOP settlement in November and December 2022 would be made by delivery of shares (in the form of ADSs) equal to the net value of the exercised option rights after deduction of (i) the exercise price and (ii) the applicable wage taxes (including solidarity surcharge thereon and church tax, if applicable) and social security contributions resulting from such exercise. The respective number of ADSs was settled with treasury shares. The applicable wage taxes (including solidarity surcharge thereon and church tax, if applicable) and social security contributions resulting from and withheld upon the exercise amounted to €724.0 million and were paid in January 2023 in cash directly to the respective authorities. The settlement mechanism decision did neither change the rights as such nor did it change the classification as equity-settled option rights.

As of December 31, 2022, the share options outstanding under our equity-settled share-based payment arrangements had a remaining weighted average expected life of 1.8 years (as of December 31, 2021: 2.7 years).

Development of Share-Options (Cash-Settled)

During the year ended December 31, 2022, 343,854 phantom options were granted under the ESOP which each gives the participants the right to receive a cash-payment equal to the difference between an exercise closing price (average closing price of an American Depositary Share of BioNTech on Nasdaq over the last ten trading days preceding the exercise date) and the exercise price. Generally, the options' exercise prices are €10.14. Contemporaneous with the exercise of the equity-based option rights in November and December 2022, 289,168 cash-settled phantom option rights were exercised and resulted in a cash outflow of €42.2 million. The average closing prices (10-day averages) of an American Depositary Share of BioNTech on Nasdaq weighted over the various settlement dates converted from USD to Euro using the exchange rate published by the German Central Bank (*Deutsche Bundesbank*) on the same days was €155.39. As of December 31, 2022, 131,853 cash-settled option rights remained outstanding. As of December 31, 2022, the liability related to cash-settled share-based payment option rights under the ESOP program amounted to €14.5 million (€3.1 million as of December 31, 2021), of which €11.2 million (nil as of December 31, 2021) related to rights already vested (partly subject to performance and waiting requirements). The liability is based on the fair value of the respective rights. The fair value is measured using a binomial model consistent with the grant date fair value measurement of the equity-based option rights described above which is updated on every reporting date.

17 Provisions and Contingencies

Provisions

(in millions)	December 31, 2022	December 31, 2021
Obligations from onerous CMO contracts	€ 235.5	€ —
Legal proceedings	0.1	177.9
Other	140.2	117.2
Total	**€ 375.8**	**€ 295.1**
Total current	367.2	110.2
Total non-current	8.6	184.9

As of December 31, 2022, our current provisions included €235.5 million (nil as of December 31, 2021) of obligations for production capacities derived from contracts with Contract Manufacturing Organizations, or CMOs, that became redundant as a direct result of the introduction of a new COVID-19 vaccine formulation, the switch from the BNT162b2 vaccine to an Omicron-adapted bivalent vaccine and due to increased internal manufacturing capacities during the year ended December 31, 2022. The related expenses were recognized in cost of sales in our consolidated statements of profit or loss. The change of €235.5 million compared to the previous period related to additions.

Provisions for legal proceedings mainly related to purported obligations arising out of certain contractual disputes unrelated to the below mentioned patent proceedings (€177.9 million as of December 31, 2021), were mainly released due to the favorable outcome of such proceeding received in March 2023 and treated as an adjusting event.

As of December 31, 2022, our current provisions included €140.2 million in other obligations mainly comprising inventor remunerations as well as customs and duties (€117.2 million as of December 31, 2021, mainly comprising inventor remunerations as well as customs and duties). The change of €23.0 million compared to the previous period related mainly to additions.

Contingencies

Our contingencies include, but are not limited to, intellectual property disputes and product liability and other product-related litigation. From time to time, in the normal course and conduct of our business, we may be involved in discussions with third parties about considering, for example, the use and/or remuneration for use of such third party's intellectual property. As of December 31, 2022, none of such intellectual property-related considerations that we have been notified of and for which potential claims could be brought against us or our subsidiaries in the future, fulfill the criteria for recording a provision. We are subject to an increasing number of product liability claims. Such claims often involve highly complex issues related to medical causation, correctness and completeness of product information (Summary of Product Characteristics/package leaflet) as well as label warnings and reliance thereon, scientific evidence and findings, actual and provable injury, and other matters. These complexities vary from matter to matter. As of December 31, 2022, none of these claims fulfill the criteria for recording a provision. Substantially all of our

contingencies are subject to significant uncertainties and, therefore, determining the likelihood of a loss and/or the measurement of any loss can be complex. Consequently, we are unable to estimate the range of reasonably possible loss. Our assessments, which result from a complex series of judgments about future events and uncertainties, are based on estimates and assumptions that have been deemed reasonable by management, but that may prove to be incomplete or inaccurate, and unanticipated events and circumstances may occur that might cause us to change those estimates and assumptions. We currently do not believe that any of these matters will have a material adverse effect on our financial position, and will continue to monitor the status of these and other claims that may arise. However, we could incur judgments, enter into settlements or revise our expectations regarding the outcome of matters, which could have a material adverse effect on our results of operations and/or our cash flows in the period in which the amounts are accrued or paid. We will continue to evaluate whether, if circumstances were to change in the future, the recording of a provision may be needed and whether potential indemnification entitlements exist against any such claim.

Certain pending matters to which we are a party are discussed below.

Alnylam Proceedings

In March 2022, Alnylam Pharmaceuticals, Inc., or Alnylam, filed a lawsuit against Pfizer and Pharmacia & Upjohn Co. LLC in the U.S. District Court for the District of Delaware alleging that an existing patent owned by Alnylam, U.S. Patent No. 11,246,933, or the '933 Patent, is infringed by the cationic lipid used in *Comirnaty*, and seeking monetary relief, which is not specified in their filings. We filed a counterclaim to become party to the Alnylam proceeding, and in June 2022, Alnylam added to its claims allegations that we induced infringement of the '933 Patent. Additionally, in July 2022, Alnylam filed a lawsuit against us, our wholly owned subsidiary, BioNTech Manufacturing GmbH, Pfizer and Pharmacia & Upjohn Co. LLC in the U.S. District Court for the District of Delaware alleging that we also induced infringement of a newly issued patent, U.S. Patent No. 11,382,979, or the '979 Patent, which is a continuation of the '933 Patent. The two lawsuits were consolidated on July 28, 2022 and are currently pending.

We believe we have strong defenses against the allegations claimed relative to each of the patents and intend to vigorously defend ourselves in the proceedings mentioned above. However, our analysis of Alnylam's claims is ongoing and complex, and we believe the outcome of the suit remains substantially uncertain. Taking into account discussions with our external lawyers, we do not consider the probability of an outflow of resources to be sufficient to recognize a provision at the balance sheet date. In our opinion, these matters constitute contingent liabilities as of the balance sheet date. However, it is currently impractical for us to estimate with sufficient reliability the respective contingent liabilities.

CureVac Proceedings

In July 2022, CureVac AG, or CureVac, filed a lawsuit against us and our wholly owned subsidiaries, BioNTech Manufacturing GmbH and BioNTech Manufacturing Marburg GmbH, in the Düsseldorf Regional Court, alleging *Comirnaty*'s infringement of one European patent, EP1857122B1, or the EP'122 Patent, and three Utility Models DE202015009961U1, DE202015009974U1, and DE202021003575U1. Later in July 2022, we and Pfizer filed a complaint for a declaratory judgment in the U.S. District Court for the District of Massachusetts, seeking a judgment of non-infringement by *Comirnaty* of U.S. Patent Nos. 11,135,312, 11,149,278 and 11,241,493. In August 2022, CureVac added European Patent EP3708668B1, or the EP'668 Patent, to its German lawsuit. In September 2022, we and Pfizer filed a declaration of non-infringement and revocation action against the EP'122 Patent and the EP'668 Patent in the Business and Property Courts of England and Wales. In addition, we filed a nullity action in the Federal Patent Court of Germany seeking a declaration that the EP'122 Patent is invalid. Lastly, on November 11, 2022, we filed cancellation actions seeking the cancellation of the three German Utility Models in the German Patent and Trademark Office. All of the proceedings are currently pending.

We believe we have strong defenses against the allegations claimed relative to each of the patents and utility models and intend to vigorously defend ourselves in the proceedings mentioned above. However, our analysis of CureVac's claims is ongoing and complex, and we believe the outcome of the suit remains substantially uncertain. Taking into account discussions with our external lawyers, we do not consider the probability of an outflow of resources to be sufficient to recognize a provision at the balance sheet date. In our opinion, these matters constitute contingent liabilities as of the balance sheet date. However, it is currently impractical for us to estimate with sufficient reliability the respective contingent liabilities.

Moderna Proceedings

In August 2022, ModernaTX, Inc., or Moderna, filed three patent infringement lawsuits against us and Pfizer related to *Comirnaty*. Moderna filed a lawsuit against us and Pfizer and our wholly owned subsidiaries, BioNTech Manufacturing GmbH, BioNTech Europe GmbH and BioNTech Manufacturing Marburg GmbH, Pfizer Manufacturing

Belgium NV, Pfizer Ireland Pharmaceuticals and Pfizer Inc. in the Düsseldorf Regional Court alleging *Comirnaty*'s infringement of two European Patents, 3590949B1, or the EP'949 Patent and 3718565B1, or the EP'565 Patent. Moderna filed a second lawsuit asserting infringement of the EP'949 Patent and EP'565 Patent against us and our wholly owned subsidiaries, BioNTech Manufacturing GmbH, BioNTech Europe GmbH and BioNTech Manufacturing Marburg GmbH, Pfizer Limited, Pfizer Manufacturing Belgium NV and Pfizer Inc. in the Business and Property Courts of England and Wales. Additionally, Moderna filed a lawsuit in the United States District Court for the District of Massachusetts against us and our wholly owned subsidiaries BioNTech Manufacturing GmbH and BioNTech US Inc. and Pfizer Inc. alleging infringement of U.S. Patent Nos. 10,898,574, 10,702,600 and 10,933,127 and seeking monetary relief, which was not specified in the filings. In September 2022, we and Pfizer filed a revocation action in the Business and Property Courts of England and Wales requesting revocation of the EP'949 Patent and EP'565 Patent. Later in September 2022, Moderna filed a lawsuit against us and our wholly owned subsidiary BioNTech Manufacturing GmbH and Pfizer B.V., Pfizer Export B.V., C.P. Pharmaceuticals International C.V. and Pfizer Inc. in the District Court of The Hague alleging *Comirnaty*'s infringement of the EP '949 Patent and EP'565 Patent. All of the proceedings are currently pending.

We believe we have strong defenses against the allegations claimed relative to each of the patents and intend to vigorously defend ourselves in the proceedings mentioned above. However, our analysis of Moderna's claims is ongoing and complex, and we believe the outcome of the suit remains substantially uncertain. Taking into account discussions with our external lawyers, we do not consider the probability of an outflow of resources to be sufficient to recognize a provision at the balance sheet date. In our opinion, these matters constitute contingent liabilities as of the balance sheet date. However, it is currently impractical for us to estimate with sufficient reliability the respective contingent liabilities.

18 Other Non-Financial Liabilities

(in millions)	December 31, 2022	December 31, 2021
Liabilities from wage taxes and social securities expenses	€ 761.8	€ 3.8
Liabilities to employees	50.6	30.2
Liabilities from share-based payment arrangements	36.2	20.6
Other	29.2	4.3
Total	**€ 877.8**	**€ 58.9**
Total current	860.8	46.1
Total non-current	17.0	12.8

Liabilities from wage taxes and social security expenses mainly include obligations that became due upon settlement of our share-based payment arrangements for the respective employees and members of the Management Board as further described in Note 16.

19 Leases

19.1 Amounts Recognized in the Consolidated Statements of Financial Position

Right-of-Use Assets

The following amounts are presented as right-of-use assets within the consolidated statements of financial position as of the dates indicated:

(in millions)	December 31, 2022	December 31, 2021
Buildings	€ 206.5	€ 175.0
Production facilities	3.0	19.4
Other operating equipment	2.4	3.5
Total	**€ 211.9**	**€ 197.9**

Additions to the right-of-use assets during the year ended December 31, 2022, were €118.3 million (during the year ended December 31, 2021: €126.5 million).

Lease Liability

The following amounts are included in loans and borrowings as of the dates indicated:

(in millions)	December 31, 2022	December 31, 2021
Current	€ 36.0	€ 27.9
Non-current	174.1	153.7
Total	**€ 210.1**	**€ 181.6**

19.2 Amounts Recognized in the Consolidated Statements of Profit or Loss

Depreciation Charge of Right-of-Use Assets

(in millions)	Years ended December 31, 2022	2021	2020
Buildings	€35.2	€14.7	€ 4.7
Production facilities	23.1	14.0	1.6
Other operating equipment	0.5	0.3	—
Total depreciation charge	**€58.8**	**€29.0**	**€ 6.3**
Interest on lease liabilities	5.1	2.9	2.0
Expense related to short-term leases and leases of low-value assets	27.1	9.5	1.2
Total amounts recognized in profit or loss	**€91.0**	**€41.4**	**€ 9.5**

19.3 Amounts Recognized in the Consolidated Statements of Cash Flows

During the year ended December 31, 2022, the total cash outflow for leases amounted to €46.2 million (during the year ended December 31, 2021: €17.0 million; during the year ended December 31, 2020: €14.7 million).

19.4 Extension Options

The Group has several lease contracts that include extension options. These options are negotiated by management to provide flexibility in managing the leased-asset portfolio and align with the Group's business needs. Management exercises judgement in determining whether these extension options are reasonably certain to be exercised. The undiscounted potential future lease payments, which relate to periods after the exercise date of renewal options and are not included in lease liabilities, amount to up to €163.1 million as of December 31, 2022, considering terms up until 2049 (as of December 31, 2021: €82.8 million considering terms up until 2049).

20 Related Party Disclosures

20.1 Parent and Ultimate Controlling Party

ATHOS KG, Holzkirchen, Germany is the sole shareholder of AT Impf GmbH, Munich, Germany and beneficial owner of our ordinary shares. ATHOS KG via AT Impf GmbH has de facto control over BioNTech based on its substantial shareholding, which practically enabled it to exercise the majority of voting rights to pass resolutions at our Annual General Meeting, or AGM. Entities controlled by ATHOS KG mainly provide rental and property management activities and sell property, plant and equipment to us.

20.2 Transactions with Key Management Personnel

In June 2022, at the Annual General Meeting, our shareholders voted to reappoint Helmut Jeggle as a member of the Supervisory Board and appointed two additional Supervisory Board members, Prof. Dr. Anja Morawietz and Prof. Dr. Rudolf Staudigl. In a meeting following the AGM, the Supervisory Board re-elected Helmut Jeggle as its Chair. All three members will serve in their roles until the 2026 AGM.

Key Management Personnel Compensation

Our key management personnel has been defined as the members of the Management Board and the Supervisory Board. Key management personnel compensation is comprised of the following:

	Years ended December 31,		
(in millions)	2022	2021	2020
Management Board	**€15.0**	**€20.4**	**€23.7**
Fixed compensation	2.9	2.2	1.9
Short-term incentive – first installment	0.6	0.6	0.5
Short-term incentive – second installment[1]	0.7	1.2	0.6
Other performance-related variable compensation[2]	0.1	—	—
Share-based payments (incl. long-term incentive)[3]	10.7	16.4	20.7
Supervisory Board	**0.5**	**0.4**	**0.4**
Total compensation paid to key management personnel	**€15.5**	**€20.8**	**€24.1**

(1) The fair value of the second installment of the short-term incentive compensation which has been classified as cash-settled share-based payment arrangement was determined pursuant to the regulations of IFRS 2 "Share-based Payments." This table shows the pro-rata share of personnel expenses for the respective financial year that are recognized over the award's vesting period beginning as of the service commencement date (date when entering or renewing service agreements) until each separate determination date and are remeasured until settlement date.

(2) Includes a one-time signing and retention cash payment agreed when renewing the service agreement agreed with Sean Marett.

(3) The fair value of the share-based payments was determined pursuant to the regulations of IFRS 2 "Share-based Payments." This table shows the pro-rata share of personnel expenses resulting from stock-based compensation for the respective financial year. During the years ended December 31, 2022, and 2021, the amounts included expenses derived from a one-time signing bonus of €800,000 granted to Jens Holstein as of his appointment to the Management Board by awarding 4,246 phantom shares. The phantom shares vest in four equal installments on July 1 of 2022, 2023, 2024, and June 30, 2025 but will only be settled in cash on July 1, 2025. The cash payment is subject to an effective settlement closing price cap. This means that the settlement closing price shall effectively be adjusted to ensure that the current price of an ADS as of the settlement date does not exceed 800% of the closing price applied when the award was initially granted. In addition, the total cash payment under the award shall not exceed €6.4 million. During the year ended December 31, 2020, the amount included expenses from a bonus arrangement agreed with Ryan Richardson in advance of his appointment to the Management Board. During the year ended December 31, 2020, the arrangement was modified from an all-equity share-based payment arrangement into a partly cash- and partly equity-settled share-based payment arrangement including 4,534 ordinary shares which were issued during the year ended December 31, 2021. Management Board members participate in our ESOP program (see Note 16).

During the year ended December 31, 2022, 5,152,410 option rights granted to our Management Board under the ESOP 2018 program vested and became exercisable (option rights allocated to Ryan Richardson and Özlem Türeci had already vested in 2019 but continued to be subject to performance and waiting requirements; Jens Holstein did not participate in the ESOP 2018 program as he had not joined our company at the time it was allocated). Of such vested option rights, 4,921,630 options were exercised during the year ended December 31, 2022 by paying the option exercise price of €19.78 weighted over the Management Board members (for all Management Board members, apart from Ryan Richardson who was not a Management Board member at the time the option rights were allocated, exercise prices are subject the effective exercise price cap and the maximum cap mechanism as described in Note 16.5). As of December 31, 2022, Sean Marett still holds 230,780 option rights which can only be exercised during the exercise

windows as defined by our ESOP and if certain performance conditions are fulfilled as of the date the relevant option rights are exercised. The average closing price of an American Depositary Share of BioNTech on Nasdaq weighted over the Management Board's settlement dates converted from USD to Euro using the exchange rate published by the German Central Bank (Deutsche Bundesbank) on the same days was €160.65.

Key Management Personnel Transactions

A number of key management personnel, or their related parties, hold positions in other companies that result in them having control or significant influence over these companies. A number of these companies have entered into transactions with us during the year.

We purchased various goods and services from Translationale Onkologie an der Universitätsmedizin der Johannes Gutenberg-Universität Mainz gemeinnützige GmbH, or TRON.

The aggregate value of transactions related to key management personnel was as follows for the periods indicated:

	Years ended December 31,		
(in millions)	2022	2021	2020
Purchases of various goods and services from TRON[1]	€—	€—	€10.1
Total	**€—**	**€—**	**€10.1**

(1) We purchased various goods and services from TRON, an institute where Prof. Ugur Sahin, M.D., served as Managing Director. TRON is no longer considered to be a related party for the years ended December 31, 2022, and 2021, as the criteria for such classification are no longer fulfilled.

20.3 Related Party Transactions

The total amount of transactions with ATHOS KG or entities controlled by it was as follows for the periods indicated:

	Years ended December 31,		
(in millions)	2022	2021	2020
Purchases of various goods and services from entities controlled by ATHOS KG	€ 0.3	€ 0.9	€2.3
Purchases of property and other assets from entities controlled by ATHOS KG	62.5	—	2.3
Total	**€62.8**	**€ 0.9**	**€4.6**

On December 22, 2022, we entered into a purchase agreement with Santo Service GmbH, pursuant to which we acquired the real estate property An der Goldgrube 12 and the existing laboratory and office building including any movable assets for a total consideration of €62.5 million. The purchase price was paid during the year ended December 31, 2022. Santo Service GmbH is wholly owned by AT Impf GmbH, that is controlled by ATHOS KG.

The outstanding balances of transactions with ATHOS KG or entities controlled by them were as follows as of the periods indicated:

(in millions)	December 31, 2022	December 31, 2021
ATHOS KG	€ —	€ 0.3
Total	**€ —**	**€ 0.3**

None of the balances are secured and no bad debt expense has been recognized in respect of amounts owed by related parties.

22 Number of employees

The average number of employees is:

Quarterly average number of employees by function	Years ended December 31, 2022	2021	2020
Clinical Research & Development	243	137	113
Scientific Research & Development	1.302	875	586
Operations	1.240	863	490
Quality	383	322	184
Support Functions	828	431	218
Commercial & Business Development	108	66	33
Total	**4.104**	**2.694**	**1.624**

The number of employees as of the balance sheet date is:

Number of employees by function as of the reporting date	Years ended December 31, 2022	2021	2020
Clinical Research & Development	274	153	128
Scientific Research & Development	1.512	1.026	661
Operations	1.365	1.036	699
Quality	413	301	234
Support Functions	983	539	276
Commercial & Business Development	145	83	49
Total	**4.692**	**3.138**	**2.047**

23 Fees for Auditors

The following fees were recognized for the services provided by Ernst & Young GmbH Wirtschaftsprüfungsgesellschaft for the fiscal years ended December 31, 2022 and December 31, 2021:

(in millions)	Years ended December 31, 2022	2021
Audit fees	€2.9	€ 1.9
Audit-related fees	0.4	0.7
Tax fees	0.2	0.5
All other fees	0.2	0.1
Total fees for professional audit services and other services	**€3.7**	**€ 3.2**

23 Corporate Governance

The declaration of conformity pursuant to Section 161 para. 1 of the German Stock Corporation Act (*Aktiengesetz*) is issued in accordance with the Corporate Governance Code in connection with the corporate governance declaration pursuant to Section 315d in conjunction with Section 289f HGB and can be found in the combined management report of BioNTech SE.

24 Events After the Reporting Period

Acquisition of InstaDeep Ltd.

On January 10, 2023, we and InstaDeep Ltd., or InstaDeep, a leading global technology company in the field of artificial intelligence (“AI”) and machine learning (“ML”), announced that we have entered a share purchase agreement, or SPA, under which we will acquire 100% of the remaining shares in InstaDeep, excluding the shares already owned by us (see Note 12.2). InstaDeep will operate as our UK-based global subsidiary and will continue to provide its services to clients around the world in diverse industries, including in the Technology, Transport & Logistics, Industrial and Financial Services sectors. Additionally, the acquisition is planned to enable the creation of a fully integrated, enterprise-wide capability that leverages AI and machine learning technologies across our therapeutic platforms and operations.

The completion of the acquisition is conditional on the satisfaction of several customary closing conditions and regulatory approvals as defined in the SPA. The acquisition of InstaDeep is expected to close in the first half of 2023 and will be accounted for as a business combination using the acquisition method of accounting.

The transaction includes a total upfront consideration of approximately £362 million (€413.4 million) in cash and our shares to acquire 100% of the remaining InstaDeep shares. Therefore, the final upfront consideration at the closing date will depend e.g., on the final proportion of cash payments and shares and on the development of our share price. In addition, InstaDeep shareholders will be eligible to receive additional performance-based future milestone payments up to approximately £200 million (€228.4 million, both amounts in British pound translated into Euro, using the foreign exchange rate as published by the German Central Bank (*Deutsche Bundesbank*) as of March 20, 2023).

Strategic collaboration with OncoC4, Inc.

On March 20, 2023, we and OncoC4, Inc., or OncoC4, a clinical-stage biopharmaceutical company dedicated to the discovery and development of novel biologicals for cancer treatment, announced a strategic collaboration to co-develop and commercialize novel checkpoint antibody for the treatment of cancer. Under the terms of the agreement, we receive an exclusive worldwide license for development and commercialization of OncoC4's anti-CTLA-4 monoclonal antibody candidate, ONC-392. OncoC4 will receive a $200 million (€186.6 million, the amount in U.S. dollar is translated into Euro using the foreign exchange rate as published by the German Central Bank (*Deutsche Bundesbank*) as of March 20, 2023) upfront payment and is eligible to receive development, regulatory and commercial milestone payments as well as tiered royalties. Together with OncoC4 we will jointly develop ONC-392 as monotherapy and in combination therapy with anti-PD1 in various solid tumor indications and will equally share development costs for such studies. We additionally plan to combine ONC-392 with our proprietary oncology product candidates. The transaction is expected to be closed in the first half of 2023, subject to customary closing conditions and regulatory clearances.

Second Tranche Share Repurchase Program

Between January 1, and up until March 17, 2023, the date when the trading plan for the second tranche of our share repurchase program expired, the following repurchases under the program have occurred:

Second Tranche ($0.5 billion)

Period	Number of ADSs purchased	Average price paid per ADS	Total number of ADSs purchased	Approximate value of ADSs that may yet be purchased (in millions)
December 2022[1]	—	$ — (€—)	—	$ 500.0 (€500.0)
January 2023	618,355	$142.26 (€131.12)	618,355	$ 412.0 (€418.9)
February 2023	857,620	$138.05 (€129.06)	1,475,975	$ 293.6 (€308.2)
March 2023[2]	745,196	$128.49 (€121.08)	2,221,171	$ 197.9 (€218.0)
Total	**2,221,171**			

(1) Beginning December 7, 2022.
(2) Ending March 17, 2023.

New share buyback program

On March 27, 2023, it was decided to launch a new share repurchase program under which we may purchase ADSs, each representing one ordinary share, with a value of up to $0.5 billion for the period until the end of 2023.

Mainz, March 27, 2023

BioNTech SE

Prof. Dr. med. Ugur Sahin
Chief Executive Officer

Jens Holstein
Chief Financial Officer

Sean Marett
Chief Business Officer und Chief Commercial Officer

Dr. Sierk Poetting
Chief Operating Officer

Ryan Richardson
Chief Strategy Officer

Prof. Dr. med. Özlem Türeci
Chief Medical Officer

The following English language translation of the German language independent auditor's report (Bestätigungsvermerk des unabhängigen Abschlussprüfers) refers to the consolidated financial statements, prepared in accordance with International Financial Reporting Standards as adopted by the EU, and the additional requirements of German commercial law pursuant to Sec. 315e (3) in conjunction with (1) HGB ("Handelsgesetzbuch": German Commercial Code), as well as the group management report, which is combined with the management report of the Company (combined management report), prepared on the basis of German commercial law (HGB), of BioNTech SE, Mainz, as of and for the year ended December 31, 2022 as a whole and not solely to the consolidated financial statements presented in this Prospectus on the preceding pages. The group management report is not part of this Prospectus.

Independent Auditor's Report

To BioNTech SE

Opinions

We have audited the consolidated financial statements of BioNTech SE, Mainz, and its subsidiaries (the Group), which comprise the consolidated balance sheet as at 31 December 2022, and the consolidated income statement, consolidated statement of other comprehensive income, consolidated statement of changes in equity and consolidated statement of cash flows for the fiscal year from 1 January to 31 December 2022, and notes to the financial statements, including a summary of significant accounting policies. In addition, we have audited the combined group management report of BioNTech SE for the fiscal year from 1 January to 31 December 2022. In accordance with the German legal requirements, we have not audited the group statement on Group corporate governance declaration pursuant to Secs. 315d HGB ["Handelsgesetzbuch": German Commercial Code] in section 5 of the combined group management report. In addition, we have not audited the content of the non-management report disclosures contained in sections 4.2.2 and 4.2.4 based on recommendation A.5 of the German Corporate Governance Code (GCGC 2022) and the non-financial report contained in section 7 of the combined group management report, which contains non-management report disclosures.

In our opinion, on the basis of the knowledge obtained in the audit,

- the accompanying consolidated financial statements comply, in all material respects, with the IFRSs as adopted by the EU, and the additional requirements of German commercial law pursuant to Sec. 315e (3) in conjunction with (1) HGB and, in compliance with these requirements, give a true and fair view of the assets, liabilities and financial position of the Group as at 31 December 2022 and of its financial performance for the fiscal year from 1 January to 31 December 2022, and
- the accompanying group management report as a whole provides an appropriate view of the Group's position. In all material respects, this group management report is consistent with the consolidated financial statements, complies with German legal requirements and appropriately presents the opportunities and risks of future development. We do not express an opinion on the content of the statement on corporate governance or on the sections 4.2.2, 4.2.4 and 7 of the combined management report referred to above.

Pursuant to Sec. 322 (3) Sentence 1 HGB, we declare that our audit has not led to any reservations relating to the legal compliance of the consolidated financial statements and of the group management report.

Basis for the opinions

We conducted our audit of the consolidated financial statements and of the group management report in accordance with Sec. 317 HGB and in compliance with German Generally Accepted Standards for Financial Statement Audits promulgated by the Institut der Wirtschaftsprüfer [Institute of Public Auditors in Germany] (IDW). Our responsibilities under those requirements and principles are further described in the "Auditor's responsibilities for the audit of the consolidated financial statements and of the group management report" section of our auditor's report. We are

independent of the Group entities in accordance with the requirements of German commercial and professional law, and we have fulfilled our other German professional responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinions on the consolidated financial statements and on the group management report.

Other information

The Supervisory Board is responsible for the report of the Supervisory Board in the "Report of the Supervisory Board" section. The executive directors and the Supervisory Board are responsible for the declaration pursuant to Sec. 161 AktG ["Aktiengesetz": German Stock Corporation Act] on the German Corporate Governance Code, which is part of the Group corporate governance declaration. In all other respects, the executive directors are responsible for the other information. The other information comprises the aforementioned corporate governance declaration and the sections 4.2.2, 4.2.4 and 7 of the Group management report. The other information also comprises parts to be included in the annual report, of which we received a version prior to issuing this auditor's report, in particular:

- Non-financial report,
- Report of the Supervisory Board,
- Remuneration report,

but not the consolidated financial statements, not the management report disclosures whose content is audited and not our auditor's report thereon.

Furthermore, the other information includes other components intended for the annual report which are expected to be made available to us after the audit opinion has been issued, in particular:

- the letter from the Executive Board to the shareholders,
- the multi-year overview of business development.

Our opinions on the consolidated financial statements and on the combined group management report do not cover the other information, and consequently we do not express an opinion or any other form of assurance conclusion thereon.

In connection with our audit, our responsibility is to read the other information and, in so doing, to consider whether the other information

- is materially inconsistent with the consolidated financial statements, with the group management report or our knowledge obtained in the audit, or
- otherwise appears to be materially misstated.

If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report in this regard.

Responsibilities of the executive directors and the supervisory board for the consolidated financial statements and the group management report

The executive directors are responsible for the preparation of the consolidated financial statements that comply, in all material respects, with IFRSs as adopted by the EU and the additional requirements of German commercial law pursuant to Sec 315e (3) in conjunction with (1) HGB and that the consolidated financial statements, in compliance with these requirements, give a true and fair view of the assets, liabilities, financial position and financial performance of the Group. In addition, the executive directors are responsible for such internal control as they have determined necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud (i.e., fraudulent financial reporting and misappropriation of assets) or error.

In preparing the consolidated financial statements, the executive directors are responsible for assessing the Group's ability to continue as a going concern. They also have the responsibility for disclosing, as applicable, matters related to going concern. In addition, they are responsible for financial reporting based on the going concern basis of accounting, unless there is an intention to liquidate the Group or to cease operations, or there is no realistic alternative but to do so.

Furthermore, the executive directors are responsible for the preparation of the group management report that, as a whole, provides an appropriate view of the Group's position and is, in all material respects, consistent with the consolidated financial statements, complies with German legal requirements and appropriately presents the opportunities and risks of future development. In addition, the executive directors are responsible for such arrangements and measures (systems) as they have considered necessary to enable the preparation of a group management report that is in accordance with the applicable German legal requirements, and to be able to provide sufficient appropriate evidence for the assertions in the group management report.

The supervisory board is responsible for overseeing the Group's financial reporting process for the preparation of the consolidated financial statements and of the group management report.

Auditor's responsibilities for the audit of the consolidated financial statements and of the group management report

Our objectives are to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and whether the group management report as a whole provides an appropriate view of the Group's position and, in all material respects, is consistent with the consolidated financial statements and the knowledge obtained in the audit, complies with the German legal requirements and appropriately presents the opportunities and risks of future development, as well as to issue an auditor's report that includes our opinions on the consolidated financial statements and on the group management report.

Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with Sec. 317 HGB and in compliance with German Generally Accepted Standards for Financial Statement Audits promulgated by the Institut der Wirtschaftsprüfer (IDW) will always detect a material misstatement. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated financial statements and this group management report.

We exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the consolidated financial statements and of the group management report, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinions. The risk of not detecting a material misstatement resulting from fraud is higher than the risk of not detecting a material misstatement resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit of the consolidated financial statements and of arrangements and measures (systems) relevant to the audit of the group management report in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of these systems.
- Evaluate the appropriateness of accounting policies used by the executive directors and the reasonableness of estimates made by the executive directors and related disclosures.
- Conclude on the appropriateness of the executive directors' use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in the auditor's report to the related disclosures in the consolidated financial statements and in the group management report or, if such disclosures are inadequate, to modify our respective opinions. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Group to cease to be able to continue as a going concern.

- Evaluate the overall presentation, structure and content of the consolidated financial statements, including the disclosures, and whether the consolidated financial statements present the underlying transactions and events in a manner that the consolidated financial statements give a true and fair view of the assets, liabilities, financial position and financial performance of the Group in compliance with IFRSs as adopted by the EU and the additional requirements of German commercial law pursuant to Sec. 315e (3) in conjunction with (1) HGB.
- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express opinions on the consolidated financial statements and on the group management report. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our opinions.
- Evaluate the consistency of the group management report with the consolidated financial statements, its conformity with law, and the view of the Group's position it provides.
- Perform audit procedures on the prospective information presented by the executive directors in the group management report. On the basis of sufficient appropriate audit evidence we evaluate, in particular, the significant assumptions used by the executive directors as a basis for the prospective information, and evaluate the proper derivation of the prospective information from these assumptions. We do not express a separate opinion on the prospective information and on the assumptions used as a basis. There is a substantial unavoidable risk that future events will differ materially from the prospective information.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

Cologne, March 28, 2023

Ernst & Young GmbH
Wirtschaftsprüfungsgesellschaft

Zwirner	Weigel
Wirtschaftsprüfer [German Public Auditor]	Wirtschaftsprüfer [German Public Auditor]

Audited Annual Financial Statements of BioNTech SE prepared in accordance with German generally accepted accounting principles of the German Commercial Code (*Handelsgesetzbuch*) as of and for the Year Ended December 31, 2024

BioNTech SE, Mainz

Balance Sheet as of December 31, 2024

Assets	*in millions €*	December 31, 2024 *in millions €*	December 31, 2023 *in millions €*
A. Fixed assets			
I. Intangible assets			
1. Purchased franchises, industrial and similar rights and assets, and licenses in such rights and assets	521.0		650.8
2. Goodwill	2.1		2.3
3. Advanced payments	20.5		21.5
		543.6	**674.6**
II. Property, plant and equipment			
1. Land, land rights and buildings, including buildings on third-party land	45.2		42.0
2. Other equipment, furniture and fixtures	63.2		52.4
3. Advanced payments and construction in progress	61.4		42.1
		169.8	**136.5**
III. Financial assets			
1. Shares in affiliated companies	1,149.0		1,156.5
2. Loans to affiliated companies	—		8.5
3. Equity investments	96.8		47.0
4. Securities classified as fixed assets	2,443.2		1,326.4
5. Other loans	39.7		2.6
		3,728.7	**2,541.0**
		4,442.1	**3,352.1**
B. Current assets			
I. Inventories			
1. Raw materials and supplies	1.0		1.1
2. Advanced payments	0.1		0.1
		1.1	1.2
II. Receivables and other assets			
1. Trade receivables	1,105.2		1,163.6
2. Receivables from affiliated companies	1,767.9		1,370.5
3. Other assets	656.1		279.8
		3,529.2	**2,813.9**
III. Other securities		**5,104.6**	**4,662.6**
IV. Cash on hand and at banks		**9,338.9**	**11,409.5**
		17,973.8	**18,887.2**
C. Prepaid expenses		**163.7**	**216.3**
D. Net Defined Benefit Asset		**2.2**	**1.8**
		18,139.7	**19,105.3**
		22,581.8	**22,457.4**

Equity and liabilities	*in millions €*	December 31, 2024 *in millions €*	December 31, 2023 *in millions €*
A. Equity			
I. Share capital		248.6	248.6
Treasury shares		(8.6)	(10.8)
Issued (share) capital		240.0	237.8
Conditional capital: €37.3 million (previous year: €85.8 million)			
II. Capital reserve		**778.7**	**695.6**
III. Retained earnings		**9,845.1**	**9,845.1**
IV. Accumulated profit		**8,232.5**	**9,361.0**
		19,096.3	**20,139.5**
B. Provisions			
1. Tax provisions	1.2		525.1
2. Other provisions	431.5		571.7
		432.7	**1,096.8**
C. Liabilities			
1. Trade payables	343.0		254.2
2. Liabilities to affiliated companies	1,256.3		485.8
3. Other liabilities	1,193.5		93.4
thereof for taxes: €28.6 million (previous year: €18.1 million)			
thereof for social security: €0.2 million (previous year: €1.6 million)			
		2,792.8	**833.4**
D. Deferred income		**260.0**	**387.7**
		22,581.8	**22,457.4**

BioNTech SE, Mainz

Income Statement for the Period from January 1, 2024, to December 31, 2024

		Years ended December 31,	
		2024	2023
	in millions €	*in millions €*	*in millions €*
1. Revenues	2,224.4		3,270.1
2. Cost of sales	(218.2)		(250.0)
3. Gross profit		2,006.2	3,020.1
4. Research and development expenses	(2,396.8)		(1,743.6)
5. Sales expenses	(62.0)		(29.4)
6. General and administrative expenses	(746.8)		(535.1)
7. Other operating income	796.4		299.5
thereof income from currency translation: €155.9 million (previous year: nil)			
8. Other operating expenses	(1,416.9)		(315.6)
thereof expenses from currency translation: €65.8 million (previous year: €284.6 million)			
		(3,826.1)	**(2,324.2)**
9. Income from profit transfer	309.5		184.6
thereof from affiliated companies: expenses of €309.5 million (previous year: €184.6 million)			
10. Other interest and similar income	641.4		366.7
thereof from affiliated companies: €60.6 million (previous year: €40.0 million)			
11. Income from other securities and loans classified as fixed financial assets	53.8		29.7
12. Impairments of financial assets and securities classified as current assets	(190.9)		—
13. Expenses from loss transfer	(111.5)		(166.2)
14. Interest and similar expenses	(17.6)		(78.0)
thereof to affiliated companies: €14.9 million (previous year: €74.4 million)			
		684.7	**336.8**
15. Income taxes		6.7	(233.2)
16. Profit / (Loss) after tax		(1,128.5)	799.5
17. Net income / (loss)		**(1,128.5)**	**799.5**
18. Profit carryforward from the previous year		**9,361.0**	**8,961.2**
19. Allocations to retained earnings		—	(399.7)
20. Accumulated profit		**8,232.5**	**9,361.0**

Notes to the Annual Financial Statements

1 General Notes on the Annual Financial Statements

The annual financial statements of BioNTech SE, hereinafter also referred to as the "Company," "BioNTech," "we" or "us," for the period from January 1 to December 31, 2024, have been prepared in accordance with the provisions of the German Commercial Code (HGB) and the German Stock Corporation Act (AktG).

BioNTech SE is a European limited liability company incorporated and domiciled in Germany and is registered in the commercial register B of the Mainz Local Court under the number HRB 48720. American Depositary Shares (ADSs) representing BioNTech SE's ordinary shares have been publicly traded on the Nasdaq Global Select Market since October 10, 2019. The registered office is located in Mainz, Germany (An der Goldgrube 12, 55131 Mainz).

The Mainz-based Company is a large corporation as defined by Section 267 para. 3 HGB. Thus the Company is subject to the requirements for large corporations.

The accompanying annual financial statements have been prepared on a going concern basis and in accordance with Section 242 et seq. and Section 264 et seq. HGB as well as in accordance with the relevant provisions of the AktG.

The annual financial statements are published in euros. Unless otherwise stated, the numbers are rounded to millions or thousands of euros. Accordingly, numerical figures shown as totals in some tables may not be exact arithmetic aggregations of the figures that preceded them and figures presented in the explanatory notes may not add up to the rounded arithmetic aggregations. Rounding applied may differ from rounding published in different units in the previous years.

The income statement has been prepared using the cost of sales method in accordance with Section 275 para. 3 HGB.

2 Notes on Accounting Policies

The following accounting policies were used to prepare the annual financial statements.

Purchased intangible assets with finite useful lives are recognized at cost and amortized on a straight-line basis over their estimated useful lives. If impairment is expected to be permanent, an impairment loss is recognized to reduce the value to the lower net realizable value.

Purchased goodwill is amortized over its estimated useful life of 15 years, reflecting the period over which purchased goodwill will create a benefit.

Depreciable items of property, plant and equipment are valued at acquisition cost less accumulated depreciation. Depreciation is charged on a straight-line basis over the expected useful life. Advanced payments and construction in progress are valued at acquisition or production cost. Borrowing costs are not included in production cost. If impairment is expected to be permanent, an impairment loss is recognized to reduce the value to the lower net realizable value.

Low-value assets of up to €800 are fully expensed in the year of acquisition.

With regard to financial assets, shares in affiliated companies, equity investments and securities classified as fixed assets are recognized at acquisition cost, while loans are recognized at nominal value or – if permanent impairment is expected – at the lower net realizable value. Contingent consideration is only recognized as an increase in the carrying amount of the investment upon satisfaction of the respective condition.

Raw materials and supplies are recognized at the lower of acquisition cost or net realizable value.

Receivables and other assets are stated at nominal value. Securities classified as current assets are recognized at acquisition cost. Appropriate specific and general bad debt allowances provide for all foreseeable valuation risks.

Cash and cash equivalents are stated at nominal value. Money market funds reported under cash on hand are valued at the lower of nominal value or quoted or market value on the reporting date and may only have a term of less than three months at the acquisition date.

Expenses recorded before the reporting date which relate to a certain period after this date are posted under prepaid expenses.

When accounting for share-based payment awards, we distinguish between cash-settled and equity-settled transactions. For both instruments, the fair value is measured at grant date and then spread evenly as remuneration expense over the period in which the employees earn an unconditional entitlement to the instruments. Cash-settled awards are remeasured at fair value at each reporting date until the award is settled. For equity-settled transactions, the recognition of expenses leads to an increase in the capital reserve, whereas expenses recognized for cash-settled transactions give rise to a liability. If the Company can choose whether to settle the awards either in cash or by providing equity instruments, we account for them as equity-settled transactions, unless there is a present obligation to settle in cash or the transaction is settled in cash. Whenever we decide to settle in cash or there is a present obligation to settle in cash, any difference between the amount (to be) paid in cash and the fair value at grant date is recognized as an additional expense. In accordance with international accounting rules for share-based payment transactions between group companies, we do not only account for share-based payments to employees of BioNTech SE but also for commitments to employees of subsidiaries that are fulfilled by BioNTech SE. When these beneficiaries are not employees of BioNTech SE, the expenses are recognized in other operating expenses.

Treasury shares are deducted from share capital on the face of the balance sheet at their nominal value. The difference between the nominal value and the acquisition cost of the acquired shares is offset against the capital reserve. Expenses from the acquisition of treasury shares are recognized in expenses in the current financial year.

Tax provisions and other provisions account for all identifiable risks, uncertain liabilities and onerous contracts. They are valued at the settlement value deemed necessary according to prudent business judgment. Future price and cost increases are factored in. Other provisions with residual terms of more than one year were discounted at the average interest rates of the last seven years for their respective residual term.

The assets which serve exclusively to fulfill the long-term obligations to employees from long-term accounts and which are protected against claims asserted by all other creditors (covering assets as defined by Section 246 para. 2 sentence 2 HGB) are measured at their fair value and offset against the related liabilities. The related expenses and income from discounting and from the assets to be offset are also offset.

Foreign exchange forward contracts are not recognized as hedges pursuant to Section 254 HGB. The foreign exchange forward contracts are valued using valuation techniques which employ the use of foreign exchange spot and forward rates. Contracts with a negative value as of the reporting date are accounted for under other provisions in the balance sheet.

Liabilities are recognized at the settlement value.

Advanced payments received in connection with research and development collaborations are recognized as deferred income and released to profit or loss over the term of the contract.

If there are differences between the carrying amounts of assets, liabilities, prepaid expenses and deferred income in the statutory accounts and their tax base which are expected to reverse in future financial years, any resulting net tax charge is recognized as a deferred tax liability in the balance sheet. Any resulting net tax benefit may be recognized as a deferred tax asset. Tax loss carryforwards are taken into account in the calculation of deferred tax assets to the extent that they are expected to be offset within the next five years. The resulting tax charge and benefit amounts are determined using the company-specific tax rates at the time the differences reverse and are not discounted. Deferred tax assets are offset against deferred tax liabilities and the option to recognize net deferred tax assets in excess of deferred tax liabilities was not exercised. Differences between the carrying amounts of assets, liabilities and prepaid expenses and deferred income in the statutory accounts and the tax bases of tax group subsidiaries are included to the extent that BioNTech SE expects future tax charges and benefits from the reversal of temporary or quasi-permanent differences.

Assets and liabilities denominated in foreign currencies are translated using the mean spot rate of exchange on the reporting date. If they have residual terms of more than one year, the realization principle (Section 252 para. 1 no. 4 clause 2 HGB) and the historical cost principle (Section 253 para. 1 sentence 1 HGB) are applied.

The “thereof” items presented in the income statement include both realized and unrealized currency translation differences.

Revenues from the sale of goods are recognized when the significant opportunities and risks of ownership have been transferred to the buyer and the amount of revenues to be recognized can be measured reliably. Revenues from services are recognized when the service is rendered. No revenue is recognized when there are significant risks involving the receipt of the consideration or the possible return of goods. All other revenues are recognized net of sales deductions such as bonuses, discounts or rebates.

For our COVID-19 collaborations, revenues are recognized on the basis of our collaboration partners’ gross profit from COVID-19 vaccine sales generated in territories allocated to these partners based on marketing and distribution rights. Our territory comprises Germany and Turkey. In determining the revenues pursuant to these collaboration agreements, we are reliant on our collaboration partners for details and, to a certain extent, on estimates. As a result, the revenues pursuant to these collaboration agreements are subject to the risk that the amounts reported might differ from the actual amounts until our collaboration partners’ final results are available.

Government grants are recognized where there is reasonable assurance that the grant will be received and all attached conditions will be complied with. When the grant relates to an expense item, it is recognized as income on a systematic basis over the periods that the related costs for which the grant is intended to compensate are expensed. Any prepayments are recognized as deferred income. As the costs in the case of grants for research and development projects are not usually incurred over time, prepayments from grants related to an expense item are recognized as other liabilities in the balance sheet. When the grant relates to an asset, it is recognized as deferred income within the balance sheet. Other operating income is subsequently recognized in profit or loss over the useful life of the underlying asset subject to funding.

Research and development expenses are expensed as incurred.

Based on the Organisation for Economic Co-operation and Development (OECD) Base Erosion and Profit Shifting (BEPS) project to tackle tax avoidance, the OECD/G20 Inclusive Framework (an association of about 140 countries) decided to introduce a global minimum taxation for large companies and multinational groups (known as Pillar 2). The Global Anti-Base Erosion Rules are intended to ensure that large multinational groups pay a minimum level of tax on the income arising in each jurisdiction where they operate. In December 2021, the OECD published its OECD Model Rules, which serve as a draft bill for implementation into national domestic law, followed by guidelines and commentaries published in March 2022. In December 2022, the EU adopted a corresponding directive (EU 2022/2523) that obliges EU member states to transpose the rules into national domestic law. If the effective tax rate in any jurisdiction is below the minimum rate (15%), the Group may be subject to the top-up tax or a qualified domestic minimum top-up tax.

Several jurisdictions in which the Group operates have transposed the global minimum taxation rules into national domestic law. In addition, the Group is closely following the progress of the legislative process in each country in which the Group operates. As of the reporting date, the BEPS Pillar 2 regulations (MinBestRL UmsG) had already been transposed into German law (MinStG). In accordance with the regulations that have entered into force in Germany, the Group is obliged to file top-up tax information returns for affected entities, beginning in the 2024 financial year. The Group falls within the scope of these regulations. The Group carried out an analysis as of the reporting date to determine the fundamental impact and the jurisdictions in which the Group is exposed to possible effects in connection with a minimum tax.

Based on this analysis, no countries were identified in which the Group is materially affected by a minimum tax. Consequently, the average effective tax rate did not change materially as a result of the minimum tax rate coming into force from December 30, 2023. BioNTech applies the exception in Section 274 para. 3 HGB, according to which no deferred tax assets and liabilities in connection with the income taxes of the second pillar of the OECD are recognized and no disclosures are made.

3 Notes to the Balance Sheet and Income Statement

3.1 Intangible Assets and Property, Plant and Equipment

The development of the individual fixed asset items, including amortization, depreciation and impairment for the financial year, is shown in the statements of changes in fixed assets. The statements of changes in fixed assets are attached to these notes.

In the 2024 financial year, there were additions of €137.0 million (previous year: €651.8 million) to purchased franchises, industrial and similar rights and assets, and licenses in such rights and assets. They mainly include additions from the acquisition of licenses under license and collaboration agreements in the amount of €97.0 million (previous year: €443.5 million).

The additions to intangible assets under license and collaboration agreements resulted from payments made for the acquisition of licenses (of which €41.4 million from Duality Biologics (Suzhou) Co. Ltd, Shanghai, China, €28.1 million from OncoC4 Inc., Rockville, USA, and €27.5 million from Biotheus Inc., Zhuhai, China). The additions in the previous year also resulted from payments made for the acquisition of licenses (including €203.7 million from Duality Biologics (Suzhou) Co. Ltd, Shanghai, China, €125.2 million from OncoC4 Inc, Rockville, USA, €64.1 million from MediLink Therapeutics (Suzhou) Co. Ltd, Suzhou, China, and €50.6 million from Biotheus Inc, Zhuhai, China).

With regard to intangible assets, impairment losses of €160.0 million were recognized during the year ended December 31, 2024, as the impairment is expected to be permanent (previous year: nil).

Fixed assets are amortized/depreciated on a straight-line basis over the following terms:

Amortization/depreciation period by type of	Useful life (years)
Intangible assets	
Patents, industrial rights	8 -20
Licenses	3 -10
Goodwill	15
Software	3 - 8
Property, plant and equipment	
Buildings	10 -33
IT systems	3 - 5
IT hardware	1
Machines/production equipment	8 - 10
Laboratory equipment	3 - 5
Office fixtures and fittings	5 - 10

3.2 Financial Assets

in millions €	As of January 1, 2024	Additions	Disposals	Impairments/ Write-ups	As of December 31, 2024
1. Shares in affiliated companies	1,156.5	41.1	—	48.6	1149
2. Loans to affiliated companies	8.5	—	8.5	—	—
3. Equity investments	47.0	188.9	—	139.1	96.8
4. Securities classified as fixed assets	1,326.4	1,341.6	224.4	0.4	2,443.2
5. Other loans	2.6	38.0	0.9	—	39.7
Total	**2,541.0**	**1,609.6**	**233.8**	**188.1**	**3,728.7**

During the year ended December 31, 2024, there were additions to shares in affiliated companies in the amount of €41.1 million (previous year: €543.1 million), which was attributable to capital increases. Impairments relating to shares in affiliated companies amounted to €48.6 million (previous year: nil). An impairment loss of the fair value was not recognized for one equity investment (carrying amount €23.3 million, fair value €17.3 million), as we came to the conclusion that the impairment is not to be classified as permanent, taking into account the development of the stock market price in the period preceding the balance sheet date. The shares in InstaDeep Ltd. (€493.3million, previous year €490.1 million) and BioNTech USA Holding LLC., Cambridge, USA, (€399.7 million, same as previous year) accounted for the bulk of the total shares in affiliated companies of €1,149.0 million.

During the year ended December 31, 2024, a loan with a subsidiary was rolled over and newly concluded with a term of less than one year. The disposal of loans to affiliated companies amounted to €8.5 million (previous year: €588.9 million). New contracts with a term of less than one year are reported as short-term receivables from affiliated companies.

During the year ended December 31, 2024, there were additions to equity investments in the amount of €188.9 million (previous year: nil) and impairment losses of €139.1 million (previous year: €19.7 million), mainly due to the development of the share price in the previous period.

During the year ended December 31, 2024, we continued to make long-term investments in various securities. Additions exceeded repayments, which explains why the final value amounted to €2,443.2 million.

As of the balance sheet date, other loans amounted to €39.7 million and mainly resulted from a claim to future license payments.

Information is provided on the following companies in accordance with Section 285 no. 11 HGB:

Name / registered office		Share-holding	Net income/ net loss for the year (in millions €)[1]	Equity (in millions €)[1]
BioNTech BioNTainer Holding GmbH, Mainz	(2)	100%	2.9	83.7
BioNTech Cell & Gene Therapies GmbH, Mainz	(2)	100%	0.4	8.7
BioNTech Collaborations GmbH, Mainz	(2),(3)	100%	—	—
BioNTech Delivery Technologies GmbH, Halle	(2)	100%	—	0.6
BioNTech Diagnostics GmbH, Mainz	(2)	100%	—	5.5
BioNTech Europe GmbH, Mainz	(2)	100%	7.4	14.2
BioNTech Idar-Oberstein Services GmbH, Idar-Oberstein	(2)	100%	—	0.2
BioNTech Individualized mRNA Manufacturing GmbH, Mainz	(2)	100%	—	—
BioNTech Innovation and Services Marburg GmbH, Marburg	(2)	100%	(0.4)	—
BioNTech Innovation GmbH, Mainz	(2)	100%	0.4	0.4
BioNTech Innovative Manufacturing Services GmbH, Idar-Oberstein	(2)	100%	(24.1)	(23.7)
BioNTech Manufacturing GmbH, Mainz	(2)	100%	175.7	203.4
BioNTech Manufacturing Marburg GmbH, Marburg	(2)	100%	30.3	(12.9)
BioNTech Real Estate Holding GmbH, Holzkirchen	(2)	100%	0.2	0.1
InstaDeep DE GmbH, Berlin		100%	0.1	0.2
JPT Peptide Technologies GmbH, Berlin	(2)	100%	0.1	13.4
NT Security and Services GmbH, Mainz	(2)	100%	—	—
reSano GmbH, Mainz	(2)	100%	—	(1.3)
BioNTech Australia Pty Ltd, Melbourne, Australien		100%	(1.9)	(2.9)
BioNTech R&D (Austria) GmbH, Wien, Österreich		100%	2.7	24.1
BioNTech (Shanghai) Pharmaceuticals Co. Ltd., Shanghai, China		100%	(2.3)	5.6
InstaDeep France SAS, Paris, France		100%	1.5	3.5
Biopharma BioNTech Israel Ltd., Israel		100%	(0.6)	(0.8)
New Technologies Re, Luxemburg, Luxemburg		100%	2.4	18.1
InstaDeep Nigeria Ltd., Lagos, Nigeria		100%	—	—
BioNTech Rwanda Ltd., Kigali, Ruanda		100%	(6.2)	61.6
BioNTech Pharmaceuticals Asia Pacific Pte. Ltd., Singapur		100%	(66.6)	(46.4)
BioNTech Pharmaceuticals Spain S.L, Barcelona, Spanien		100%	0.1	0.5
BioNTech Switzerland GmbH, Basel, Schweiz		100%	0.2	1.1
BioNTech Taiwan Co. Ltd., Taipeh, Taiwan		100%	(0.2)	—
InstadDeep Tunisia SARL, Tunis, Tunesia		100%	0.3	1.1
BioNTech Turkey Tıbbi Ürünler Ve Klinik Araştirma Ticaret Anonim Şirketi, Istanbul, Türkei		100%	0.6	1.1
BioNTech UK Ltd., London, Großbritannien		100%	4.4	3.4
InstaDeep Ltd., London, Großbritannien		100%	—	71.1
BioNTech Research and Development, Inc., Cambridge, USA		100%	5.1	106.1
BioNTech USA Holding LLC., Cambridge, USA		100%	(0.2)	428.2
BioNTech US Inc., Cambridge, USA		100%	24.2	235.7
BioNTech Delivery Technologies (US) LLC, Cambridge, USA		100%	—	—
InstaDeep LLC., Dover, USA		100%	0.4	0.6
JPT Peptide Technologies Inc., Cambridge, USA		100%	—	1.5
Simba Merger Sub, George Town, Cayman Islands	(3)	100%	—	—
Crescendo Biologics Ltd., Cambridge, Großbritannien	(4)	13.04%	(23.4)	24.3
Ryvu Therapeutics S.A., Krakau, Polen	(4)	8.29%	(20.3)	59.8
Autolus Therapeutics plc. London, Großbritannien	(4)	12.5%	(192.7)	100.9
Sortera Bio Ltd, Cambridge, Großbritannien	(3)	16.6%	—	—

(1) These figures are based on the local IFRS financial statements before consolidation and therefore do not show the company's contribution to the consolidated financial statements. Net income and equity amounts denominated in foreign currencies are translated using the exchange rates published by the German Central Bank (*Deutsche* Bundesbank).

(2) Companies with which domination and profit and loss transfer agreements are in place.
(3) Newly founded in the 2024 financial year.
(4) Net income for the 2023 financial year and equity as of December 31, 2023.

3.3 Receivables, Other Assets and Securities

(in millions €)	December 31, 2024	December 31, 2023
Trade receivables	1,105.2	1,163.6
Receivables from affiliated companies	1,767.9	1,370.5
Other assets	656.1	279.8
Total	**3,529.2**	**2,813.9**

Trade receivables decreased by €58.4 million from €1,163.6 million to €1,105.2 million as of December 31, 2024, and mainly related to the collaboration agreement with Pfizer Inc., New York, United States, as well as our revenues from direct COVID-19 vaccine sales to customers in our territories. The contractual settlement with Pfizer has a temporal offset of more than one calendar quarter. As Pfizer's financial quarter for subsidiaries outside the United States differs from ours, it creates an additional time lag between the recognition of revenues and the payment receipt. As of December 31, 2024, our trade receivables included, in addition to the profit share for the fourth quarter of 2024, trade receivables which related to the gross profit share for the third quarter of 2024. As in the previous year, trade receivables and other assets are due in up to one year.

Receivables from affiliated companies consisted of trade receivables (including cash pool) in the amount of €47.4 million (previous year: €660.9 million) and other receivables in the amount of €1,720.5 million (previous year: €709.6 million), of which €1,340.2 million (previous year: €525 million) comprised short-term loans to affiliated companies and €309.5 million (previous year: €184.6 million) was from profit transfers. Total receivables increased by €397.4 million from €1,370.5 million to €1,767.9 million as at December 31, 2024. This was mainly due to the granting of new loans to the subsidiaries, which resulted in a corresponding level of receivables of €1,340.2 million (previous year: €677.2 million). Receivables from affiliated companies with a remaining term of more than one year amounted to €33.9 million (previous year: €22.9 million) and resulted from the share-based payment commitments for 2021, 2022, and 2023.

Miscellaneous other assets mainly related to advance payments and reimbursement claims against Pfizer in connection with the National Institutes of Health (NIH) and the University of Pennsylvania (UPenn) totaling €514.5 million (previous year: nil).

During the year ended December 31, 2024, we invested in short-term securities. The balance of other securities was €5,104.6 million as of the reporting date (previous year: €4,662.6 million).

3.4 Cash on Hand and at Banks

As of the reporting date, cash and cash equivalents came to €9,338.9 million (previous year: €11,409.5 million) and comprised money market funds, reverse repos, fixed-term deposits and deposits. The decrease compared to the previous year is mainly due to investments in securities, which are reported in the items securities classified as fixed assets and other securities.

3.5 Prepaid Expenses

Prepaid expenses decreased by €52.6 million from €216.3 million in the previous year to €163.7 million. As of the reporting date, the item mainly comprised compensation payments of €83.1 million (previous year: €151.1 million) to our collaboration partner under the amended COVID-19 vaccine purchase agreement with the European Commission for the German market. Prepaid expenses for our collaborations amounted to €26.9 million (previous year: €47.9 million).

3.6 Net Defined Benefit Asset

In the financial year, the covering assets available to offset the long-term obligations to employees from long-term accounts consisted of fixed-term deposits whose acquisition cost amounted to €7.4 million as of December 31, 2024 (previous year: €6.1 million), which corresponds to the fair value (market value on the

reporting date). The assets were offset by a settlement value of the related liabilities of €5.3 million (previous year: €4.3 million). The net defined benefit asset was recognized in the year ended December 31, 2023, under other loans and was disclosed separately in the balance sheet as of December 31, 2024, for both the 2023 and 2024 financial years. There was a positive effect of €1.0 million (previous year: €0.1 million) on the finance result.

3.7 Equity

As of December 31, 2024, our share capital comprised 248,552,200 (previous year: 248,552,200) voting bearer shares, of which 8,581,396 (previous year: 10,826,465) were held as treasury shares. The par value of our shares is €1.00 and each confers one voting right at the Annual General Meeting.

Treasury shares

Treasury shares developed as follows in the 2024 financial year:

(in units)	
As of January 1, 2024	**(10,826,465)**
Settlement of share-based payment transactions	(2,245,069)
As of December 31, 2024	**(8,581,396)**

Capital reserve

The capital reserve developed as follows in the 2024 financial year:

(in millions €)	
As of January 1, 2024	**695.6**
Change due to share-based payment transactions	83.1
As of December 31, 2024	**778.7**

Retained earnings

Retained earnings remained unchanged during the year ended December 31, 2024, and amounted to €9,845.1 million as of December 31, 2024.

Accumulated profit

Accumulated profit includes a profit carryforward of €9,361.0 million.

3.8 Proposal for the Appropriation of Profit or Loss 2024

BioNTech SE's net loss for the year ended December 31, 2024, amounted to €1,128.5 million. The accumulated profits from the past financial year amounting to €8,232.5 million are to be carried forward in full to new account.

3.9 Tax Provisions

As of the reporting date, tax provisions amounted to €1.2 million (previous year: €525.1 million). This mainly includes provisions for trade tax in the amount of €1.0 million (previous year: €239.0 million) for the financial years 2021 to 2023. Compared to the previous year, provisions of €516.9 million were utilized with the 2021 and 2022 assessments for corporate tax, solidarity surcharge, and trade tax. For the year ended December 31, 2024, there is a receivable in the amount of €48.9 million, which mainly includes creditable capital gains tax.

All tax prepayments made for the year ended December 31, 2024, in the amount of €80.6 million have already been refunded.

Overall, there is no actual current tax expense for the year ended December 31, 2024 (previous year: €233.2 million). The reported current tax income of €6.7 million relates to previous years.

3.10 Other Provisions

(in millions €)	December 31, 2024	December 31, 2023
Provisions for outstanding invoices	279.4	418.3
Provisions for contractual disputes	76.8	118.2
Other provisions	75.3	35.2
Total	**431.5**	**571.7**

Provisions for outstanding invoices relate to purchased services that were uncertain as of the reporting date, as was their amount. They mainly included obligations derived from license agreements which are being incurred with respect to our COVID-19 vaccine sales in our and the collaboration partners' territories where we and our partners are using third-party intellectual property.

The provisions for contractual disputes cover such disputes in connection with potential obligations.

Other provisions mainly include personnel provisions for outstanding vacation, overtime, and bonuses in the amount of €38.3 million (previous year: €33.1 million), provisions for impending losses from forward exchange transactions in the amount of €16.3 million (previous year: nil), and impending losses from other pending transactions in the amount of €5.9 million (previous year: nil).

3.11 Liabilities

(in millions €)	December 31, 2024	December 31, 2023
Trade payables	343.0	254.2
Liabilities to affiliated companies	1,256.3	485.8
Other liabilities	1,193.5	93.4
Liabilities from contractual disputes	1,148.0	50.6
Liabilities from wage taxes and social security expenses	28.8	18.1
Other miscellaneous liabilities	16.7	24.7
Total	**2,792.8**	**833.4**

Liabilities to affiliated companies consisted of trade payables in the amount of €208.0 million (previous year: €375.7 million) and current liabilities in the amount of €1,048.3 million (previous year: €110.1 million), mainly for cash pool obligations to subsidiaries and from the transfer of losses as part of profit and loss transfer agreements. Liabilities with a remaining term of more than one year amounted to €3.1 million (previous year: €5.5 million) and resulted from share-based payments for employees.

As of December 31, 2024, other liabilities mainly included payment obligations from contractual disputes with NIH in the amount of €761.9 million and UPenn in the amount of €385.0 million. In addition, payment charges from withholding tax in the amount of €15.6 million and liabilities from wage taxes and social security expenses in connection with obligations that became due with the settlement of our share-based payment programs for the respective employees and Management Board members, as well as grants related to an expense item of €12.8 million.

3.12 Deferred Income

Deferred income mainly includes the compensation payments in connection with the amended COVID-19 vaccine purchase agreement with the European Commission and the deferred upfront fees from collaborations.

3.13 Deferred Tax

Differences between the carrying amounts of assets, liabilities, prepaid expenses and deferred income, deferred tax assets in connection with our Employee Stock Ownership Plans in the statutory accounts, and deferred taxes from income tax loss carryforwards resulted in net deferred tax assets of €410.0 million (previous year: €162.8 million), which were not recognized. This includes deferred tax assets from tax group companies in the amount of €11.5 million (previous year: €1.8 million).

Deferred taxes were calculated using an overall tax rate of 30.8% for corporate income tax, trade tax and the solidarity surcharge.

3.14 Off-Statement of Financial Position Transactions and Other Financial Obligations

Contingent liabilities relate to potential future events whose occurrence would give rise to an obligation. As of the reporting date, contingent liabilities from guarantees amounted to €676.7 million (previous year: €642.8 million), all of which are entirely in respect of affiliated companies. The risk of claims is considered to be low due to the central management of the subsidiaries, taking into account the Group's good financial position.

Other financial obligations include the following rental and lease obligations:

(in millions €)	Less than 1 year	1 to 5 years	More than 5 years	Total
Rental agreements	18.8	53.3	18.1	90.2

Rental and lease agreements offer the benefit of optimizing liquidity. There are no identifiable significant risks.

There are also other financial obligations in connection with the purchase of property, plant and equipment and intangible assets:

(in millions €)	Less than 1 year	1 to 5 years	More than 5 years	Total
Commitments under purchase agreements for property, plant and equipment	13.1	—	—	13.1
Contractual obligation to acquire intangible assets	168.9	1,047.3	583.3	1,799.5
Total	**182.0**	**1,047.3**	**583.3**	**1,812.6**

The financial obligations in connection with the purchase of intangible assets arise from the license and collaboration agreements concluded and the resulting obligations to make milestone payments to the collaboration partner as well as the contractual obligation under purchase agreements for property, plant and equipment. Provided that all of the contractually agreed milestones are achieved, the Company would be obligated to pay up to €1,812.6 million as of December 31, 2024 (as of December 31, 2023: €1,875.5 million).

3.15 Revenues

	Years ended December 31,	
(in millions €)	2024	2023
Revenues from external customers	2,026.9	3,129.2
Revenues from affiliated companies	197.5	140.9
Total	2,224.4	3,270.1

The external revenues mainly include commercial revenues comprising our gross profit share from our collaboration partners.

From the year ended December 31, 2023, to the year ended December 31, 2024, commercial revenues decreased by €1,102.3 million from €3,129.2 million to €2,026.9 million and included our share of gross profit from sales by our collaboration partners in territories allocated to them based on marketing and distribution rights. The decrease in commercial revenues was due to lower demand for our COVID-19 vaccine.

Revenues from affiliated companies primarily relate to income from the provision of administrative services for the subsidiaries.

In the year ended December 31, 2024, based on the geographical region in which our customers, affiliated companies, and collaboration partners are based, we generated revenue primarily in the United States (€2,212.7 million) in addition to other countries (€11.7 million). In the previous year, the most important geographical region was the United States (€2,993.8 million) alongside other countries (€276.3 million).

3.16 Cost of Sales

From the year ended December 31, 2023, to the year ended December 31, 2024, cost of sales decreased by €31.8 million from €250.0 million to €218.2 million. Cost of sales primarily includes 50% of the gross profit from COVID-19 vaccine sales in territories where we have marketing and distribution rights (e.g. Germany), which our collaboration partner Pfizer receives as a pro rata share. In addition, sales-related licensing costs for third-party intellectual property contribute to the cost of sales.

3.17 Research and Development Expenses

From the year ended December 31, 2023, to the year ended December 31, 2024, research and development expenses increased by €653.2 million from €1,743.6 million to €2,396.8 million, mainly due to progressing clinical studies for our pipeline candidates as well as our newly acquired product candidates and the development of variant-adapted COVID-19 vaccines. The increase was further driven by an increase in wages, benefits and social security expenses resulting from a significant increase in headcount.

3.18 Sales Expenses

From the year ended December 31, 2023, to the year ended December 31, 2024, sales expenses increased by €32.6 million from €29.4 million to €62.0 million, mainly due to increased expenses for setup and enhancement of the commercial IT platform and an increase in wages, benefits and social security expenses resulting from an increase in headcount.

3.19 General and Administrative Expenses

From the year ended December 31, 2023, to the year ended December 31, 2024, our general and administrative expenses increased by €211.7 million from €535.1 million to €746.8 million. The increase resulted mainly from higher expenses for legal and consulting costs, as well as increased wages, benefits and social security expenses resulting from an increase in headcount.

3.20 Other Operating Income

(in millions €)	Years ended December 31, 2024	2023
Reimbursement asset	514.5	—
Foreign exchange differences	155.9	—
Grants	26.6	1.0
Income from foreign exchange forward contracts	14.3	259.2
Other	85.1	39.3
Total	**796.4**	**299.5**

During the year ended December 31, 2024, other operating income increased by €496.9 million compared to the previous year, from €299.5 million to €796.4 million. In the year ended December 31, 2024, other operating income primarily included income from reimbursement claims against Pfizer in connection with the National Institutes of Health (NIH) and the University of Pennsylvania (UPenn) totaling €514.5 million and from foreign currency differences of €155.9 million. Out-of-period income amounted to €26.2 million and primarily included reversals of provisions.

3.21 Other Operating Expenses

(in millions €)	Years ended December 31, 2024	2023
Expenses from contractual disputes / settlements	1,171.9	—
Foreign exchange differences	65.8	284.6
Expenses from employee programs of subsidiaries	60.2	7.1
Expenses from impairments of receivables	56.7	0.0
Other	62.3	23.9
Total	**1,416.9**	**315.6**

During the year ended December 31, 2024, other operating expenses increased by €1,101.3 million compared to the previous year, from €315.6 million to €1,416.9 million. Other operating expenses during the year ended December 31, 2024, mainly include expenses from settlements of contractual disputes in the amount of €1,171.9 million and foreign exchange losses of €65.8 million. Further effects resulted from increased expenses from employee programs of subsidiaries in the amount of €60.2 million and from impairments of receivables from subsidiaries in the amount of €56.7 million. Out-of-period expenses amounted to €0.5 million and primarily included insurance premiums of the previous year and adjustments to personnel provisions.

3.22 Finance Result

The finance result, comprising the effects of profit transfer and interest income and expenses, developed as follows in the 2024 financial year:

(in millions €)	Years ended December 31, 2024	2023
Investment result	**198.0**	**18.4**
Income from profit transfer	309.5	184.6
Expenses from loss transfer	(111.5)	(166.2)
Interest result	**486.7**	**318.4**
Other interest and similar income	641.4	366.7
thereof from affiliated companies	*60.6*	*40.0*
Other interest and similar expenses	(17.6)	(78.0)
thereof to affiliated companies	*(14.9)*	*(74.4)*
Impairments of financial assets and securities classified as current assets	(190.9)	—
Income from securities	53.8	29.7
Total	**684.7**	**336.8**

3.23 Other Notes to the Income Statement

3.23.1 Cost of Materials

(in millions €)	Years ended December 31, 2024	2023
Cost of purchased services	0.6	—
Cost of raw materials and supplies and of purchased merchandise	0.1	1.1
Total	**0.7**	**1.1**

During the year ended December 31, 2024, the cost of materials decreased by €0.4 million year-on-year from €1.1 million to €0.7 million. Expenses that are not directly attributable to the company's sales are not part of the cost of materials. In our view, this leads to a clearer presentation of the company's business model and to a corresponding change in the previous year's figures.

3.23.2 Personnel Expenses

(in millions €)	Years ended December 31, 2024	2023
Wages and salaries	446.0	288.3
Wage taxes, social security, pension and other benefit costs	55.0	40.0
thereof for old-age pensions	*0.6*	*0.4*
Total	**501.0**	**328.3**

Personnel expenses increased by €172.7 million from €328.3 million during the 2023 financial year to €501.0 million during the 2024 financial year. The increase was primarily driven by the exercise of the ESOP 2019 program, the increase in headcount, as well as wage taxes and social security expenses in relation with our share-based payments.

3.24 Other Notes / Corporate Bodies

3.24.1 Supervisory Board

During the 2024 financial year, the following persons were members of the Supervisory Board:

Name (function)	Age	Expiry of appointment	Main occupation (other relevant appointments)
Helmut Jeggle (Chair of the Supervisory Board)	54	2026	Managing Partner of Salvia GmbH and entrepreneurial venture capital investor (Supervisory Board member of 4SC AG, AiCuris AG and Tonies SE, Board Director of Bambusa Therapeutics Inc.)
Ulrich Wandschneider, Ph.D. (Deputy Chair of the Supervisory Board)	63	2027	Managing Director of beebusy capital GmbH and independent consultant for companies in the life science and healthcare sector (Supervisory Board member of Marienhaus GmbH)
Baroness Nicola Blackwood	45	2027	Managing Director and Chair of Oxford University Innovations Limited (Equity Partner, ReCode Health Ventures LLC, Trustee and Director of the Alan Turing Institute, Chair of the Advisory Board of Genomics England Limited, Independent and Non-Executive Director of RTW Biotech Opportunities Ltd)
Prof. Anja Morawietz, Ph.D.	47	2026	Auditor and management consultant, Professor of External Accounting and General Business Administration at Nuremberg Georg Simon Ohm University of Applied Sciences
Michael Motschmann	67	2027	Member of the Management Board and Head of the Equity Investments division of MIG Capital AG (Supervisory Board member of AFFiRiS AG, APK AG, HMW-Emissionshaus AG and HMW-Innovations AG)
Prof. Rudolf Staudigl, Ph.D.	70	2026	Independent consultant (Supervisory Board member of TÜV Süd Aktiengesellschaft until July 3, 2024, Supervisory Board member of Groz-Beckert KG (Deputy Chair))

3.24.2 Management Board

During the 2024 financial year, the following persons were members of the Management Board:

Name	Age	Expiry of appointment	Position (main responsibilities)
Prof. Ugur Sahin, M.D.	59	2026	Chair of the Management Board (Chief Executive Officer) (Research and Development, Scientific Collaborations, Patent Applications, Quality Assurance, and Project Management)
Annemarie Hanekamp[1]	44	2028	Chief Commercial Officer (Marketing and Sales)
Jens Holstein[3]	61	2025	Chief Financial Officer (Finance, Human Resources, Risk Management, and Purchasing)
Sean Marett[2]	60	2024	Chief Business Officer and Chief Commercial Officer (Marketing and Sales)
Sierk Poetting, Ph.D.	52	2026	Chief Operating Officer (Production, IT, Laboratories and Infrastructure, Sustainability, and Internal Communication)
Ryan Richardson	45	2026	Chief Strategy Officer (Corporate Strategy, capital market responsibility, and Investor Relations)
James Ryan, Ph.D.	49	2027	Chief Legal Officer and Chief Business Officer (Legal, Business Development, Alliance Management, and Intellectual Property)
Prof. Özlem Türeci, M.D.	57	2025	Chief Medical Officer (Clinical Development, Regulatory, and Medical Affairs)

(1) Annemarie Hanekamp was appointed to the Management Board as Chief Commercial Officer with effect from July 1, 2024.
(2) Sean Marett was a member of the Management Board until June 30, 2024.
(3) Jens Holstein, our Chief Financial Officer, plans to retire at the end of his term. A successor will be announced in due course

3.24.3 Total Supervisory Board and Management Board Compensation

In the 2024 financial year, the compensation to the members of the Supervisory Board of BioNTech SE amounted to €0.9 million (previous year: €0.6 million). The compensation to the members of the Management Board of BioNTech SE amounted to €13.0 million in the 2024 financial year (previous year: €8.3 million).

(in millions €)	Years ended December 31, 2024	2023
Management Board[1]	**13.0**	**8.3**
Fixed compensation	4.0	3.9
Fringe benefits	0.2	0.0
Short-term incentive – first installment	0.8	0.7
Short-term incentive – second installment[2]	0.6	1.0
Other performance-related variable compensation[3]	1.3	0.8
Share-based payments (incl. long-term incentive)[4]	6.1	1.9
Supervisory Board	**0.9**	**0.6**
Total compensation paid to key management personnel	**13.9**	**8.9**

(1) During the year ended December 31, 2024, Sean Marett retired from the Management Board with effect as of July 1, 2024. Therefore, his compensation until his departure date is presented on a pro-rata basis in this table. The following compensation pursuant to his separation agreement subsequent to his departure date and thus as former Management Board member are not included in this table: a severance payment of €275,000, an additional payment of €39,000 in respect of the 2024 STI, a grant of 5,760 phantom options in respect of the 2024 LTI and a payment of €477,030 in relation to his 12-months consultancy agreement.

(2) The fair value of the second installment of the short-term incentive compensation which has been classified as a cash-settled share-based payment arrangement was determined pursuant to the regulations of IFRS 2 “Share-based Payments”. This table shows the pro-rata share of personnel expenses for the respective financial year, which are recognized over the award’s vesting period beginning as of the service commencement date (date when entering or renewing service agreements) until each separate determination date and are remeasured until settlement date.

(3) Represents for the financial year 2024 the cash payment related to the one-time signing bonus granted to Annemarie Hanekamp as part of her appointment to the Management Board, designed to compensate her for lower bonus payments that she would receive as part of her compensation package with BioNTech and to recognize and appreciate her move to BioNTech. For 2023, the amount represents the one-time signing cash payment related to James Ryan’s appointment to the Management Board to provided compensation in lieu of participation in the LTI 2023 program and the one-time special cash payment related to Jens Holstein to honor his contribution to BioNTech’s extraordinary financial performance. For 2022, the amount includes a one-time signing and retention cash payment agreed when renewing the service agreement agreed with Sean Marett in 2022.

(4) The fair value of the share-based payments was determined pursuant to the regulations of IFRS 2 “Stock-based Payments”. This table shows the pro-rata share of personnel expenses resulting from stock-based compensation for the respective financial year. During the years ended December 31, 2024, 2023 and 2022, the amounts included expenses derived from a one-time signing bonus granted to Jens Holstein as of his appointment to the Management Board in the form of 4,246 phantom shares as well as expenses derived from the one-time signing bonus granted to Annemarie Hanekamp as of her appointment to the Management Board in the form of shares in the amount of €500,000.

The amounts disclosed in the table are the amounts recognized as an expense during the period.

Management Board members participated in our ESOP program (see Note 3.23.4). Out of the 5,152,410 option rights granted to our Management Board under the ESOP 2018 program, 4,921,630 options were exercised during the year ended December 31, 2022. The remaining 230,780 option rights were exercised by Sean Marett in May 2023. During the year ended December 31, 2024, our CEO Prof. Ugur Sahin, M.D., exercised all 4,374,963 options granted under the CEO Grant 2019 and Members of the Management Board, who participated in the LTI 2020 Board Program, exercised 209,128 options in August 2024 while 38,968 options are outstanding as of December 31, 2024 (see Note 3.23.4). For further information regarding outstanding options for each Management Board member from LTI 2021-2024 Board Programs, see Note 3.23.4.

3.24.4 Share-Based Payments

As of December 31, 2024, there were the following share-based payment arrangements for Management Board members and our own employees as well as for employees of subsidiaries. Accordingly, we not only account for share-based payments to employees of BioNTech SE but also for commitments to employees of subsidiaries that are fulfilled by BioNTech SE. When these beneficiaries are not employees of BioNTech SE, the expenses are recognized in other operating expenses.

Overall, expenses resulting from share-based payment transactions in the 2023 financial year amounted to €233.6 million (previous year: €43.2 million).

BioNTech 2020 Employee Equity Plan for Employees Based Outside North America (Equity-Settled)

In December 2020, we approved the BioNTech 2020 Employee Equity Plan for employees based outside North America, or the European Plan. Under the European Plan, Restricted Stock Units, or RSUs, are offered to our employees.

Award agreements were entered as of the respective grant dates in February 2021 (LTI 2020), January 2022 (LTI 2021 program), December 2022 (LTI 2022 program) and January 2024 (LTI 2023). RSUs issued under the LTI 2020, LTI 2021, LTI 2022 and LTI 2023 programs vest annually in equal installments over respective waiting periods of four years, commencing in December 2020, December 2021, December 2022 and December 2023, respectively. All programs were classified as equity-settled as we have the ability to determine the method of settlement.

The fair values of the awards issued under the European Plan were based upon the price of our ADSs representing ordinary shares at the grant date.

	LTI 2020 program	LTI 2021 program	LTI 2022 program	LTI 2023 program
Weighted average fair value	€ 92.21	€203.22	€165.03	€ 97.99
Waiting period (in years)	4.0	4.0	4.0	4.0

The RSUs outstanding as of the respective dates are presented in the table below.

	LTI 2020 program	LTI 2021 program	LTI 2022 program	LTI 2023 program
As of January 1, 2023	235,305	104,608	396,110	—
Forfeited / Modified	(4,400)	(3,497)	(16,141)	—
As of December 31, 2023	**230,905**	**101,111**	**379,969**	**—**
As of January 1, 2024	230,905	101,111	379,969	—
Granted / Allocated	—	—	—	834,211
Settled	(225,201)[1]	—	—	—
Forfeited / Modified	(4,541)	(2,332)	(12,507)	(62,902)
As of December 31, 2024	**1,163**	**98,779**	**367,462**	**771,309**
thereof vested	*1,163*	*75,920*	*187,812*	*194,636*
thereof unvested	—	*22,859*	*179,650*	*576,673*

(1) The closing price of an American Depositary Share of BioNTech on Nasdaq on December 13, 2024, the last trading day before the settlement date, converted from USD to Euro using the exchange rate published by the German Central Bank (Deutsche Bundesbank) on the same day was €114.45.

BioNTech 2024 North America Employee Participation Plan (Equity-Settled)

During the year ended December 31, 2024, a new long-term incentive program for employees resident in North America was established. Within this plan, BioNTech SE has granted RSUs and Performance-RSUs (for individuals at the Job Level Vice President or above) with an equity-based LTI program to all of their employees. The number of RSUs granted to each participant is determined by multiplying the eligible earnings by a percentage within the applicable range for such individual's BioNTech Job Level and dividing such amount by the Share Price at Grant, rounding the result down to the nearest whole number. The number of PRSUs is subject to adjustments based on the performance of BioNTech ADSs against the Nasdaq Biotechnology Index (Index). In May 2024, 356,757 RSUs and 34,481 PRSUs were granted to the participants. In December 2024, 47,115 further RSUs were granted to New-Joiners. The weighted average fair value at grant dates was €93.00. Between the grant date in May and December 31, 2024, 24,284 RSUs and 2,915 PRSUs were forfeited. As of December 31, 2024, 379,588 RSUs and 31,566 PRSUs are outstanding.

All RSUs, except the PRSUs, shall vest with annually in equal tranches of 25% over a period of 4 years, starting from the date of the grant. In contrast to the German LTI employee programs 2020-2023, there is no 4-year waiting period.

InstaDeep RSU Program Employees (Partly Equity-Settled, Partly Cash-Settled)

As part of the acquisition of InstaDeep in 2023, it was agreed to issue a long-term RSU award with a total target incentive value of £15.0 million. The start of the vesting period was July 2023. The 160,997 RSUs granted under this award vest annually in equal tranches of 25% over a period of 4 years. There is no waiting period and each tranche will be settled with vesting. The weighted average fair value at grant date was €92.08.

The first tranche of 40,249 RSUs vested in July 2024 and was settled in the three months ended December 31, 2024, in cash. As of December 31, 2024, 120,748 RSUs were outstanding. The gross payout amount of the settlement of the first tranche was €2.1 million. The program is accounted for as equity-settled and it is at the discretion of the company whether the following three tranches will be settled in equity or in cash in the years 2025-2027.

BioNTech 2020 Restricted Stock Unit Plan for North America Employees (Cash-Settled)

In December 2020, we approved the BioNTech 2020 Restricted Stock Unit Plan for North America Employees, or the North American Plan. Under the North American Plan, RSUs are offered to our employees. These RSUs vest over four years, with 25% vesting one year after the service commencement date and the remainder vesting in equal quarterly installments thereafter. The first awards under the North American Plan were granted in February 2021. The service date for these awards is the date as of which the employee became employed by BioNTech US. As these RSUs are intended to be cash-settled upon vesting, the awards were defined as a cash-settled share-based payment arrangement. During the years ended December 31, 2024, 2023 and 2022, the settlement of RSUs resulted in a cash outflow of €13.9 million, €10.0 million and €9.4 million, respectively.

As of December 31, 2024, the liability related to these awards amounted to €11.2 million (€14.4 million as of December 31, 2023).

Management Board Grant – Short-Term Incentive (Cash-Settled)

Management Board's service agreements also include an STI compensation component, which is an annual performance-related bonus for the years of their respective service periods.

50% of each annual award is paid out at the end of the calendar month following the date on which the Supervisory Board has approved the consolidated financial statements of the Company for the financial / bonus year that is relevant for the determination of the STI (first installment). The remaining 50% of each annual award is paid out one year after the achievement of the performance targets for the respective bonus year has been determined, subject to an adjustment relative to the performance of the price of the American Depositary Shares representing our ordinary shares during that year (second installment). The second installments represent cash-settled share-based payment arrangements. The fair values of the liabilities are recognized over the awards' vesting periods beginning when entering or renewing service agreements, i.e., the service commencement date, until each separate determination date and are remeasured until the settlement date. As of December 31, 2024, the liability related to these awards amounted to €2.8 million (€2.1 million as of December 31, 2023).

Management Board Grant – Long-Term Incentive (Partly Equity-Settled, Partly Cash-Settled)

Our Management Board's service agreements provide for long-term, four-year incentive compensation (Management Board Grant - LTI) through an annual grant of options to acquire BioNTech shares at the end of the respective waiting periods of such agreements. The options are subject to the terms and conditions of the respective authorizations of the AGM creating our Employee Stock Ownership Plan, or ESOP, and the applicable option agreements.

The options vest annually in equal installments over four years commencing on the first anniversary of the allocation date and are exercisable four years after the allocation date. Vested options can only be exercised if each of the following performance criteria has been achieved: (i) at the time of exercise, the current price is equal to or greater than the threshold amount (that is, the exercise price, provided that such amount increases by seven percentage points on each anniversary of the allocation date); (ii) at the time of exercise, the current price is at least equal to the target price (that is, (a) for the twelve-month period starting on the fourth anniversary of the allocation date, $8.5 billion divided by the total number of the ordinary shares outstanding immediately following the initial public offering (other than ordinary shares owned by BioNTech), and (b) for each twelve-month period starting on the fifth or subsequent anniversary of the allocation date, 107% of the target share price applicable for the prior twelve-month period); and (iii) the closing price for the fifth trading day prior to the start of the relevant exercise window is higher than the exercise price by at least the same percentage by which the Nasdaq Biotechnology Index (or a comparable successor index) is higher than it was on the last trading day before the allocation date. Following the expiry of the waiting period, option rights may be exercised during the exercise windows set out in the ESOP agreement. Option rights can be exercised up to ten years after the allocation date, after which they will be forfeited without compensation.

The right to receive options generally represents an equity-settled share-based payment arrangement. The allocation of options in 2020 occurred in February 2020. In May 2021 and May 2022, Management Board members received phantom options equivalent to the number of options they would have been entitled to receive for 2021 and 2022, which led to a modification from equity-settled to cash-settled share-based payment arrangement and a reclassification of €1.1 million and €3.3 million between equity and non-current other liabilities as of the respective allocation dates. During 2023 and 2024, options were granted in May 2023 and August 2024, respectively.

A Monte-Carlo simulation model has been used to measure the fair values at the (estimated) allocation dates of the Management Board Grant. This model incorporates the impact of the performance criteria regarding share price and index development described above. The parameters used for measuring the fair values as of the respective (estimated) allocation dates were as follows:

	Allocation date February 2020	Allocation date May 12, 2021[1]	Allocation date May 17, 2021[1]	Allocation date May 2022[1]	Allocation date May 2023	Allocation date August 2024
Weighted average fair value	€ 10.83	€ 36.13	€ 31.61	€ 42.24	€ 45.73	€ 37.88
Weighted average share price	€ 28.20	€ 179.16	€ 190.87	€ 157.24	€ 98.93	€ 84.23
Exercise price[2]	€ 28.32	€ 178.29	€ 179.83	€ 146.40	€ 104.86	€ 75.91
Expected volatility	36.6%	56.2%	52.3%	53.5%	47.2%	48.9%
Expected life (years)	4.8	4.6	4.6	5.8	5.8	5.8
Risk-free interest rate	1.6%	4.5%	4.2%	4.5%	3.7%	3.8%

(1) Classified as cash-settled share-based payment arrangement; all other share-based payment arrangements are classified as equity-settled.
(2) The share options allocated as of February 2020 and May 2023 as well as the phantom share options allocated as of May 2021 and 2022 are subject to an effective exercise price cap.

For the awards with estimated allocation dates, the exercise prices of options expected to be allocated have been derived from the Monte-Carlo simulation model. Those will be adjusted until the actual allocation has occurred and the exercise price has ultimately been determined.

	Estimated allocation date 2025	Estimated allocation date 2026	Estimated allocation date 2027	Estimated allocation date 2028
Weighted average fair value[1]	€ 49.89	€ 45.98	€ 43.98	34.74
Weighted average share price[1]	€ 109.68	€ 109.68	€ 109.68	€ 109.68
Exercise price[1]	€ 112.63	€ 119.48	€ 123.00	€ 130.37
Expected volatility	49.2%	47.8%	47.8%	43.7%
Expected life (years)[1]	5.8	5.8	5.8	5.8
Risk-free interest rate	4.6%	4.7%	4.7%	4.8%

(1) Valuation parameter for estimated allocation dates derived from the Monte-Carlo simulation model.

All options are subject to an effective exercise price cap, which means that the exercise price shall be adjusted to ensure that the current price of an ADS as of the exercise date does not exceed 800% of the exercise price. For the LTI 2020, the maximum economic benefit receivable is capped at $246.24, and the effective exercise price is capped at a Euro amount equivalent to $30.78. For the phantom share options issued under the LTI 2021 and 2022 programs and the options issued under the LTI 2023 and 2024 programs, the maximum compensation that each member is entitled to receive, together with other compensation components received in the respective grant year, shall not exceed €20.0 million for Ugur Sahin and €10.0 million for all others.

Expected volatility was based on an evaluation of the historical volatilities of comparable companies over the historical period commensurate with the expected option term. The expected term was based on general option holder behavior for employee options.

The share options (including phantom share options) allocated to our Management Board as of the dates indicated are presented in the table below.

	Allocation date February 2020	Allocation date May 12, 2021[1]	Allocation date May 17, 2021[1]	Allocation date May 2022[1]	Allocation date May 2023	Allocation date August 2024
(Phantom) share options outstanding as of January 1, 2023	**248,096**	**45,279**	**6,463**	**86,118**	**—**	**—**
Granted / Allocated	—	—	—	—	130,586	—
(Phantom) share options outstanding as of December 31, 2023	**248,096**	**45,279**	**6,463**	**86,118**	**130,586**	**—**
(Phantom) share options outstanding as of January 1, 2024	**248,096**	**45,279**	**6,463**	**86,118**	**130,586**	**—**
Granted / Allocated	—	—	—	—	—	193,257
Exercised[2]	(209,128)	—	—	—	—	—
Forfeited / Modified	—	(1,778)	—	(7,332)	(13,812)	(12,729)
(Phantom) share options outstanding as of December 31, 2024	**38,968**	**43,501**	**6,463**	**78,786**	**116,774**	**180,528**
thereof allocated and vested but subject to performance and/or waiting requirements	38,968	30,878	4,848	43,060	32,646	—
thereof allocated and unvested	—	12,623	1,615	35,726	84,128	180,528

(1) Classified as cash-settled share-based payment arrangement; all other share-based payment arrangements are classified as equity-settled.

(2) The average closing price of an American Depositary Share of BioNTech on Nasdaq weighted over the various dates immediately preceding the settlement dates, converted from USD to Euro using the exchange rate published by the German Central Bank (Deutsche Bundesbank) on the same days was €75.00 for all options exercised in 2024.

For the awards with estimated allocation dates, the numbers of options expected to be allocated have been derived from a Monte-Carlo simulation model. Those will be adjusted until the actual allocation has occurred and the number of options granted has ultimately been determined.

The share options expected to be allocated to our Management Board as of the dates indicated are presented in the table below.

	Estimated allocation date 2025[1]	Estimated allocation date 2026[1]	Estimated allocation date 2027[1]	Estimated allocation date 2028[1]
Share options estimated to be allocated	122,211	98,760	26,616	7,533

(1) Valuation parameter derived from the Monte-Carlo simulation model.

As of December 31, 2024, the share options allocated and expected to be allocated under our equity-settled share-based payment arrangements had a remaining weighted average expected life of 5.0 years (as of December 31, 2023: 4.1 years).

As of December 31, 2024, the liability related to the phantom option awards amounted to €5.1 million (€3.6 million as of December 31, 2023).

Chief Executive Officer Grant (Equity-Settled)

In September 2019, we granted Prof. Ugur Sahin, M.D., an option to purchase 4,374,963 of our shares under the ESOP 2017/2019 program. All of these option rights vested and became exercisable in 2023, and were exercised on August 9, 2024, with an exercise price for each option of €13.74 ($15.00) calculated using the foreign exchange rate published by the German Central Bank (Deutsche Bundesbank) on the day before the exercise date and by applying the effective exercise cap and the maximum cap mechanism as disclosed above. The closing price of one ADS on Nasdaq on the settlement date converted from U.S. Dollars to Euro using the exchange rate published by the German Central Bank (Deutsche Bundesbank) on the same day was €73.68 and led to an intrinsic value of the exercised options of €259.5 million.

In August 2024, the Supervisory Board determined that the award would be settled by the delivery of treasury shares (in the form of ADSs) equal to the net value of the exercised option rights after deduction of (i) the exercise price and (ii) the applicable wage taxes (including solidarity surcharge and church tax, if applicable) and social security contributions resulting from the exercise. The applicable taxes and social security contributions resulting from and withheld upon the exercise amounted to €123.2 million and were paid by us in September 2024 in cash directly to the respective authorities. The settlement mechanism decision changed neither the rights nor the classification of the grant as equity-settled. As a result of the settlement, no additional share-based payments under IFRS 2 were recorded during the year ended December 31, 2024.

Employee Stock Ownership Plan (Partly Equity-Settled, Partly Cash-Settled)

Employee Stock Ownership Plan (Equity-Settled)

Based on an authorization of the general meeting on August 18, 2017, we established a share option program under which we granted selected employees options to receive our shares. The program is designed as an Employee Stock Ownership Plan, or ESOP. We offered participants a certain number of option rights by their explicit acceptance of an option rights agreement. The exercise of option rights in accordance with the agreement gives the participants the right to obtain shares against payment of the exercise price. With respect to the Management Board members serving at the time of allocation, the options are subject to the effective exercise price cap and maximum cap mechanisms. Under the exercise price cap, the exercise price shall be adjusted to ensure that the current price of an ADS as of the exercise date does not exceed 800% of the exercise price. Under the maximum cap mechanism, the maximum economic benefit receivable in respect of any exercised option, was capped at $240.00, with the effective exercise price being capped at a Euro amount equivalent to $30.00. Under the ESOP, the option rights (other than Özlem Türeci's, and Ryan Richardson's options) fully vest after four years and can be exercised if: (i) the waiting period of four years has elapsed; and (ii) at the time of exercise, the average closing price of the shares of the Company or the average closing price of the right or certificate to be converted into an amount per share on the previous ten trading days preceding the exercise of the option right exceeds the strike price by a minimum of 32%, with this percentage increasing by eight percentage points as of the fifth anniversary of the respective issue date and as of each subsequent anniversary date. Following the expiry of the waiting period, option rights may be exercised within a period of four weeks from the date of the Annual General Meeting or the publication of the annual financial statements, the semi-annual report or our most recent quarterly report or interim report (exercise windows). The option rights can be exercised up to eight years after the allocation date. If they have not been exercised by that date, they will be forfeited without compensation.

By way of a shareholders' resolution of the general meeting on August 19, 2019, the authorization to issue such option rights was amended such that, in order for the options to be exercisable, the average closing price of the Company's shares or the average closing price of the right or certificate to be converted into an amount per share on the ten trading days immediately preceding the exercise must exceed the strike price by a minimum of 28%, with this percentage increasing by seven percentage points as of the fifth anniversary of the issue date and as of each subsequent anniversary date. Furthermore, in addition to the aforementioned requirements, the exercise is only possible if the share price (calculated by reference to the price of the ordinary share underlying the ADS) has performed similar to or better than the Nasdaq Biotechnology Index. The changes made do not affect option rights already issued.

The fair value of the ESOP has been measured using a binomial model. Service conditions attached to the arrangement were not taken into account in measuring the fair value.

The share options can only be exercised by the grantee if the price of the share is equal or greater to the threshold amount as defined in the ESOP agreement. Moreover, the option rights can only be exercised if the IPO has occurred. Both conditions have been incorporated into the fair value at the grant date.

The inputs used in the measurement of the fair values at the grant date of the ESOP were as follows:

	Grant date November 15, 2018	Grant dates between February 21 and April 3, 2019
Weighted average fair value	€ 7.41	€ 6.93
Weighted average share price	€ 14.40	€ 15.72
Exercise price[1]	€ 10.14	€ 15.03
Expected volatility	46.0%	46.0%
Expected life (years)	5.8	6.0
Risk-free interest rate	0.1%	0.1%

(1) With respect to the Management Board members appointed as such at the time the options were granted, the options are subject to the effective exercise price cap as well as the maximum cap mechanism.

Expected volatility has been based on an evaluation of the historical and the implied volatilities of comparable companies over the historical period commensurate with the expected term. The expected term has been based on general option holder behavior for employee options.

Set out below is an overview of changes to share options outstanding and number of ordinary shares underlying these options that occurred during the periods indicated:

	Share options outstanding	Number of ordinary shares underlying options	Weighted average exercise price (€)[1]
As of January 1, 2023	57,584	1,036,514	11.10
Exercised[2]	(39,785)	(716,121)	11.04
As of December 31, 2023	**17,799**	**320,393**	**11.24**
As of January 1, 2024	17,799	320,393	11.24
Exercised[2]	(7,725)	(139,053)	10.14
As of December 31, 2024	**10,074**	**181,340**	**12.08**
thereof vested	*10,074*	*181,340*	*12.08*
thereof unvested	—	—	—

(1) With respect to the Management Board members appointed as such at the time the options were granted, the options are subject to the effective exercise price cap as well as the maximum cap mechanism.

(2) The average closing price of an American Depositary Share of BioNTech on Nasdaq weighted over the various dates immediately preceding the settlement dates, converted from USD to Euro using the exchange rate published by the German Central Bank (Deutsche Bundesbank) on the same days was €83.45 and €96.49 for all settlements during the years ended December 31, 2024 and 2023, respectively.

In September 2022, the Supervisory Board determined the ESOP settlement by the delivery of treasury shares (in the form of ADSs) equal to the net value of the exercised option rights after deduction of (i) the exercise price and (ii) the applicable wage taxes (including solidarity surcharge thereon and church tax, if applicable) and social security contributions resulting from such exercise. The settlement was applied during the exercise windows in 2024 and 2023.

As of December 31, 2024, the share options outstanding under our equity-settled share-based payment arrangements had a remaining weighted average expected life of 0.1 years (as of December 31, 2023: 0.8 years).

InstaDeep Employee Stock Ownership Awards (Equity-Settled)

As part of the acquisition of InstaDeep in 2023, we agreed to issue long-term ESOP awards with a total target incentive value of £15.0 million. With this award, 398,013 options were granted to the InstaDeep employees. The awards are subject to a 4-year cliff vesting and will vest and become exercisable in July 2027. The exercise price is $94.47 for all InstaDeep employees located in France and Rest of World and $100.34 for two employees located in the US. As of December 31, 2024, 398,013 options are outstanding.

The fair value of the ESOP awards has been measured using a Monte Carlo simulation. For the ESOPs granted under the InstaDeep Employee Stock Ownership awards, the same performance requirements that allow the ESOPs to be exercised apply as for the BioNTech Employee Stock Ownership Plan.

Employee Stock Ownership Plan (Cash-Settled)

Phantom options which were granted under the ESOP mainly during the year ended December 31, 2022, each give the participants the right to receive a cash payment equal to the difference between an exercise closing price (average closing price of an American Depositary Share of BioNTech on Nasdaq over the last ten trading days preceding the exercise date) and the exercise price. The phantom options can only be exercised by the grantee if the price of the share is equal or greater to the threshold amount as defined in the ESOP agreement. The majority of options have an exercise price of €10.14. During the years ended December 31, 2024 and 2023, 50,748 and 52,100 cash-settled phantom option rights were exercised and resulted in a cash outflow of €3.8 million and €4.5 million, respectively. The average 10-day closing prices of an American Depositary Share of BioNTech on Nasdaq weighted over the various settlement dates converted from USD to Euro using the exchange rate published by the German Central Bank (Deutsche Bundesbank) on the same days was €92.70 and €96.25. As of December 31, 2024, 58,903 cash-settled option rights remained outstanding. As of December 31, 2024, the liability related to cash-settled share-based payment option rights amounted to €5.0 million (€8.5 million as of December 31, 2023). The liability is based on the fair value of the respective rights. The fair value is measured using a binomial model consistent with the grant date fair value measurement of the equity-based option rights described above, which is updated on every reporting date.

3.24.5 Auditor's Fees

The Company does not disclose the auditor's fees (Section 285 no. 17 HGB) as this information is stated in the consolidated financial statements prepared by BioNTech SE in which the Company is included.

3.24.6 Average Headcount in Accordance with Section 267 Para. 5 HGB

	Years ended December 31,	
	2024	**2023**
Scientific research and development	1,374	1,310
Support functions	1,083	921
Clinical research and development	426	436
Operations	129	220
Quality	200	193
Commercial and business development	97	86
Total	**3,309**	**3,166**

3.24.7 Related Parties

ATHOS KG, Holzkirchen, Germany is the sole shareholder of AT Impf GmbH, Munich, Germany, and beneficial owner of ordinary shares in BioNTech. ATHOS KG via AT Impf GmbH has de facto control over us based on its substantial shareholding, which practically enabled it to exercise the majority of voting rights to pass resolutions at our Annual General Meeting, or AGM. BioNTech SE prepares the consolidated financial statements for the smallest group of companies.

A number of key management personnel can control or exercise significant influence over BioNTech SE. There were no transactions with key management personnel during the 2024 financial year.

However, there were business relationships with related parties controlled by ATHOS KG in the 2024 financial year. These business relationships mainly include rental and real estate management activities. The total amount of transactions with ATHOS KG or entities controlled by it was as follows for the periods indicated:

	Years ended December 31,	
(in millions €)	2024	2023
ATHOS KG, Holzkirchen	0.2	0.3
Total	**0.2**	**0.3**

The outstanding balances of transactions with ATHOS KG or entities controlled by them were as follows as of the periods indicated:

(in millions €)	December 31, 2024	December 31, 2023
ATHOS KG, Holzkirchen	—	0.4
Total	**—**	**0.4**

3.24.8 Disclosure of Authorized Capital Pursuant to Section 160 Para. 1 No. 4 AktG

By resolution adopted by the Annual General Meeting on June 22, 2021, the Management Board is authorized to increase share capital by a total of up to €122,657,313 by issuing up to 122,657,313 registered shares with no par value in return for cash or contributions in kind (Authorized Capital).

3.24.9 Notification Pursuant to Section 20 AktG

ATHOS KG, Holzkirchen, Germany is the sole shareholder of AT Impf GmbH, Munich, Germany, and beneficial owner of ordinary shares in BioNTech. ATHOS KG via AT Impf GmbH has de facto control over us based on its substantial shareholding, which practically enabled it to exercise the majority of voting rights to pass resolutions at our Annual General Meeting, or AGM. As of December 31, 2024, and December 31, 2023, AT Impf GmbH held 42.4% and 43.8%, respectively, of the shares in BioNTech SE.

3.24.10 Corporate Governance

The Declaration of Conformity pursuant to Section 161 para. 1 AktG, which, in accordance with the Code, is issued in connection with the Corporate Governance Declaration pursuant to Section 315d in conjunction with Section 289f HGB, was issued and included in the combined management report of BioNTech SE.

3.24.11 Events After the Reporting Period

Acquisition of Biotheus

The acquisition of Biotheus by BioNTech Collaborations GmbH was completed in January 2025. In this context, BioNTech Collaborations GmbH carried out a capital increase of €812.2 million by BioNTech SE to settle the purchase price payment.

Jens Holstein – retirement

Jens Holstein, our Chief Financial Officer, plans to retire at the end of his term. A successor will be announced in due course.

Mainz, March 7, 2025

BioNTech SE

Prof. Ugur Sahin, M.D.
Chief Executive Officer

Jens Holstein
Chief Financial Officer

Annemarie Hanekamp
Chief Commercial Officer

Sierk Poetting, Ph.D.
Chief Operating Officer

Ryan Richardson
Chief Strategy Officer

James Ryan, Ph.D.
Chief Legal Officer und
Chief Business Officer

Prof. Özlem Türeci, M.D.
Chief Medical Officer

	January 1, 2024 *in millions €*	Additions *in millions €*	Acquisition costs Disposals *in millions €*	Reclassifications *in millions €*	December 31, 2024 *in millions €*
I. Intangible assets					
1 Purchased franchises, industrial and similar rights and assets, and licenses in such rights and assets	739.4	137.0	0.3	11.3	887.4
2 Goodwill	3.0	—	—	—	3.0
3 Advanced payments	21.5	10.3	—	(11.3)	20.5
	763.9	**147.3**	**0.3**	**—**	**910.9**
II. Property, plant and equipment					
1 Land, land rights and buildings, including buildings on third-party land	52.8	3.5	—	6.0	62.3
2 Other equipment, furniture and fixtures	91.3	15.7	0.6	11.5	117.9
3 Advanced payments and construction in progress	42.1	37.3	0.5	(17.5)	61.4
	186.2	**56.5**	**1.1**	**—**	**241.6**
III. Financial assets					
1 Shares in affiliated companies	1,156.5	41.1	—	—	1,197.6
2 Loans to affiliated companies	8.5	—	8.5	—	—
3 Equity investments	47.0	188.9	—	—	235.9
4 Securities classified as fixed assets	1,326.4	1,341.6	224.4	—	2,443.6
5 Other loans	2.6	38.0	0.9	—	39.7
	2,541.0	**1,609.6**	**233.8**	**—**	**3,916.8**
	3,491.1	1,813.4	235.2	—	5,069.3

	Accumulated amortization, depreciation and impairment				Carrying amounts	
	January 1, 2024 *in millions €*	Additions *in millions €*	Disposals *in millions €*	December 31, 2024 *in millions €*	December 31, 2024 *in millions €*	December 31, 2023 *in millions €*
I. Intangible assets						
1 Purchased franchises, industrial and similar rights and assets, and licenses in such rights and assets	88.6	278.1	0.3	366.4	521.0	650.8
2 Goodwill	0.7	0.2	—	0.9	2.1	2.3
3 Advanced payments	—	—	—	—	20.5	21.5
	89.3	**278.3**	**0.3**	**367.3**	**543.6**	**674.6**
II. Property, plant and equipment						
1 Land, land rights and buildings, including buildings on third-party land	10.8	6.3	—	17.1	45.2	42.0
2 Other equipment, furniture and fixtures	38.9	16.2	0.4	54.7	63.2	52.4
3 Advanced payments and construction in progress	—	—	—	—	61.4	42.1
	49.7	**22.5**	**0.4**	**71.8**	**169.8**	**136.5**
III. Financial assets						
1 Shares in affiliated companies	—	48.6	—	48.6	1,149.0	1,156.5
2 Loans to affiliated companies	—	—	—	—	—	8.5
3 Equity investments	—	139.1	—	139.1	96.8	47.0
4 Securities classified as fixed assets	—	0.4	—	0.4	2,443.2	1,326.4
5 Other loans	—	—	—	—	39.7	2.6
	—	188.1	—	188.1	3,728.7	2,541.0
	139.0	**488.9**	**0.7**	**627.2**	**4,442.1**	**3,352.1**

The following English language translation of the German language independent auditor's report (Bestätigungsvermerk des unabhängigen Abschlussprüfers) refers to the annual financial statements as well as the management report, which is combined with the group management report (combined management report), of BioNTech SE, Mainz, as of and for the year ended December 31, 2024, prepared in accordance with the requirements of German commercial law (HGB) ("Handelsgesetzbuch": German commercial Code) applicable to business corporations, as a whole and not solely to the annual financial statements presented in this Prospectus on the preceding pages. The management report is not part of this Prospectus.

Independent Auditor's Report

To BioNTech SE

Opinions

We have audited the annual financial statements of BioNTech SE, Mainz, which comprise the balance sheet as at December 31, 2024, and the income statement for the financial year from January 1 to December 31, 2024, and notes to the financial statements, including the recognition and measurement policies presented therein. In addition, we have audited the management report of BioNTech SE, which is combined with the group management report, for the financial year from January 1 to December 31, 2024. In accordance with the German legal requirements, we have not audited the content of the corporate governance declaration pursuant to Sec. 289f HGB ["Handelsgesetzbuch": German Commercial Code] included in section 5 of the management report. In addition, we have not audited the content of the disclosures contained in sections 4.2.3 and 4.2.4 based on recommendation A.5 of the German Corporate Governance Code (GCGC 2022) or the non-financial report contained in section 7 of the management report, which relate to disclosures extraneous to management reports. Disclosures extraneous to management reports are such disclosures that are not required pursuant to Secs. 289, 289a or Secs. 289b to 289d HGB or German Accounting Standard (GAS) 20.

In our opinion, on the basis of the knowledge obtained in the audit,

- the accompanying annual financial statements comply, in all material respects, with the requirements of German commercial law applicable to business corporations and give a true and fair view of the assets, liabilities and financial position of the Company as at December 31, 2024 and of its financial performance for the financial year from January 1 to December 31, 2024 in compliance with German legally required accounting principles, and
- the accompanying management report as a whole provides an appropriate view of the Company's position. In all material respects, this management report is consistent with the annual financial statements, complies with German legal requirements and appropriately presents the opportunities and risks of future development. We do not express an opinion on the corporate governance declaration referred to above or on sections 4.2.3, 4.2.4 and 7 of the management report referred to above.

Pursuant to Sec. 322 (3) Sentence 1 HGB, we declare that our audit has not led to any reservations relating to the legal compliance of the annual financial statements and of the management report.

Basis for the opinions

We conducted our audit of the annual financial statements and of the management report in accordance with Sec. 317 HGB and in compliance with German Generally Accepted Standards for Financial Statement Audits promulgated by the Institut der Wirtschaftsprüfer [Institute of Public Auditors in Germany] (IDW). Our responsibilities under those requirements and principles are further described in the "Auditor's responsibilities for the audit of the annual financial statements and of the management report" section of our auditor's report. We are independent of the Company in accordance with the requirements of German commercial and professional law, and we have fulfilled our other German professional responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinions on the annual financial statements and on the management report.

Other information

The Supervisory Board is responsible for the Report of the Supervisory Board. The executive directors and the Supervisory Board are responsible for the declaration pursuant to Sec. 161 AktG ["Aktiengesetz": German Stock Corporation Act] on the German Corporate Governance Code, which is part of the corporate governance declaration pursuant to Sec. 289f HGB, and for the compensation report pursuant to Sec. 162 AktG. In all other respects, the executive directors are responsible for the other information. The other information comprises the aforementioned corporate governance declaration and the aforementioned disclosures extraneous to management reports contained in sections 4.2.3, 4.2.4 and 7 of the management report. The other information also comprises additional parts to be included in the annual report, of which we obtained a copy prior to issuing the auditor's report, in particular:

- The Sustainability Report
- The Report of the Supervisory Board pursuant to Sec. 171 (2) AktG
- The Compensation Report

but not the annual financial statements, not the management report disclosures whose content is audited and not our auditor's report thereon.

In addition, the other information comprises additional parts intended for the annual report, which we expect to be provided with after the auditor's report has been issued, in particular:

- The Letter from the Management Board to the shareholders
- The multi-year overview of business development

Our opinions on the annual financial statements and on the management report do not cover the other information, and consequently we do not express an opinion or any other form of assurance conclusion thereon.

In connection with our audit, our responsibility is to read the other information and, in so doing, to consider whether the other information

- is materially inconsistent with the annual financial statements, with the management report or our knowledge obtained in the audit, or
- otherwise appears to be materially misstated.

If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report in this regard.

Responsibilities of the executive directors and the Supervisory Board for the annual financial statements and the management report

The executive directors are responsible for the preparation of the annual financial statements that comply, in all material respects, with the requirements of German commercial law applicable to business corporations, and that the annual financial statements give a true and fair view of the assets, liabilities, financial position and financial performance of the Company in compliance with German legally required accounting principles. In addition, the executive directors are responsible for such internal control as they, in accordance with German legally required accounting principles, have determined necessary to enable the preparation of annual financial statements that are free from material misstatement, whether due to fraud (i.e., fraudulent financial reporting and misappropriation of assets) or error.

In preparing the annual financial statements, the executive directors are responsible for assessing the Company's ability to continue as a going concern. They also have the responsibility for disclosing, as applicable, matters related to going concern. In addition, they are responsible for financial reporting based on the going concern basis of accounting, provided no actual or legal circumstances conflict therewith.

Furthermore, the executive directors are responsible for the preparation of the management report that, as a whole, provides an appropriate view of the Company's position and is, in all material respects, consistent with the annual financial statements, complies with German legal requirements and appropriately presents the opportunities and risks of future development. In addition, the executive directors are responsible for such arrangements and measures (systems) as they have considered necessary to enable the preparation of a management report that is in accordance with the applicable German legal requirements, and to be able to provide sufficient appropriate evidence for the assertions in the management report.

The Supervisory Board is responsible for overseeing the Company's financial reporting process for the preparation of the annual financial statements and of the management report.

Auditor's responsibilities for the audit of the annual financial statements and of the management report

Our objectives are to obtain reasonable assurance about whether the annual financial statements as a whole are free from material misstatement, whether due to fraud or error, and whether the management report as a whole provides an appropriate view of the Company's position and, in all material respects, is consistent with the annual financial statements and the knowledge obtained in the audit, complies with the German legal requirements and appropriately presents the opportunities and risks of future development, as well as to issue an auditor's report that includes our opinions on the annual financial statements and on the management report.

Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with Sec. 317 HGB and in compliance with German Generally Accepted Standards for Financial Statement Audits promulgated by the Institut der Wirtschaftsprüfer (IDW) will always detect a material misstatement. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these annual financial statements and this management report.

We exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the annual financial statements and of the management report, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinions. The risk of not detecting a material misstatement resulting from fraud is higher than the risk of not detecting a material misstatement resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit of the annual financial statements and of arrangements and measures relevant to the audit of the management report in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control and of such arrangements and measures.
- Evaluate the appropriateness of accounting policies used by the executive directors and the reasonableness of estimates made by the executive directors and related disclosures.
- Conclude on the appropriateness of the executive directors' use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Company's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in the auditor's report to the related disclosures in the annual financial statements and in the management report or, if such disclosures are inadequate, to modify our respective opinions. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Company to cease to be able to continue as a going concern.

- Evaluate the overall presentation, structure and content of the annual financial statements, including the disclosures, and whether the annual financial statements present the underlying transactions and events in a manner that the annual financial statements give a true and fair view of the assets, liabilities, financial position and financial performance of the Company in compliance with German legally required accounting principles.
- Evaluate the consistency of the management report with the annual financial statements, its conformity with [German] law, and the view of the Company's position it provides.
- Perform audit procedures on the prospective information presented by the executive directors in the management report. On the basis of sufficient appropriate audit evidence we evaluate, in particular, the significant assumptions used by the executive directors as a basis for the prospective information, and evaluate the proper derivation of the prospective information from these assumptions. We do not express a separate opinion on the prospective information and on the assumptions used as a basis. There is a substantial unavoidable risk that future events will differ materially from the prospective information.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

Cologne, March 10, 2025

EY GmbH & Co. KG

Wirtschaftsprüfungsgesellschaft

Schlebusch	Weigel
Wirtschaftsprüfer	Wirtschaftsprüfer
[German Public Auditor]	[German Public Auditor]

20 FINANCIAL INFORMATION OF CUREVAC

The following documents which have been published previously shall be incorporated by reference in, and form part of, this Prospectus to the extent set out in the table below:

(i) the unaudited interim condensed consolidated financial statements of CureVac N.V. prepared in accordance with IFRS Accounting Standards as issued by the International Accounting Standards Board (IASB) applicable to interim financial reporting (IAS 34) as of June 30, 2025 and December 31, 2024 and for three and six months ended June 30, 2025 and 2024; and

(ii) the audited consolidated financial statements of CureVac N.V. prepared in accordance with International Financial Reporting Standards as issued by the International Accounting Standards Board as of December 31, 2024 and 2023 and for the years ended December 31, 2024, 2023 and 2022 and the reports of independent registered public accounting firm thereon.

The historical financial information of CureVac included in these documents is incorporated by reference in this Prospectus on a voluntary basis.

Any information referred to in the documents incorporated by reference not specifically set out in the table below but included in these documents is either not relevant for an investor or is covered elsewhere in this Prospectus and shall therefore not be deemed to be included in this Prospectus.

Copies of all documents set out in the table below are viewable on, and obtainable free of charge from, the website of the SEC as per the hyperlinks set out below each such document.

For the avoidance of doubt, any information contained in the aforementioned website (other than the information incorporated by reference in this Prospectus) does not form part of this Prospectus and has not been scrutinised or approved by BaFin.

		Incorporated Page(s)
20.1	**Unaudited Interim Condensed Consolidated Financial Statements of CureVac N.V. prepared in accordance with IFRS Accounting Standards as issued by the International Accounting Standards Board (IASB) applicable to interim financial reporting (IAS 34) as of June 30, 2025 and December 31, 2024 and for three and six months ended June 30, 2025 and 2024 included as Exhibit 99.1 to Form 6-K furnished with the SEC on August 15, 2025** Available at: https://www.sec.gov/Archives/edgar/data/1809122/000141057825001834/cvac-20250630xex99d1.htm	Exhibit 99.1 in its entirety
20.2	**Audited Consolidated Financial Statements of CureVac N.V. prepared in accordance with International Financial Reporting Standards as issued by the International Accounting Standards Board as of December 31, 2024 and 2023 and for the Years Ended December 31, 2024, 2023 and 2022 included in CureVac N.V.'s Annual Report on Form 20-F for the fiscal year ended December 31, 2024 filed with the SEC on April 11, 2025**	
	Reports of Independent Registered Public Accounting Firm ((PCAOB ID 1021))	F-3
	Report of Independent Registered Public Accounting Firm (PCAOB ID 01251)	F-7
	Consolidated Statements of Operations and Comprehensive Income (Loss) for the Fiscal Years Ended December 31, 2024, 2023 and 2022	F-8

Consolidated Statements of Financial Position as of December 31, 2024 and 2023	F-9
Consolidated Statements of Changes in Shareholders' Equity for the Fiscal Years Ended December 31, 2024, 2023 and 2022	F-10
Consolidated Statements of Cash Flows for the Fiscal Years ended December 31, 2024, 2023 and 2022	F-11
Notes to the Consolidated Financial Statements	F-12–F-47
Available at: https://www.sec.gov/ix?doc=/Archives/edgar/data/0001809122/000141057825000692/cvac-20241231x20f.htm#ITEM18FinancialStatements_475615	

Following completion of the acquisition of CureVac, BioNTech will consolidate CureVac and its subsidiaries. The acquisition will be accounted for in accordance with IFRSs and in particular, with IFRS 3 *Business Combinations*, under which the transaction qualifies as a business combination, since the acquisition of CureVac by BioNTech fulfills the definition of the acquisition of a business. On the date of the acquisition, the identifiable assets acquired and liabilities assumed of CureVac will be recorded by BioNTech at their respective acquisition-date fair values. We have started the process of performing a preliminary allocation of the estimated total consideration payable for the acquisition of CureVac to the identifiable assets to be acquired and liabilities to be assumed based on their estimated fair values as of the future completion date of the acquisition in accordance with IFRS 3 *Business Combinations*. Given that this Prospectus is published prior to completion of the acquisition, the identification of CureVac's identifiable assets to be acquired and liabilities to be assumed, and the purchase price allocation thereto, is ongoing and will not be finalized prior to completion of the acquisition. Other potential related impacts may be identified as part of accounting for the Transactions. Therefore, the historical financial information of CureVac included in the aforementioned documents as incorporated by reference in this Prospectus may not be indicative of the assets and liabilities we will record in our consolidated financial statements following completion of the Transactions.

21 THE PURCHASE AGREEMENT

[Filed as Annex A to BioNTech's Registration Statement on Form F-4 (Registration No. 333-289468) filed with the U.S. Securities and Exchange Commission]

22 FORM OF TENDER AND SUPPORT AGREEMENT

[Filed as Annex B to BioNTech's Registration Statement on Form F-4 (Registration No. 333-289468) filed with the U.S. Securities and Exchange Commission]

23 FORM OF DEPOSIT AGREEMENT

[Filed as Exhibit 4.1 to BioNTech's Registration Statement on Form F-4 (Registration No. 333-289468) filed with the U.S. Securities and Exchange Commission]

24 RECENT DEVELOPMENTS AND OUTLOOK

24.1 Recent Developments

24.1.1 Operative Developments

On August 7, 2025, we entered into the GSK/CureVac Settlement Arrangements, see section "*11.12.1.4 Settlement Arrangements with GSK and CureVac*".

24.1.2 Corporate Developments

With effect as of July 1, 2025, the Supervisory Board appointed Ramón Zapata to the Management Board as Chief Financial Officer (CFO). Ramón Zapata took over the CFO role from Jens Holstein, who retired at the end of his term.

On September 30, 2025, Ryan Richardson stepped down as Chief Strategy Officer and member of the Management Board of the Company and as a Board Director at affiliated companies of the BioNTech Group by mutual agreement to pursue new professional opportunities.

24.2 Outlook

Certain statements in this section, including, in particular the expectations and targets, constitute forward-looking statements. These forward-looking statements are not guarantees of future financial performance, and the Group's actual results could differ materially from those expressed or implied by these forward-looking statements as a result of many factors, including but not limited to those described under "2.5 Forward-Looking Statements" and "1 Risk Factors".

Statements in this section do not take into account any effects resulting from the contemplated business combination with CureVac.

We are part of the pharmaceutical and biotechnology industry, which is characterized nationally and internationally by its strength in innovation. The growth prospects for the sector are seen as good, driven by its independence from economic cycles, global demographic change, and medical and technological progress. The global market for cancer immunotherapies was estimated at $12.2 billion in 2024, according to The Business Research Company, and is forecast by The Business Research Company to grow at a compound annual growth rate of 15% to around $31.3 billion by 2030. The growth during this period can be further attributed to the increasing prevalence of cancer, the increasing acceptance of immunotherapy over traditional therapy, the growing research and development activities to develop targeted therapies for specific diseases, the increasing efficacy and accuracy of newer therapies, and the increasing recognition of the limitations of traditional cancer therapies.

Based on our proprietary mRNA technology, we were the first company in the world to develop a highly effective and safe vaccine against COVID-19 in compliance with scientific standards within a year and then to successfully market it globally together with our collaboration partners. This illustrates our ability to develop and market medicines and therapies based on innovative technologies that can provide added value for patients and society.

We intend to continue to work with Pfizer to create the conditions to flexibly adapt the vaccine to other potential future mutations as necessary, to continuously optimize the formulations, and to make the product available to other patient groups by expanding the indications. We are preparing for global commercial roll-out of a new variant-adapted COVID-19 vaccine, subject to approvals from the relevant healthcare authorities.

In addition to COVID-19 vaccine-related revenues, we plan to generate further sources of income, including from the framework agreement signed with the Federal Republic of Germany on pandemic preparedness, the production and supply of mRNA-based vaccines, and revenues from external sales by our subsidiaries InstaDeep Ltd, JPT Peptide Technologies GmbH, and BioNTech Individualized mRNA Manufacturing GmbH. Further, we have expanded our partnership with the UK Government to broaden our regional research and development activities with plans to invest up to £1 billion over the next decade (see section "*9.6.2 Current and Future Capital Expenditures*").

With the successful production and marketing of our COVID-19 vaccine, we have built up a great deal of expertise and a global network to develop, produce, and market products worldwide. Our future earnings potential will depend heavily on the development of the clinical pipeline and responsible use of the financial resources generated. We have a broadly diversified portfolio of product candidates based on a cross-platform approach to technology. They form the basis for our strategy of developing innovative combination therapies. We intend to reinvest the proceeds from the sale of our COVID-19 vaccine in our advanced clinical candidates.

Under our collaboration with BMS, we aim to jointly develop and commercialize BNT327 (see "*11.3.2.1.3 Antibody Product Candidates in Oncology*"), including the development of BNT327 as monotherapy and in combination with other products.

As part of the agreement with BMS, BioNTech expects to receive $1.5 billion in an upfront cash payment this financial year 2025, and for this payment to be reflected in the Company's reported cash position as of the third quarter 2025. BioNTech also expects to receive $2.0 billion in total non-contingent anniversary cash payments from 2026 through 2028. The upfront and non-contingent cash payments, amounting to $3.5 billion, are expected to be recognized as revenues over the development phase of BNT327. In addition, BioNTech will be eligible to receive up to $7.6 billion in development, regulatory and commercial milestones, with the majority of milestone payments expected to be triggered upon approvals and during commercialization. All milestones payments are anticipated to be reflected in the Company's cash position and to be recognized as revenues following milestone achievement. Under the agreement, BioNTech and BMS will share joint development and manufacturing costs of BNT327 on a 50:50 basis, subject to certain exceptions. Global profits and losses will be equally shared between BioNTech and BMS. These statements, including the anticipated timing of certain events, are based on BioNTech's current expectations regarding the BMS collaboration and are subject to the successful co-development, approval and co-commercialization of BNT327. These statements are also based in part on assumptions and judgments that the Company has made, which may be subject to significant uncertainties. Although the Company's approach to revenue recognition is based on facts and circumstances known to the Company and various other assumptions that the Company believes to be reasonable under the circumstances, the revenue assessment is ongoing, and its actual results may deviate from its current expectations. Revenues of initially constrained milestone payments may be recognized at the point of satisfaction or over time, including catch-up effects for prior periods as applicable.

For the financial year 2025, we expect operating investments in property, plant, and equipment and intangible assets of between €250.0 million and €350.0 million, not considering any investments made by CureVac following potential successful completion of the Offer. This includes expenditure for the expansion and improvement of our research and development and certain of our manufacturing facilities, as well as further investments in IT infrastructure that will support the Group in its bio-digital transformation and our focus as a data-driven company.

Based on our management's current knowledge about the business development of the Group since December 31, 2024 as well as the assumptions made, and the factors taken into account, by our management in arriving at our Profit Forecast 2025 (as set forth in section "*10 Profit Forecast*"), we currently expect (i) our revenues to amount to between €1.7 billion and €2.2 billion, (ii) our research and development expenses to amount to between €2.6 billion and €2.8 billion, (iii) our sales, general and administrative expenses to amount to between €650.0 million and €750.0 million and (iv) to incur a net loss in the financial year 2025.

In Germany and the United States, new tax legislation has been proposed, which is aimed at reducing corporate income tax rates.

We aim to further advance our oncology pipeline with the aim of launching our first oncology product on the market as early as 2026 and establishing ourselves as an innovative oncology company with several approved products in various indications by 2030.

25 GLOSSARY

This glossary contains a short description of technical terms and certain other terms and abbreviations used in the Prospectus.

25.1 Key technical terms

The following is a short description of key technical terms used throughout the Prospectus.

Term	Explanation
ADC (Antibody-Drug Conjugate)	A targeted cancer therapy that links a monoclonal antibody to a drug, delivering the drug directly to cancer cells.
Adjuvant (treatment)	Additional treatment given after the primary treatment to lower the risk of the cancer returning.
Adoptive T-cell therapy	A treatment that uses T cells (a type of immune cell) taken from a patient, modified or expanded in the lab, and then returned to the patient to fight disease.
Adverse Event (AE) / Treatment Emergent Adverse Event (TEAE)	The side effect of a treatment during clinical trials is called an Adverse Event. TEAEs are those that emerge during treatment. They are graded on a scale from 1 to 5, from Grade 1 being the lowest until Grade 5 being the highest.
Agonist	A drug or substance that binds to a receptor inside a cell or on its surface and causes the same action as the substance that normally binds to the receptor
androgen deprivation therapy	Hormone therapy or androgen deprivation therapy uses medicines to reduce testosterone levels and treat prostate cancer:
Antigen	A substance which induces an immune response.
Antigen-presenting cells	Immune cells that display antigens on their surface to help trigger an immune response.
Biologics License Application (BLA)	A request for permission to introduce, or deliver for introduction, a biologic product into interstate commerce in the U.S.
Bispecific antibody	An engineered antibody that can bind to two different antigens at the same time, potentially increasing therapeutic effectiveness.
Breakthrough Therapy Designation	An FDA program to expedite the development and review of drugs that show substantial improvement over existing therapies.
Cell therapy	Treatment in which living cells are injected, grafted, or implanted into a patient to treat a disease.
Cemiplimab	A monoclonal antibody medication for cancer treatment.

Checkpoint inhibitor	A drug that blocks proteins used by cancer cells to avoid being attacked by the immune system, helping immune cells to destroy cancer.
Chimeric Antigen Receptor (CAR-T) cell therapy	A type of cell therapy where T cells are modified to recognize and attack cancer cells.
Clinical trial phases (Phase 1, 2, 3, 4)	Stages of testing new drugs or therapies in humans: Phase 1 trials are concerned primarily with establishing a new drug's safety and dose range. Phase 2 trials determine the effectiveness of an experimental drug in a particular disease or condition. Phase 3 is conducted with a large number of patients for whom the drug is intended to measure the drug's safety and efficacy. Phase 4 relates to a post-approval conduct of additional clinical trials to further assess the product candidate's safety and/or effectiveness after approval.
Concomitant	Giving two or more treatments (such as vaccines) at the same time.
Cytokine	Small proteins released by cells that contribute to regulate immune response and communications between cells.
De novo response	Immune response that arises newly and specifically in response to a given antigen.
disease control rate (DCR)	Refers to the percentage of patients with advanced cancer whose therapeutic intervention has led to a complete response, partial response, or stable disease for a defined period.
Docetaxel	A chemotherapy medication.
duration of response (DOR)	DOR is defined as the duration from the onset of the first response to disease progression or death for any reason:
EGFR	Epidermal growth factor receptor.
Emergency Use Authorization (EUA)	A mechanism by which the FDA allows the use of unapproved medical products in an emergency to diagnose, treat, or prevent serious diseases.
Epitope	An epitope is a small area (molecular segment) on the surface of an antigen that can elicit a specific immune response:
Fast Track Designation	A process designed by the FDA to speed up the review of drugs that treat serious or life-threatening conditions and fill an unmet medical need.
GMP (Good Manufacturing Practice)	Regulations that require manufacturers to ensure products are consistently produced and controlled according to quality standards.
GMP-certified	A facility or process that meets Good Manufacturing Practice standards, ensuring quality and safety in drug production.

HER3	Human epidermal growth factor receptor 3.
Immunogenicity	The ability of a substance, such as a vaccine or drug, to provoke an immune response.
Immunomodulator	A substance that modifies or modulates the immune system, e.g. designed to modulate the immune system's response to cancer.
Immunotherapy	A type of treatment that targets the body's own immune system to fight diseases, including cancer and infectious diseases.
Innate and adaptive immune responses	The two main parts of the immune system: innate is the immediate, non-specific response; adaptive is the slower, targeted response that develops memory.
Lipid nanoparticle (LNP)	Tiny particles made of lipids (fats) used to deliver mRNA or other drugs into cells.
Lipoplex (LPX)	A complex of lipids and nucleic acids (like mRNA) used to deliver genetic material into cells.
Major Histocompatibility Complex (MHC)	Proteins on cell surfaces that present antigens to T cells, essential for immune recognition.
Medicaid	Medicaid is a government program in the United States that provides health insurance for adults and children with limited income and resources. Medicaid is administered by states, according to federal requirements. The program is funded jointly by states and the federal government.
Medicare	Medicare is a federal health insurance program in the United States for people age 65 or older and younger people with disabilities. Medicare is divided into four parts: A, B, C and D. Part A covers hospital, skilled nursing, and hospice services. Part B covers outpatient services. Part D covers self-administered prescription drugs. Part C is an alternative that allows patients to choose private plans with different benefit structures that provide the same services as Parts A and B, usually with additional benefits.
Metastatic cancer	Cancer that spreads from its site of origin to another part of the body.
Monoclonal antibody	Laboratory-made molecules that can bind to specific targets (antigens) in the body, often used to treat cancer and other diseases.
Monovalent vaccine	A vaccine designed to immunize against a single antigen or single microorganism.
mRNA (messenger ribonucleic acid)	mRNA is a type of RNA that carries genetic information required to make specific proteins.

Neoantigen	A new antigen that arises from mutations in cancer cells, not present in normal cells, and can be targeted by the immune system.
Neoantigen prediction	The use of computational methods to identify new antigens created by mutations in cancer cells that can be targeted by immunotherapies.
Nucleoside-modified messenger RNA	A form of messenger RNA in which certain nucleosides are chemically modified, e.g. to improve stability of the RNA or reduce immune reactions.
Objective Response Rate (ORR)	The proportion of patients whose cancer shrinks or disappears after treatment.
Overall Survival (OS)	The length of time from diagnosis or start of treatment that patients are still alive.
Pembrolizumab	An approved drug: a humanized antibody used in cancer immunotherapy that targets an important molecule on immune cells (PD-1).
Pharmacodynamics	The study of the effects of a drug on the body.
Pharmacokinetics	The study of how a drug moves through the body (absorption, distribution, metabolism, and excretion).
Polyclonal Residual Disease	A condition in which multiple genetically distinct cancer cell populations remain in the body after treatment.
Polyepitopic response	An immune response targeting multiple parts, or epitopes, of a virus or cancer cells.
Polyplex (PLX)	Nanoparticles formed by binding mRNA to polymers, used for drug delivery.
Progression-Free Survival (PFS)	A clinical endpoint measuring the lengths of time from the start of the treatment until disease progression or death from any cause.
proprietary RNA-lipoplex nanoparticles	A specialized formulation developed by BioNTech in which mRNA is embedded between lipid layers, protecting it from degradation and enabling targeted delivery to antigen-presenting cells in the body. It is used in platforms like FixVac and iNeST for cancer immunotherapy.
radical prostatectomy	Surgical procedure to remove the entire prostate gland and some surrounding tissue, typically performed to treat localized prostate cancer.
RMAT (Regenerative Medicine Advanced Therapy) designation	A special status from the FDA to expedite the development and review of promising regenerative medicine therapies.
RNAse	Ribonuclease; an enzyme that breaks down RNA molecules.

Self-amplifying mRNA (saRNA)	A type of mRNA that can replicate itself inside cells, allowing for lower doses in vaccines or therapies.
T-cell receptor (TCR) therapy	Therapies in which the patient's T cells are modified or primed to target cancer-specific antigens.
Time to response	The time from the start of treatment in a clinical trial to when a patient first shows a measurable improvement, such as tumor shrinkage.
Toll-like receptor 7 (TLR7)	A receptor in the immune system that detects viral genetic material and helps trigger immune responses.
Trans-amplifying mRNA (taRNA)	A system where one mRNA encodes a replicase enzyme that can amplify other mRNAs, allowing for the production of multiple proteins from a single delivery.
Translational (as in "translational drug discovery")	The process of turning basic scientific research (often from the laboratory) into practical applications, such as new treatments or drugs for patients.
Unresectable	Describes a tumor that cannot be removed completely through surgery.
Uridine-RNA	RNA that contains uridine, one if its natural building blocks.

25.2 Definitions and Abbreviations

The following table contains a selection of defined terms used throughout the Prospectus

Term	Meaning
$	As defined in 2.9
€	As defined in 2.9
2008 Cooperation Agreement	As defined in 11.7.3.5
AACR	As defined in 11.3.2.1.1
ACA	As defined in 1.1.15
Acceptance Time	As defined on the front page
Activity Enhancement Option	As defined in 11.6.2.1
Acuitas	As defined in 1.5.2
Acuitas License Agreement	As defined in 11.7.3.1

ADCs	As defined in 9.1
ADR	As defined in 4.1.1
ADR Tax Circular	As defined in 18.1
ADSs	As defined in 1
adverse recommendation change termination	As defined in 3.2.6.1
AEFIs	As defined in 12.6.1
AI	As defined in 9.1
Allocation Financial Year	As defined in 17.5.2.2.2
Alnylam	As defined in 11.12.1.5
Alnylam Settlement Agreement	As defined in 11.12.1.5
alternative post-offer measure	As defined in 3.1.2.14
AMA	As defined in 12.8
America Invents Act	As defined in 1.6.2
American Depositary Receipt	As defined in 4.1.1
American Depositary Shares	As defined in 1
APA	As defined in 1.8.1
APMs	As defined in 2.10
Arbutus	As defined in 1.6.2
Articles of Association	As defined in 1.10.3
ASCO	As defined in 11.3.2.1.1
ATMPs	As defined in 1.7.10
AU	As defined in 12.8
Audited Annual Financial Statements	As defined in 2.7
Audited Consolidated Financial Statements	As defined in 2.7

Audited Consolidated Financial Statements 2022	As defined in 2.7
Audited Consolidated Financial Statements 2023	As defined in 2.7
Audited Consolidated Financial Statements 2024	As defined in 2.7
Authorization 2017/2019	As defined in 16.4.2
Authorization 2021	As defined in 16.4.2
Authorization 2024	As defined in 16.4.2
Autolus	As defined in 11.2.3.4
Autolus ADSs	As defined in 11.6.2.2
Autolus Letter Agreement	As defined in 11.6.2.2
Autolus License	As defined in 11.6.2.1
Autolus License Agreement	As defined in 11.6.2.1
Autolus Options	As defined in 11.6.2.1
Autolus Ordinary Shares	As defined in 11.6.2.2
Autolus Private Placement	As defined in 11.6.2.2
Autolus Purchase Agreement	As defined in 11.6.2.2
BaFin	As defined in 2.4
Bayh-Dole Act	As defined in 1.6.7
Belgium	As defined in 1.6.2
BICR	As defined in 11.3.2.1.1
Binder Licensed Products	As defined in 11.6.2.1
Binder Option	As defined in 11.6.2.1
BioNTainer	As defined in 1.4.2
BioNTech	As defined in 1, 10.1
BioNTech ADS VWAP	As defined on the front page

BioNTech ADSs	As defined in 1
BioNTech breach termination	As defined in 3.2.6.1
BioNTech Commercialization Territory	As defined in 11.6.8
BioNTech Group	As defined in 1, 10.1
BioNTech IMFS	As defined in 11.5
BioNTech RNA	As defined in 11.5.2.1.3
Biotheus	As defined in 1.2.2
Bispecific Checkpoint Modulator Filings	As defined in 11.7.2.3
BLA	As defined in 1.3.1
BMS	As defined in 11.2.3.3
BMS Agreement	As defined in 11.6.1
BMWE	As defined in 1.10.7
BNT162b2 Platform Filings	As defined in 11.7.2.1.5
BPCIA	As defined in 1.7.8
buyer material adverse effect	As defined in 3.2.3.2
cancellation	As defined in 3
cancellation consideration	As defined in 1.9.3
capital expenditures for operating activities	As defined in 2.10.2
CAR	As defined in 11.3.2.1.2
CAR-T	As defined in 1.7.10
CAR-T/TCR Filings	As defined in 11.7.2.2.1
CAT	As defined in 12.3.2
CBER	As defined in 1.7.9
CC	As defined in 11.3.2.1.3

ccRCC	As defined in 11.3.2.1.3
CDC	As defined in 12.6.1
CDK4/6	As defined in 11.3.2.1.3
CE Mark	As defined in 1.7.3
CellScript	As defined in 1.5.2
CEPI	As defined in 11.2.3.3
China	As defined in 1.6.15
CHMP	As defined in 11.3.1.4
CISO	As defined in 11.8.2
Claudin-Specific CAR-T Cell Filings	As defined in 11.7.2.2.1
CLDN6	As defined in 11.3.2.1.1
Clearstream	As defined in 4.2.2
CMC	As defined in 1.3.1
CMOs	As defined in 1.3.9
CMS	As defined in 1.1.2
Code	As defined in 3.2.4.13
Collaboration Results	As defined in 11.7.3.5.3
Company	As defined in 1, 10.1
company material adverse effect	As defined in 3.2.3.1
company termination compensation	As defined in 3.2.6.2
Company's Boards	As defined in 3
condition failure termination	As defined in 3.2.6.1
Conditional Capital ESOP 2021	As defined in 16.4.2
Conditional Capital ESOP 2024	As defined in 16.4.2

Conditional Capital ESOP 2027/2019	As defined in 16.4.2
Conditional Capital WSV 2024	As defined in 16.4.2
COO	As defined in 11.8.2
Corporate Governance Code	As defined in 17.3.1
cORR	As defined in 11.3.2.1.3
CPS	As defined in 11.3.2.1.3
CRC	As defined in 11.3.2.1.1
CROs	As defined in 1.3.1
ctDNA	As defined in 11.3.2.1.1
CTIS	As defined in 12.3.1
CTLA-4	As defined in 11.3.2.1.3
CureVac	As defined on the front page
CureVac Boards	As defined in 1.9.7
CureVac Disclosure Letter	As defined in 3.2.4.1
CureVac FMV	As defined in 18.2.2.2.2
CureVac Group	As defined in 1.8.1
CureVac IP	As defined in 1.6.2
CureVac option	As defined in 3.1.2.6.4
CureVac PSU	As defined in 3.1.2.6.2
CureVac RSU	As defined in 3.1.2.6.3
CureVac Shareholders	As defined on the front page
CureVac Shares	As defined on the front page
CureVac VSOP awards	As defined in 3.1.2.6.1
DCC	As defined in 3

DCGC	As defined in 3.1.1.7
DCR	As defined in 11.3.2.1.1
DCs	As defined in 11.3.2.1.1
DE`123	As defined in 11.12.2.1.2
DE`130	As defined in 11.12.2.1.2
deposited securities	As defined in 4.1.1
Deloitte	As defined in 1.8.1
Development Results	As defined in 11.7.3.5.1
DFS	As defined in 11.3.2.1.1
dievini	As defined in 3
dievini TSA	As defined in 3.3
DOJ	As defined in 3.1.2.16
DOR	As defined in 11.3.2.1.1
DRS	As defined in 4.1.17
DSMB	As defined in 1.3.2
dsRNA	As defined in 11.3.3.1
DTC	As defined in 3.1.2.7
DualityBio	As defined in 11.2.1.1
DualityBio Agreements	As defined in 11.6.3
DualityBio IP	As defined in 11.6.3
DualityBio Products	As defined in 11.6.3
DualityBio Retained Territory	As defined in 11.6.3
Dutch PE Holder	As defined in 1.9.33.1.2.14
Dutch Resident Holder	As defined in 1.9.33.1.2.14

Dutch WHT Confirmation	As defined in 3.1.2.14
EEA	As defined in 2.3
EGM	As defined in 3
EGM termination	As defined in 3.2.6.1
ELCC	As defined in 11.3.2.1.3
EMA	As defined in 1.2.3
EP’122	As defined in 11.12.2.1.1
EP’565	As defined in 11.12.2.2.1
EP’668	As defined in 11.12.2.1.1
EP’755	As defined in 11.12.2.1.2
EP’949	As defined in 11.12.2.2.1
EpCAM	As defined in 11.3.2.1.3
EPO	As defined in 1.6.2
ESG	As defined in 1.3.21
ESG Targets	As defined in 17.5.2.2.1
ESMA	As defined in 2.10
ESMA Guidelines	As defined in 2.10
ESMO	As defined in 11.3.2.1.1
ES-SCLC	As defined in 11.3.2.1.3
ETASU	As defined in 12.2.4
EU	As defined in 1.1.7
EU Commission	As defined in 1.8.1
EU AI Act	As defined in 12.13.2
EUAs	As defined in 9.2.4

EUD	As defined in 12.3.4
EUR	As defined in 2.9
euro	As defined in 2.9
Exchange Act	As defined in 1.2.9
Exchange Agent	As defined in 3
Exchange Ratio	As defined on the front page
Expiration Time	As defined on the front page
EY	As defined in 14.5
FDA	As defined in 1.1.11
FDASIA	As defined in 12.2.5
FDCA	As defined in 12.2
financial year 2022	As defined in 2.8
financial year 2023	As defined in 2.8
financial year 2024	As defined in 2.8, 10.3.2.1.1
financial year 2025	As defined in 2.8, 10.1
Fiscally Recognized Capital	As defined in 18.2.2.2.2
FixVac Platform Filings	As defined in 11.7.2.1.6
Fosun Agreement	As defined in 11.6.4
Fosun Pharma	As defined in 11.3.1
France	As defined in 11.3.2.1.3
FSMA	As defined in 3.1.4.3
FSR Regulation	As defined in 3.1.2.17
FTC	As defined in 3.1.2.16
Fund	As defined in 11.12.1.2

GAAP	As defined in 3.1.1.6
Ganymed	As defined in 11.7.3.5
Ganymed Field of Use	As defined in 11.7.3.5.1
GCP	As defined in 1.1.13
GDPR	As defined in 1.3.3
Genentech	As defined in 11.2.1.1
Genentech Collaboration Agreement	As defined in 11.6.5.1
Genentech Collaboration Products	As defined in 11.6.5.1
Genentech Manufacturing Agreement	As defined in 11.6.5.2
Genevant	As defined in 1.6.2
Genevant License Agreement	As defined in 11.12.2.4
Genmab	As defined in 11.2.1.1
Genmab Agreement	As defined in 11.6.6
Genmab Agreement Field	As defined in 11.6.6
Germany	As defined in 1.1.3
GMP	As defined in 1.1.13
governance resolutions	As defined in 3
Group	As defined in 1, 10.1
GSK	As defined in 1.6.2
GSK TSA	As defined in 3.3
GSK/CureVac Settlement Arrangements	As defined in 11.12.1.4
Hatch-Waxman Amendments	As defined in 1.6.5
HCC	As defined in 11.3.2.1.3
HER2	As defined in 11.3.2.1.3

HGB	As defined in 2.7
HGR	As defined in 12.6.1
HHS	As defined in 1.1.2
HIPAA	As defined in 1.7.14
HNSCC	As defined in 11.3.2.1.1
HPV16+	As defined in 11.3.2.1.1
HSR Act	As defined in 3.1.2.16
HSV	As defined in 11.2.1.2
IFRSs	As defined in 2.7
IHC	As defined in 11.3.2.1.3
IMM	As defined in 12.2.6
INDs	As defined in 1.3.7
iNeST	As defined in 1.7.10
iNeST mRNA Platform Filings	As defined in 11.7.2.1.6
Initial ADSs	As defined in 11.6.2.2
Initial Closing	As defined in 11.6.2.2
InstaDeep	As defined in 1.1.10
InstaDeep SPA	As defined in 11.13.2
IO	As defined in 11.3.2.1.1
IP	As defined in 1.1.1
IRA	As defined in 1.1.2
IRBs	As defined in 1.3.2
ISMS	As defined in 11.8.1
ISMS Committee	As defined in 11.8.2

ISO	As defined in 11.8.2
ISS	As defined in 17.5.2.2.1
JCC	As defined in 11.6.1
JDP	As defined in 11.6.1
KfW	As defined in 3.1.1.7
KfW	As defined in 3.1.1.7
KfW TSA	As defined in 3.3
LB.1	As defined in 11.3.1.3
LCA Products	As defined in 11.6.6
Legal downstream merger	As defined in 3
LEI	As defined in 2.1
Licensed Products	As defined in 11.12.1.4
LkSG	As defined in 11.11.2
LNPs	As defined in 1.6.2
LPX	As defined in 11.3.3.3.1
LSU	As defined in 11.7.2.1.1
LSU Agreement	As defined in 11.7.3.2
LTI	As defined in 17.5.2
MAA	As defined in 1.3.1
MabVax Filings	As defined in 11.7.2.3
MAH	As defined in 12.6.1
Management Board	As defined in 1.2.10, 10.1
Manufacturing Transfer	As defined in 11.6.1
mCRPC	As defined in 11.3.2.1.3

mDOR	As defined in 11.3.2.1.3
MediLink Therapeutics	As defined in 11.2.1.1
Merger Agreement	As defined in 11.13.1
MHRA	As defined in 11.3.1.4
Minimum Condition	As defined in 3
Minority Shareholders	As defined in 3
MIUC	As defined in 11.3.2.1.1
ML	As defined in 9.1
Moderna	As defined in 1.6.2
modRNA	As defined in 11.3.3.2.2
Mono/PD-1/SOC Combinations	As defined in 11.6.7
mPFS	As defined in 11.3.2.1.1
MPM	As defined in 11.3.2.1.3
mRNA Lipid Nanoparticle/Polyplex Filings	As defined in 11.7.2.1.2
mRNA Lipoplex Filings	As defined in 11.7.2.1.2
mRNA Manufacturing Filings	As defined in 11.7.2.1.3
mRNA Structure Filings	As defined in 11.7.2.1.1
MRT	As defined in 11.7.2.1.1
MRT-CellScript Sublicenses	As defined in 11.7.2.1.1
Nasdaq	As defined in 1.2.9
nccRCC	As defined in 11.3.2.1.3
NDA	As defined in 1.3.1
NEN	As defined in 11.3.2.1.3
Neoantigen Filings	As defined in 11.7.2.1.6

Neon	As defined in 11.7.2.1.6
Netherlands	As defined in 1.6.2
New Topco	As defined in 1.9.3
New Topco A Shares	As defined in 1.9.3
New Topco B Shares	As defined in 3
New Topco U.S. election	As defined in 3
NIAID	As defined in 11.7.3.4
NIH	As defined in 1.6.6
NIH License Agreement	As defined in 11.7.3.4
NIP	As defined in 12.6.1
NMPA's	As defined in 12.6.1
NOL	As defined in 1.2.5
NSCLC	As defined in 11.3.2.1.1
Offer	As defined on the front page
Offer ADSs	As defined on the front page
Offer Consideration	As defined on the front page
OncoC4	As defined in 11.2.1.1
OncoC4 Agreement	As defined in 11.6.7
OncoC4 Field	As defined in 11.6.7
OncoC4 Licensed Compounds	As defined in 11.6.7
OncoC4 Licensed Products	As defined in 11.6.7
OncoC4 Other Combinations	As defined in 11.6.7
OncoC4 Territory	As defined in 11.6.7
Option Exercise Date	As defined in 17.5.2.2.2

Option Issue Date	As defined in 17.5.2.2.2
Option Performance Period	As defined in 17.5.2.2.2
ORF	As defined in 11.3.3.1
Original BMS Agreement	As defined in 11.6.1
ORR	As defined in 11.3.2.1.1
OS	As defined in 11.3.2.1.1
our	As defined in 1, 10.1
outside date termination	As defined in 3.2.6.1
Patent Pledge	As defined in 11.12.2.2.2
PBMCs	As defined in 11.7.2.2.2
PDAC	As defined in 11.3.2.1.1
PDUFA	As defined in 12.2.4
Pfizer	As defined in 1.1.3
Pfizer Agreement	As defined in 1.1.3
Pfizer Collaboration Territory	As defined in 11.6.8
Pfizer Corona Field	As defined in 11.6.8
PFS	As defined in 11.3.2.1.1
Phase 1	As defined in 12.2.2
Phase 2	As defined in 12.2.2
Phase 3	As defined in 12.2.2
Phase 4	As defined in 12.2.2
PHSA	As defined in 12.2
PLX	As defined in 11.3.3.3.3
PMA	As defined in 1.7.3

post-downstream merger share sale	As defined in 3
post-offer reorganization	As defined in 3
PRIME	As defined in 11.3.2.1.2
Private Placement ADSs	As defined in 11.6.2.2
PROC	As defined in 11.3.2.1.3
Profile	As defined in 4.1.17
Profit Forecast 2025	As defined in 10.1
Promosome	As defined in 1.6.2
Prospectus	As defined on the front page
Prospectus Regulation	As defined on the front page
PSA	As defined in 11.12.1.2
PSU Issue Date	As defined in 17.5.2.2.2
PSU Performance Period	As defined in 17.5.2.2.2
PSU Settlement Date	As defined in 17.5.2.2.2
PSU Target Amount	As defined in 17.5.2.2.2
PSUP	As defined in 17.5.2.2.2
PSURs	As defined in 12.3.5
PTA	As defined in 11.7.1
PTAB	As defined in 11.12.2.2.3
PTE	As defined in 11.7.1
Purchase Agreement	As defined on the front page
Purchaser termination compensation	As defined in 3.2.6.2
Q2 Unaudited Interim Condensed Consolidated Financial Statements	As defined in 2.7
Regeneron	As defined in 11.3.2.1.1

Relevant IP	As defined in 11.6.1
Relevant Member State	As defined in 3.1.4.2
REMS	As defined in 1.3.6
required resolutions	As defined in 3
Research Results	As defined in 11.7.3.5.1
restraints termination	As defined in 3.2.6.1
Reversion License	As defined in 11.6.1
RMAT	As defined in 11.3.2.1.2
RMAT designation	As defined in 12.2.6
RMP	As defined in 12.3.5
RNA-LPX	As defined in 11.3.2.1.1
Safety Issue	As defined in 11.6.1
Safety Switch Option	As defined in 11.6.2.1
sales, general and administrative expenses	As defined in 2.10.1
SaMD	As defined in 12.13.1
SAR	As defined in 9.2.4
saRNA	As defined in 11.3.3.2.3
sBLA	As defined in 11.3.1.4
SBTi	As defined in 1.3.21
SCLC	As defined in 11.3.2.1.3
SE Regulation	As defined in 1.2.9
SEAG	As defined in 4.3
SEC	As defined in 1.2.9
Securities Act	As defined in 1.10.3

Share Capital Increase	As defined in 3.1.2.9
Share Issuance	As defined in 3.1.2.9
SITC	As defined in 11.3.2.1.1
solicitation breach termination	As defined in 3.2.6.1
sqNSCLC	As defined in 3.1.1.3.1
STI	As defined in 17.5.2
Subscription Agent	As defined in 3
Subsequent ADSs	As defined in 11.6.2.2
subsequent EGM	As defined in 3
Subsequent Offering Period	As defined on the front page
superior proposal termination	As defined in 3.2.6.1
Supervisory Board	As defined in 1.2.9
T Cell Induction/Expansion Filings	As defined in 11.7.2.2.2
taRNA	As defined in 11.3.3.2.4
TCA	As defined in 12.5
TCR	As defined in 11.2.1.1
TEAEs	As defined in 11.3.2.1.1
Technology Options	As defined in 11.6.2.1
Term Sheet	As defined in 11.12.1.2
TKI	As defined in 11.3.2.1.3
TNBC	As defined in 11.3.2.1.1
TPS	As defined in 11.3.2.1.3
Transactions	As defined in 1.8.1
Treasury Regulations	As defined in 3.2.4.13

TRON	As defined in 11.7.3.5
TRON Collaboration Agreement	As defined in 11.7.3.5
TRON License Agreement	As defined in 11.7.3.5
TRON Research Agreement	As defined in 11.7.3.5
TTR	As defined in 11.3.2.1.1
U.K.	As defined in 2.2
U.K. High Court	As defined in 11.12.2.2.2
U.K. Prospectus Regulation	As defined in 2.2
U.S.	As defined in 1.1.1
U.S. dollars	As defined in 2.9
United States	As defined in 1.1.1
University Parties	As defined in 11.7.3.5.1
UPenn	As defined in 1.6.6
uRNA	As defined in 11.3.2.1.1
us	As defined in 1, 10.1
USD	As defined in 2.9
USPTO	As defined in 1.6.1
UTIs	As defined in 3.1.1.3.1
UTRs	As defined in 11.3.3.1
UW	As defined in 11.7.3.2
VAT	As defined in 1.2.6
VRBPAC	As defined in 11.3.1.4
WCLC	As defined in 11.3.2.1.1
we	As defined in 1, 10.1

WHO	As defined in 11.3.1.1
year 2022	As defined in 2.8
year 2023	As defined in 2.8
year 2024	As defined in 2.8, 10.3.2.1.1
year 2025	As defined in 2.8, 10.1

Notice to Investors and Security Holders

This document is for information purposes only and does not constitute an offer to sell or the solicitation of an offer to buy any securities nor shall there be any sale of securities in any jurisdiction in which such offer, solicitation or sale would be unlawful prior to registration or qualification under the securities laws of any such jurisdiction. In connection with the Offer, BioNTech has filed a Registration Statement on Form F-4 and amendments thereto (as so amended, the "Registration Statement") with the SEC, including an offer to exchange/prospectus (the "Exchange Offer Prospectus"), to register under the Securities Act of 1933, as amended, the issuance of BioNTech ADSs. Such Registration Statement has not yet been declared effective by the SEC. In addition, BioNTech intends to file with the SEC a tender offer statement on Schedule TO (the "Schedule TO"), which will include, as exhibits, the Exchange Offer Prospectus, a form of letter of transmittal, and other customary ancillary documents and soon thereafter CureVac will file with the SEC a solicitation/recommendation statement on Schedule 14D-9 (the "Schedule 14D-9"). The Offer has not commenced. The solicitation and offer to exchange CureVac Shares will be made only pursuant to the Schedule TO and related Exchange Offer Prospectus or the EU Prospectus or the UK exemption document (each as referred to below). This material is not a substitute for the Exchange Offer Prospectus, the Schedule TO, the Schedule 14D-9, the Registration Statement or for any other document that BioNTech or CureVac has filed or may file with the SEC and has sent or will send to CureVac's shareholders in connection with the proposed transactions.

BEFORE MAKING ANY INVESTMENT DECISION OR DECISION WITH RESPECT TO THE OFFER, WE URGE INVESTORS OF CUREVAC TO READ THE REGISTRATION STATEMENT, EXCHANGE OFFER PROSPECTUS, SCHEDULE TO (INCLUDING THE EXCHANGE OFFER PROSPECTUS, RELATED LETTER OF TRANSMITTAL, AND OTHER OFFER DOCUMENTS) AND SCHEDULE 14D-9, THE EU PROSPECTUS (IF RELEVANT), THE UK EXEMPTION DOCUMENT (IF RELEVANT), AS EACH MAY BE AMENDED OR SUPPLEMENTED FROM TIME TO TIME, AND OTHER RELEVANT DOCUMENTS CAREFULLY BECAUSE THEY CONTAIN IMPORTANT INFORMATION ABOUT BIONTECH, CUREVAC AND THE PROPOSED TRANSACTIONS THAT HOLDERS SHOULD CONSIDER.

Investors will be able to obtain free copies of the Registration Statement, Exchange Offer Prospectus, Schedule TO and Schedule 14D-9, as each may be amended from time to time, and other relevant documents filed by BioNTech and CureVac with the SEC (when they become available) at http://www.sec.gov, the SEC's website, or free of charge from BioNTech's website (https://www.biontech.com) or by contacting BioNTech's Investor Relations Department at Investors@biontech.de. These documents are also available free of charge from CureVac's website (https://www.curevac.com) or by contacting CureVac's Investor Relations Department at communications@curevac.com. All documents are also available from Georgeson, LLC, the information agent for the Offer, at (888) 686-7195 (toll free), (732) 353-1948 (collect) or Curevacoffer@georgeson.com.

UK

With respect to the public offering of BioNTech ADSs to CureVac shareholders in the United Kingdom (the "UK"), BioNTech has published a UK exemption document for the purposes of the prospectus regulation EU 2017/1129 as it forms part of UK domestic law by virtue of the European Union (Withdrawal) Act 2018, as amended. This document does not constitute an offer to purchase any BioNTech ADSs or shares in BioNTech and does not replace the UK exemption document which is available free of charge from BioNTech's website (https://investors.biontech.de/uk-disclaimer).

Investors in the UK should acquire BioNTech ADSs solely on the basis of the UK exemption document (including the documents incorporated by reference therein and any updates thereto, if any) relating to the BioNTech ADSs and should read the UK exemption document (including the documents incorporated by reference therein and any updates thereto, if any) before making an investment decision in order to fully understand the potential risks and rewards associated with the decision to invest in the BioNTech ADSs. Investment in BioNTech ADSs entails numerous risks, including a total loss of the initial investment.