CONSOLIDATED FINANCIAL STATEMENTS

CONSOLIDATED FINANCIAL STATEMENTS OF COVESTRO AG

The legend for references can be found in the Reporting Profile.

COVESTRO GROUP CONSOLIDATED INCOME STATEMENT

	Note	2021	2022
		€ million	€ million
Sales	**6**	**15,903**	**17,968**
Cost of goods sold		(11,475)	(15,404)
Gross profit		**4,428**	**2,564**
Selling expenses		(1,428)	(1,604)
Research and development expenses		(341)	(361)
General administration expenses		(415)	(353)
Other operating income	7	99	145
Other operating expenses	8	(81)	(124)
EBIT[1]		**2,262**	**267**
Equity-method loss		(15)	(17)
Result from other affiliated companies		2	2
Interest income		38	69
Interest expense		(79)	(130)
Other financial result		(23)	(61)
Financial result	**10**	**(77)**	**(137)**
Income before income taxes		**2,185**	**130**
Income taxes	11	(566)	(411)
Income after income taxes		**1,619**	**(281)**
Attributable to noncontrolling interest		3	(9)
Attributable to Covestro AG shareholders (net income)		1,616	(272)
		€	€
Basic earnings per share[2]	**12**	**8.37**	**(1.42)**
Diluted earnings per share[2]	**12**	**8.37**	**(1.42)**

1 EBIT: income after income taxes plus financial result and income tax

2 Earnings per share: According to IAS 33 (Earnings per Share), earnings per share comprise net income divided by the weighted average number of outstanding no-par voting shares of Covestro AG. The calculation for fiscal 2022 was based on 190,933,438 no-par value shares (previous year: 193,165,396). For more information, see note 12 "Earnings per Share."

COVESTRO GROUP CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME

	Note	2021	2022
		€ million	€ million
Income after income taxes		**1,619**	**(281)**
Remeasurements of the net defined benefit liability for post-employment benefit plans	20	510	849
Income taxes	11	(161)	(454)
Other comprehensive income from remeasurements of the net defined benefit liability for post-employment benefit plans		**349**	**395**
Changes in fair values of equity instruments	24	13	(3)
Income taxes	11	(4)	1
Other comprehensive income from equity instruments		**9**	**(2)**
Other comprehensive income that will not be reclassified subsequently to profit or loss		**358**	**393**
Exchange differences of foreign operations		367	50
Reclassified to profit or loss		–	–
Other comprehensive income from exchange differences		**367**	**50**
Other comprehensive income that may be reclassified subsequently to profit or loss		**367**	**50**
Total other comprehensive income		**725**	**443**
Attributable to noncontrolling interest		2	(4)
Attributable to Covestro AG shareholders		723	447
Total comprehensive income		**2,344**	**162**
Attributable to noncontrolling interest		5	(13)
Attributable to Covestro AG shareholders		2,339	175

COVESTRO GROUP CONSOLIDATED STATEMENT OF FINANCIAL POSITION

	Note	Dec. 31, 2021	Dec. 31, 2022
		€ million	€ million
Noncurrent assets			
Goodwill	13	757	729
Other intangible assets	13	706	603
Property, plant and equipment	14	6,032	5,801
Investments accounted for using the equity method	15	172	185
Other financial assets	16	49	143
Other receivables	18	76	110
Deferred taxes	11	818	345
		8,610	**7,916**
Current assets			
Inventories	17	2,914	2,814
Trade accounts receivable		2,343	2,011
Other financial assets	16	493	62
Other receivables	18	434	451
Claims for income tax refunds	11	128	115
Cash and cash equivalents		649	1,198
Assets held for sale		–	18
		6,961	**6,669**
Total assets		**15,571**	**14,585**
Equity	**19**		
Capital stock of Covestro AG		193	190
Capital reserves of Covestro AG		3,927	3,788
Other reserves		3,576	3,108
Equity attributable to Covestro AG shareholders		**7,696**	**7,086**
Equity attributable to noncontrolling interest		66	36
		7,762	**7,122**
Noncurrent liabilities			
Provisions for pensions and other post-employment benefits	20	1,199	486
Other provisions	21	223	184
Financial liabilities	22	2,349	3,368
Income tax liabilities	11	98	26
Other liabilities	23	34	32
Deferred taxes	11	300	312
		4,203	**4,408**
Current liabilities			
Other provisions	21	637	171
Financial liabilities	22	192	321
Trade accounts payable		2,214	2,016
Income tax liabilities	11	239	149
Other liabilities	23	324	396
Liabilities directly related to assets held for sale		–	2
		3,606	**3,055**
Total equity and liabilities		**15,571**	**14,585**

COVESTRO GROUP CONSOLIDATED STATEMENT OF CASH FLOWS

	Note	2021	2022
		€ million	€ million
Income after income taxes		1,619	(281)
Income taxes	11	566	411
Financial result	10	77	137
Income taxes paid		(546)	(538)
Depreciation, amortization, impairment losses and impairment loss reversals	13, 14	823	1,350
Change in pension provisions		31	54
(Gains)/losses on retirements of noncurrent assets		(3)	(3)
Decrease/(increase) in inventories		(987)	148
Decrease/(increase) in trade accounts receivable		(462)	377
(Decrease)/increase in trade accounts payable		722	(213)
Change in other working capital, other noncash items		353	(472)
Cash flows from operating activities	**27.1**	**2,193**	**970**
Cash outflows for additions to property, plant, equipment and intangible assets		(764)	(832)
Cash inflows from sales of property, plant, equipment and other assets		11	21
Cash inflows from divestments less divested cash		12	6
Cash outflows for noncurrent financial assets		(34)	(124)
Cash inflows from noncurrent financial assets		25	3
Cash outflows for acquisitions less acquired cash		(1,469)	–
Interest and dividends received		36	75
Cash inflows from other current financial assets		188	374
Cash flows from investing activities	**27.2**	**(1,995)**	**(477)**
Acquisition of treasury shares	19	–	(150)
Issuance of treasury shares	19	2	8
Dividend payments and withholding tax on dividends	19	(262)	(654)
Issuances of debt		51	2,069
Retirements of debt		(675)	(1,074)
Interest paid		(81)	(131)
Cash outflows for the purchase of additional interests in subsidiaries		–	(4)
Cash flows from financing activities	**27.3**	**(965)**	**64**
Change in cash and cash equivalents due to business activities		**(767)**	**557**
Cash and cash equivalents at beginning of year		**1,404**	**649**
Change in cash and cash equivalents due to exchange rate movements		12	(8)
Cash and cash equivalents at end of year		**649**	**1,198**

COVESTRO GROUP CONSOLIDATED STATEMENT OF CHANGES IN EQUITY

	Capital stock of Covestro AG	Capital reserves of Covestro AG	Retained earnings incl. total income	Accumulated other comprehensive income	Equity attributable to Covestro AG shareholders	Equity attributable to noncontrolling interest	Equity
	€ million	€ million	€ million	€ million	€ million	€ million	€ million
Dec. 31, 2020	**193**	**3,925**	**1,280**	**209**	**5,607**	**37**	**5,644**
Issuance of treasury shares	–	2			2		2
Dividend payments			(251)		(251)	(11)	(262)
Other changes[1]			(1)		(1)	35	34
Income after income taxes			1,616		1,616	3	1,619
Other comprehensive income			358	365	723	2	725
Total comprehensive income			1,974	365	2,339	5	2,344
Dec. 31, 2021	**193**	**3,927**	**3,002**	**574**	**7,696**	**66**	**7,762**
of which treasury shares	–	–			–		–
Dec. 31, 2021	**193**	**3,927**	**3,002**	**574**	**7,696**	**66**	**7,762**
Acquisition of treasury shares	(3)	(147)			(150)		(150)
Issuance of treasury shares	–	11			11		11
Dividend payments			(651)		(651)	(6)	(657)
Other changes[2]		(3)	8		5	(11)	(6)
Income after income taxes			(272)		(272)	(9)	(281)
Other comprehensive income			393	54	447	(4)	443
Total comprehensive income			121	54	175	(13)	162
Dec. 31, 2022	**190**	**3,788**	**2,480**	**628**	**7,086**	**36**	**7,122**
of which treasury shares	(3)	(136)			(139)		(139)

[1] Other changes in fiscal 2021 include the dilution of the Groups share resulting from a share deal due to additional noncontrolling interests.

[2] Other changes in capital reserves in fiscal 2022 include the difference between the historical cost of treasury shares and the issue price in November 2022. Further other changes in 2022 primarily include the purchase of additional interests in subsidiaries.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS OF THE COVESTRO GROUP

Principles and Methods

1. General Information

Covestro AG (registered at the district trade register, or Amtsgericht, for Cologne, number: HRB 85281) is a stock exchange-listed corporation headquartered at Kaiser-Wilhelm-Allee 60, 51373 Leverkusen (Germany), (Covestro AG). The consolidated financial statements of Covestro AG as of December 31, 2022, cover Covestro AG and its subsidiaries, joint arrangements and associated companies. They have been prepared according to the International Financial Reporting Standards (IFRSs) of the International Accounting Standards Board (IASB), London (United Kingdom), as endorsed by the European Union (EU) and in effect at the reporting date, the Interpretations (IFRICs) of the IFRS Interpretations Committee (IFRS IC) and the Interpretations published by the Standing Interpretations Committee (SIC), as well as the additional requirements of German commercial law pursuant to Section 315e (1) of the German Commercial Code (HGB) for the exempting IFRS consolidated financial statements.

The declaration pertaining to the German Corporate Governance Code pursuant to Section 161 of the German Stock Corporation Act (AktG) has been issued and made available to shareholders.

If certain items in the income statement, statement of comprehensive income, statement of financial position, statement of cash flows and statement of changes in equity of the Covestro Group are condensed for the sake of clarity, this is explained in the notes. The income statement has been prepared using the cost-of-sales method. Assets and liabilities are classified by maturity. They are classified as current if they mature or are intended for sale within one year or within the normal business cycle of the Covestro Group. Trade accounts receivable and payable, inventories, and assets held for sale are consistently presented as current. Deferred tax assets, deferred tax liabilities and pension provisions are consistently presented as noncurrent.

The consolidated financial statements are drawn up in euros. Amounts are stated in millions of euros (€ million) unless otherwise noted.

The Board of Management of Covestro AG prepared the consolidated financial statements as of December 31, 2022, on February 24, 2023, submitted the prepared consolidated financial statements to the Audit Committee and the Supervisory Board for examination and approval, and authorized their publication.

Exchange Rates

In the reporting period, the following exchange rates were used for the major currencies of relevance from the Covestro Group's perspective:

Average rates for major currencies

		Average rates	
€1/		2021	2022
BRL	Brazil	6.37	5.42
CNY	China	7.63	7.08
HKD	Hong Kong[1]	9.19	8.23
INR	India	87.43	82.63
JPY	Japan	129.82	137.77
MXN	Mexico	23.98	21.13
USD	United States	1.18	1.05

[1] Special Administrative Region (China)

Closing rates for major currencies

		Closing rates	
€1/		2021	2022
BRL	Brazil	6.31	5.64
CNY	China	7.20	7.37
HKD	Hong Kong[1]	8.83	8.32
INR	India	84.23	88.17
JPY	Japan	130.38	140.66
MXN	Mexico	23.14	20.86
USD	United States	1.13	1.07

2. Effects of New Financial Reporting Standards

2.1 Financial Reporting Standards Applied for the First Time in the Reporting Period

IFRS pronouncement (published on)	Title	Effective for annual periods beginning on or after
Amendments to IFRS 3 (May 14, 2020)	Reference to the Conceptual Framework	January 1, 2022
Amendments to IAS 16 (May 14, 2020)	Property, Plant and Equipment – Proceeds before Intended Use	January 1, 2022
Amendments to IAS 37 (May 14, 2020)	Onerous Contracts – Cost of Fulfilling a Contract	January 1, 2022
Annual Improvements to IFRSs (May 14, 2020)	2018–2020 Cycle	January 1, 2022

Initial application of the standards listed in the table had no or no material impact on the presentation of the net assets, financial position and results of operations of the Covestro Group.

2.2 Published Financial Reporting Standards that have not yet been Applied

The IASB issued the following standards and amendments to standards which have already been adopted by the European Union (EU) but are not mandatory for financial statements 2022

IFRS pronouncement (published on)	Title	Effective for annual periods beginning on or after
IFRS 17 (May 18, 2017)	Insurance Contracts	January 1, 2023
Amendments to IFRS 17 (June 25, 2020)	Amendments to IFRS 17 – Insurance Contracts	January 1, 2023
Amendments to IAS 1 and the practice statement (February 12, 2021)	Disclosure of Accounting Policies (Amendments to IAS 1 and IFRS Practice Statement 2)	January 1, 2023
Amendments to IAS 8 (February 12, 2021)	Definition of Accounting Estimates (Amendments to IAS 8)	January 1, 2023
Amendments to IAS 12 (May 7, 2021)	Deferred Tax related to Assets and Liabilities arising from a Single Transaction	January 1, 2023
Amendments to IFRS 17 (December 9, 2021)	Initial Application of IFRS 17 and IFRS 9 – Comparative Information	January 1, 2023

The application of the following other standards and amendments to standards issued by the IASB is conditional upon their endorsement by the EU. The effective date for the standards is assumed to be the effective date designated by the IASB.

IFRS pronouncement (published on)	Title	Effective for annual periods beginning on or after
Amendments to IAS 1 (January 23, 2020, July 15, 2020 and October 31, 2022)	Classification of Liabilities as Current or Non-current, Classification of Liabilities as Current or Non-current – Deferral of Effective Date and Non-current Liabilities with Covenants	January 1, 2024
Amendments to IFRS 16 (September 22, 2022)	Lease Liability in a Sale and Leaseback	January 1, 2024

The effects of the initial application of the aforementioned financial reporting standards described below are currently being reviewed. At the time the financial statements were prepared, no material impact on the presentation of the net assets, financial position, and results of operations of the Covestro Group was expected. According to the analysis as it stands currently, initial application of the other standards listed in the table will have no effect on the presentation of the net assets, financial position, and results of operations of the Covestro Group.

On January 23, 2020, the IASB published "Classification of Liabilities as Current or Non-current," an amendment to IAS 1 (Presentation of Financial Statements) that clarifies when a liability with an uncertain settlement date is classified as current or noncurrent in the statement of financial position. On October 31, 2022, the IASB published further amendments to IAS 1 under the title "Non-current Liabilities with Covenants." The changes resulted in the effective date being postponed to January 1, 2024. The amendments clarify this from fiscal 2020 and clarify that the conditions of loan agreements which a company must only comply with after the reporting date have no bearing on whether a liability is classified as current or noncurrent on the reporting date. In contrast, conditions which a company must comply with on or before the reporting date have a bearing on a liability's classification as current or noncurrent, even if the condition itself is only assessed after the reporting date.

On February 12, 2021, the IASB issued additional amendments to IAS 1, "Disclosure of Accounting Policies (Amendments to IAS 1 and IFRS Practice Statement 2)," along with an amendment to the relevant practice statement. These amendments require all companies to disclose the "material accounting policies" in their notes to the consolidated financial statements that are relevant to understanding the financial statements and the underlying transactions, for example in the case of (de facto) accounting options with respect to material individual items in the group, rather than "significant accounting policies" in general. Accounting policies are significant when they relate to high-value positions such as pension provisions, but the standard on which they are based specifies clear accounting policies that apply to every entity. The amendments to IFRS Practice Statement 2 provide guidelines for the application of this materiality concept.

Also on February 12, 2021, the IASB issued amendments to IAS 8 (Accounting Policies, Changes in Accounting Estimates and Errors) under the title "Definition of Accounting Estimates (Amendments to IAS 8)." These amendments are intended to clarify the distinction between changes in accounting policies and changes in accounting estimates. This distinction is generally relevant since changes in accounting policies are, subject to transitional provisions, always applied retrospectively to consolidated financial statements, while changes in accounting estimates are only applied prospectively from the date of the change in estimates.

On September 22, 2022, the IASB published amendments to IFRS 16 under the title "Lease Liability in a Sale and Leaseback." The amendments clarify that no gains or losses relating to the retained right of use may be recognized in the subsequent measurement of a lease liability in a sale and leaseback transaction.

In December 2022, the Council of the European Union reached an agreement regarding implementation of the EU Directive "Global Anti-Base Erosion Rules (Pillar Two)" of the OECD regarding the global minimum taxation of multinational enterprises. This is yet to be transposed into national law in Germany, with this expected to occur in fiscal 2023. The locally implemented EU Directive is likely to be applicable for the first time to fiscal years beginning on January 1, 2024. The impacts of implementation of the EU Directive are currently being examined.

In this context, the IASB published the Exposure Draft "International Tax Reform – Pillar Two Model Rules (Proposed amendments to IAS 12)" on January 9, 2023. Among other measures, this proposes the introduction of a temporary exception to the accounting for deferred taxes arising from the implementation of the new EU Directive as well as supplementary notes depending on whether or not it has already been transposed into national tax law. The proposed exception to the accounting for deferred taxes is to apply with retroactive effect immediately upon the standard being adopted, subject to the relevant endorsement.

Additionally, the International Sustainability Standards Board (ISSB) newly founded in fiscal 2021 published initial drafts for sustainability reporting in fiscal 2022, the potential future effect of which on the Covestro Annual Report is currently being analyzed.

3. Accounting Policies and Valuation Principles

Covestro's consolidated financial statements are based on the principle of the historical cost of acquisition or production. Exceptions are items measured at fair value, such as certain financial assets, assets held for sale, plan assets, and reportable derivatives.

Discretionary Decisions and Estimation Uncertainties

In preparing the consolidated financial statements, Covestro management has to make assumptions and estimates to a certain extent that may substantially impact the presentation of the Covestro Group's net assets, financial position, and results of operations and could deviate from the actual results. Such assumptions, estimates, and the exercise of discretion mainly relate to the following areas:

- The identification and valuation of intangible assets and liabilities in the context of purchase price allocation in connection with the acquisition of companies
- Defining the useful life of noncurrent assets
- The identification of impairment losses or reversals of impairment losses on noncurrent assets, taking individual lower value thresholds into account
- The determination of cash-generating units for the purpose of centralized impairment tests of noncurrent assets
- Goodwill impairment testing including long-term planning assumptions with respect to growth and profitability using discounted cash flows in the context of central impairment tests
- Accounting for income taxes and assessing the recoverability of deferred tax assets in respect to future taxable income and the recognition of tax effects in the future
- Recognition and measurement of provisions (e.g., for litigation-related expenses, pensions and other employee benefits, other taxes, environmental compliance and remediation costs, and product liability)
- The determination of assumptions underlying the recognition, measurement, and disclosure of financial instruments

The risks relating to the impacts of the current crisis caused by Russia's war against Ukraine and the coronavirus pandemic are taken into account here. In addition, Covestro's management must decide which information is relevant to readers of the IFRS consolidated financial statements and should be included in the notes. Information about exercising discretion in the application of accounting policies that most significantly affect the amounts reported in the consolidated financial statements, and about estimates and assumptions, is disclosed in the following notes. The following estimates are based on historical experience and assumptions that are believed to be reasonable. They are reviewed on an ongoing basis, but may differ from the actual values subsequently recognized.

Climate-related Impacts

Covestro is striving to become climate-neutral and has set itself the target of achieving net zero greenhouse gas (GHG) emissions* in its own production (Scope 1) and from the provision and use of energy produced outside the company (Scope 2) at all environmentally relevant sites by the year 2035. It is simultaneously also working on solutions to reduce emissions along the value chain. All the assumptions and estimates in these financial statements are based on the circumstances and assessments on the reporting date. On this basis, there are no identifiable specific indications of the need for the impairment of noncurrent assets, a significant adjustment to the remaining useful lives of assets, or impacts on existing or possible new environmental or dismantling obligations on reporting date. The Group will continuously review the basic assumptions made and will adjust them if necessary. In this context, Covestro also continuously monitors legislation regarding climate change as increasing legislative restrictions are anticipated in the future.

→ See sections „Management" and „Climate Neutrality" of the Combined Management Report for details on how Covestro takes sustainability into account in its corporate strategy as well as its management and planning.

* Achievement of net-zero GHG emissions is defined as a balance between anthropogenic production of GHG emissions (caused by the company's own production activities and by the provision and use of energy produced outside the company) and anthropogenic reduction of GHG emissions.

Consolidation

As of December 31, 2022, the direct and indirect subsidiaries of Covestro AG were fully consolidated in accordance with the principles of IFRS 10 (Consolidated Financial Statements). In addition, joint arrangements as defined by IFRS 11 (Joint Arrangements) were classified as joint operations and consolidated proportionately in the consolidated financial statements, or classified as joint ventures and accounted for in the same way as associated companies using the equity method in accordance with IAS 28 (Investments in Associates and Joint Ventures).

→ See note 5.1 "Scope of consolidation and investment."

Joint Operations and Joint Ventures

Joint operations and joint ventures are based on joint arrangements. A joint arrangement is deemed to exist if Covestro AG, through a contractual agreement, indirectly or directly jointly controls an activity together with one or more third parties. Joint control is only deemed to exist if decisions regarding the relevant activities require the unanimous consent of the parties sharing control.

A joint operation is a joint arrangement whereby the parties that have joint control over the arrangement have rights to the assets attributable to the arrangement and obligations with regard to the liabilities attributable to the arrangement. The Covestro Group recognizes the share of assets, liabilities, revenues and expenses in accordance with its rights and obligations in a joint operation.

A joint venture is a joint arrangement whereby the parties that have joint control over the arrangement have rights to the net assets of the arrangement. Joint ventures are accounted for using the equity method.

Associates over which Covestro AG is able to exercise significant influence, directly or indirectly, generally through an ownership interest between 20% and 50%, are also accounted for using the equity method.

Change in Ownership Interest

A change in the interest in a subsidiary without acquiring or losing control is accounted for as an equity transaction and has no impact on the income statement.

If the Group loses control over a subsidiary, then the associated assets (including proportional goodwill), liabilities, noncontrolling interests, and other equity items are derecognized. Any resulting gain or loss is recognized in the income statement, and any equity interest retained is measured at fair value on this date and recognized. In the event of joint control, the aforementioned provisions would be applied to joint operations and joint ventures. If the Group maintains significant influence, then as a rule, the equity interest in the associated company continues to be accounted for using the equity method after the initial measurement.

Currency Translation

The financial statements of the individual companies included in the consolidated financial statements are prepared in their respective functional currencies. The majority of consolidated companies carry out their activities autonomously from a financial, economic, and organizational point of view, and their functional currencies are therefore the respective local currencies.

In the separate financial statements of the foreign companies, receivables and liabilities in currencies other than the respective functional currency are translated at closing rates. Related exchange differences are recognized in profit or loss and recorded as exchange gains or losses under other financial result.

In the consolidated financial statements, the assets and liabilities of Covestro companies whose functional currency is not the euro are translated into euros at closing rates at the start and end of the reporting period, while income and expense items and cash flows are translated into euros at average rates. Equity items are translated at historical rates. Foreign currency differences resulting from the translation of the figures disclosed in the financial statements of foreign companies are recognized directly in equity in the currency translation reserve.

Sales and Other Operating Income

All revenues from customer contracts, such as the selling of products or rendering of services, or from licensing agreements, are recognized as sales. Other operational revenues are recognized as other operating income.

In principle, the amount of consideration from a contract with a customer to which Covestro expects to be entitled in exchange for the transfer of goods or services is recognized as sales when the customer obtains control of the corresponding goods or services.

Sales are generated primarily from the sale of chemical products. In most cases, control over these products is transferred to the customer at a point in time.

Depending on the contractual agreements made and transportation clauses agreed upon with the customer, in the majority of cases control is transferred to the customer upon delivery at the place of destination, furthermore at the point in time of collection by the customer or upon handover to the freight carrier. In some cases, sales are made through consignment warehouses in which customers primarily obtain control over the delivered goods upon delivery to the consignment warehouse.

In principle, control is considered to be transferred when the customer can direct the use of the product to be delivered and obtain substantially all of the remaining benefits from the product, while this is no longer possible for Covestro.

Determining the point in time of the transfer of control involves considering additional indicators. In particular, it is considered at which point in time Covestro has a present right to payment for the product and when physical possession of the product or, in a broader sense, the possibility of sole access to the product, is transferred to the customer. Depending on the transportation clauses, the possibility of sole access to the product may be transferred even prior to arrival or physical handover of the product to the customer. Furthermore, the point in time when the legal title passes to the customer is also considered to the extent that it constitutes more than a protective right. The point in time when the significant rewards and risks of ownership of a product are transferred to the customer is usually linked closely with the aforementioned indicators and is therefore considered with these. Based on experience, it is assumed that products sold fulfill the agreed-upon specifications, thus acceptance by the customer is an indicator that does not generally affect the point in time at which control is transferred.

As a result, the point in time at which control is transferred depends on the contractual agreement concluded with the customer in each case and the stipulated transportation clauses.

In the case of products sold through a consignment warehouse, the customer generally obtains physical possession of this product upon delivery to the consignment warehouse. In addition, the right to payment for the delivered goods generally arises upon delivery. To the extent that the other three indicators do not lead to a contrary conclusion, control of the products in the case of a sale through a consignment warehouse transfers to the customer upon delivery to the consignment warehouse. The corresponding sales are therefore realized at the time of delivery.

Certain products are only sold to one customer. Some of these customer-specific products have no alternative use for Covestro. Insofar as Covestro has an enforceable right to payment for performance completed to date, sales are recognized on the basis of progress towards complete satisfaction of the performance obligation. As a rule, control over an individual customer-specific product is considered to be transferred when the generally short production process is completed successfully and the product has been tested to confirm that the agreed-upon specifications have been met.

To the extent that, for certain types of performance obligations that are satisfied over time, there is a right to consideration in an amount that corresponds directly with the value of the performance provided by Covestro to date, revenue will normally be realized in the amount to which Covestro has a right to invoice.

Invoices are usually payable in 0 to 90 days. Contracts may contain early payment discounts or rebates. Rebates are generally retroactively granted based on the sales or volume of a period customarily spanning up to 12 months. Some contracts include pricing formulas used to determine the billable price at the time of delivery. Moreover, the final prices for certain contracts with customers are not yet fixed at the time of transfer of control. Instead, provisional prices are billed initially.

Sales are recognized in the amount of the transaction price that Covestro is expected to receive. Sales do not include amounts collected on behalf of third parties (e.g., sales tax). Where consideration includes a variable component, for example due to the contractual clauses described, this component of the consideration is estimated either based on the expected value method or the most likely amount. The method producing the best estimate is used in this case. However, variable consideration is only taken into account to the extent it is not constrained as defined by IFRS 15 (Revenue from Contracts with Customers). Variable consideration is not constrained if it is highly probable that a significant reversal in the amount of sales will not occur when the corresponding uncertainty is subsequently resolved. The transaction price of a contract is allocated to the performance obligations therein using the relative stand-alone selling prices, which generally correspond to the agreed upon prices. If the conditions are met, variable amounts are completely allocated to individual performance obligations.

Refund liabilities result particularly from rebates granted and total the amount of the rebate expected to be refunded, which is calculated based on the methods described. The rebate deemed to be due is reported in other liabilities under refund liabilities until payment.

As a rule, no warranties are issued beyond normal warranties that products will fulfill the agreed-upon specifications.

In the case of contracts with customers, Covestro generally does not expect more than one year to pass between the transfer of a product to a customer and the payment thereof. As a result, the agreed consideration is not adjusted for significant financing components. When incremental costs of obtaining a contract arise, these are immediately recognized as expenses, if the potential amortization period is one year or less.

Government Grants

Government grants are recognized if there is sufficient certainty that the benefits will be granted and the related conditions are met. Asset-related grants from third parties, such as investment grants, are reported under other receivables and liabilities and are recognized in profit or loss in accordance with the asset’s useful life. Depending on the circumstances, income-related grants are either offset against expenses or are recognized under other operating result. If realized in the income statement before the payment is received or if it is dependent on specific conditions, these are recognized as other receivables or other liabilities. Emission rights granted free of payment by government authorities are recognized in the statement of financial position at zero euros or at a reminder value. Emission rights acquired on the market in return for payment are capitalized at cost of acquisition and, if the fair value is lower than the acquisition cost, are impaired. Emissions caused generally result in return obligations which have to be recognized.

Research and Development Expenses

Research and development expenses are incurred in the Covestro Group for in-house research and development activities as well as research and development collaborations and alliances with third parties.

According to IFRSs, research costs cannot be capitalized. Development costs, on the other hand, must be capitalized according to closely defined conditions. An intangible asset must be recognized if there is reasonable certainty of receiving future cash flows that will cover an asset's carrying amount. Covestro's development projects are often subject to uncertainties, so the conditions for the capitalization of development costs are normally not satisfied. Each project or contract is reviewed to determine potential capitalization requirements. The recognition, measurement, and presentation rules for other intangible assets apply where development costs are capitalized.

Income Taxes

Income taxes comprise the taxes levied on taxable income in the individual countries along with changes in deferred tax assets and liabilities that are recognized in profit or loss. The income taxes recognized are reflected at the amounts likely to be payable or reimbursable under the statutory regulations in force, or already enacted in relation to future periods, at the end of the reporting period.

As a rule, deferred taxes are recognized in profit or loss. However, if deferred taxes relate to items recognized outside profit or loss in equity, they, too, are recognized directly in equity.

The probability that deferred tax assets resulting from temporary differences, tax credits or loss carryforwards can be utilized in the future is the subject of forecasts by the individual companies regarding the future earnings situation in the respective Covestro companies and other parameters.

Deferred tax liabilities are recognized on planned dividend payments by subsidiaries. Where no dividend payment or disposal of corresponding equity investments is planned for the foreseeable future, no deferred tax liability is recognized on the difference between the proportionate equity according to IFRSs and the tax base of the carrying amount of the investment in the subsidiary (outside basis differences).

The expected effects of uncertain deferred and actual income tax positions are estimated in accordance with IFRIC 23 (Uncertainty over Income Tax Treatments) either based on the expected value method or the most likely amount. The method producing the best estimate is used in this case. Tax audits in which the relevant tax authority could take a view differing from Covestro's legal position are by far the most important sources of estimation uncertainties for uncertain tax positions. Uncertain tax positions are accounted for under the assumption that the tax authorities will investigate all relevant matters and have all relevant information at their disposal.

Acquisition Accounting and Goodwill

Businesses acquired are accounted for pursuant to IFRS 3 (Business Combinations) using the acquisition method, which requires that all identifiable assets acquired and all (contingent) liabilities assumed be recognized and measured at their respective fair values on the date control is obtained. Ancillary acquisition costs are recognized as expenses in the periods in which they occur. If the purchase price or the consideration transferred exceeds the value of the equity acquired, goodwill is recognized. If the value of the equity acquired exceeds the purchase price or the consideration transferred by the acquirer, the difference is recognized in profit or loss after an additional review. Goodwill is not amortized. Its carrying amount is subjected to impairment testing annually or more often if there is any indication of possible impairment. Detailed explanations of impairment testing can be found under "Impairment Testing" in this note. Once an impairment loss has been recognized on goodwill, it generally cannot be reversed in subsequent periods. In the event of a restructuring, e.g., the reorganization of financial reporting processes, or external portfolio divestments, any associated goodwill is reallocated or is only proportionately reduced (IAS 36.86 et seq.).

The Covestro Group recognizes the components of noncontrolling interests in the acquiree either at fair value or at the noncontrolling interest’s proportionate share of the acquiree’s identified net assets. The Covestro Group exercises this option separately for each business combination in accordance with the standard.

Other Intangible Assets (Excluding Goodwill)

Other intangible assets are identifiable nonmonetary assets without physical substance, other than goodwill (such as software, rights, or capitalized development costs). Other intangible assets, such as individually acquired patents and technologies, are recognized at the cost of acquisition or production. Patents and technologies, licenses, and customer contracts acquired as part of a business combination are recognized at fair value as of the acquisition date and are amortized using the straight-line method if their useful life can be determined. The following useful lives are applied, except where the actual depletion demands a different amortization pattern:

Useful life of other intangible assets

Patents and technologies	3 to 20 years
Production rights, trademarks and licenses	10 to 20 years
Customer relationships and distribution rights	7 to 20 years
Software	3 to 4 years
Other rights and assets	max. 20 years

Determination of the expected useful lives of other intangible assets is based in particular on estimates of the period for which they will generate cash flows.

Other intangible assets with an indefinite useful life and other intangible assets recognized, but not yet available for use, with a specified useful life are regularly tested for impairment, like goodwill.

Property, Plant and Equipment

Property, plant and equipment are carried at the cost of acquisition or construction and depreciated using the straight-line method over the expected useful life. If necessary, the carrying amount is reduced by impairment losses or increased by impairment loss reversals. Right-of-use assets recognized in accordance with IFRS 16 (Leases) are also included in property, plant and equipment. The residual values and useful lives of assets are regularly reviewed and adjusted for expected changes as necessary.

If the construction phase or manufacturing process of property, plant or equipment extends over a period of 12 months or more, the interest incurred on borrowed capital up to the date of completion is capitalized as part of the cost of acquisition or construction in accordance with IAS 23 (Borrowing Costs).

Costs for regular, comprehensive maintenance work (such as the major overhaul of a technical facility) are capitalized as a separate component if they satisfy special recognition criteria.

The following depreciation periods are generally applied throughout the Covestro Group:

Useful life of property, plant and equipment

Buildings	20 to 50 years
Infrastructure	10 to 20 years
Storage tanks and pipelines	10 to 20 years
Plant installations	6 to 20 years
Machinery and equipment	6 to 12 years
Furniture and fixtures	4 to 10 years
Vehicles	5 to 8 years
Computer equipment	3 to 5 years
Laboratory and research facilities	3 to 5 years

Significant asset components with different useful lives are accounted for and depreciated separately.

When assets are sold, closed down, or scrapped, the difference between the recoverable amount, which normally amounts to the fair value less costs of disposal, and the net carrying amount of the assets is recognized as a gain or loss in other operating income or expenses, respectively.

Leases

A lease exists when the lessor grants the lessee the contractual right to control an identified asset for a specified period of time and in return the lessor receives consideration from the lessee.

When Covestro is the lessee in a lease, as a rule a right-of-use asset and a corresponding liability (lease liability) are recognized in the statement of financial position on the date the underlying asset is made available for use to Covestro.

The right-of-use asset represents a lessee's right to use the asset being leased in return for payment. Upon initial recognition, the right-of-use asset is generally capitalized at the amount of the corresponding lease liability plus any initial direct costs, any dismantling obligations, and lease payments made prior to the commencement date less any lease incentives received. For subsequent measurement, the right-of-use asset is depreciated over the lease term. Contract modifications, as long as these are not measured as separate leases, and reassessment of the lease liability are also reflected in the right-of-use asset. The right-of-use asset is included in the property, plant and equipment line item in the statement of financial position. Impairment testing and reporting of any impairment losses or impairment loss reversals are carried out for the right-of-use assets in the statement of financial position in accordance with the regulations applicable to property, plant and equipment.

The lease liability represents the company's obligation to make contractual lease payments and is measured as the present value of precisely these outstanding lease payments. While IFRS 16 (Leases) requires use of the interest rate implicit in the lease in order to calculate the present value, it is frequently not possible to ascertain this interest rate. Accordingly, the incremental borrowing rate is generally applied in discounting the lease payments. This rate depends on the term, currency, and start date of the lease. If the outstanding lease payments include fixed payments or variable lease payments that depend on an index or an interest rate, these are taken into consideration in the lease liabilities. Variable lease payments that depend on an index or an interest rate are measured at the underlying index or interest rate as soon as this is to be applied. If, as an exception, there are residual value guarantees, purchase options, or penalty fees, these are to be recognized accordingly in the lease liability to the extent that they are anticipated. At Covestro, lease agreements usually include fixed contractual terms. Additionally, options to extend and terminate the lease exist particularly for the rental of production and logistics infrastructure and of real estate. In order to assess whether options to extend or terminate the lease are reflected in the lease term, all relevant facts are examined to determine the existence of economic incentives to exercise or not to exercise these options. The lease term is only adjusted to reflect changes in the expectations regarding whether or not such options will be exercised if there is reasonable certainty. The effective interest method is used for the subsequent measurement of lease liabilities. Using this method, periodic lease payments with an effect on cash flows are divided into an interest portion that is recognized in profit or loss and a repayment portion not affecting profit or loss. Lease liabilities are reported under financial liabilities and classified as current or noncurrent according to their maturity.

Overall, effects on income from leases to be recognized in accordance with IFRS 16 comprise depreciation of the right-of-use asset and any impairment losses on the right-of-use asset (operating result), from discounting and subsequent measurement of the lease liability (financial result) and in cases in which a lease agreement is modified. Such lease modifications can result, for instance, from options to terminate or extend a lease which were previously not explicitly stipulated in the contract. Contractual lease payments for leases accounted for in accordance with IFRS 16 are shown solely under cash flows from financing activities.

IFRS 16 provides exemptions for applying the recognition and measurement rules for leases with a term of less than 12 months or those with a low-value underlying asset. Leases are not recognized as a depreciable right-of-use asset on the statement of financial position or as a lease liability at Covestro for the exceptions referenced above. Corresponding contractual payments are instead shown in cash flows from operating activities and the same amount is recognized as an expense in the operating result. Moreover, the rules in IFRS 16 are not applied to leases on intangible assets.

For leases in which Covestro is the lessor, a differentiation is made between finance leases and operating leases in accordance with IFRS 16. Leases that transfer substantially all the risks and rewards incidental to ownership of the leased asset to the lessee are treated as finance leases. At the commencement date, Covestro recognizes a lease receivable in the statement of financial position in the amount of the net investment in the lease and derecognizes the underlying asset from noncurrent assets. In an operating lease, the underlying asset continues to be shown under Covestro's property, plant and equipment and depreciated over its useful life. Lease payments received are recognized as income.

Investment Property

Investment property is measured at cost unless a lower carrying amount is required. The fair values of investment property to be determined for disclosure purposes are mainly based on internally prepared valuations. In the case of buildings and developed land, this is carried out using a method known as the German income approach, and in the case of undeveloped land, using the sales comparison approach.

Inventories

Inventories are recognized at their cost of acquisition or production (production-related full cost) – calculated by the weighted-average method – or at their net realizable value, whichever is lower. The net realizable value is the estimated selling price in the ordinary course of business less estimated cost to complete and selling expenses. Impairment losses on inventories are recognized if their net realizable value on the reporting date is lower than the value calculated using the weighted-average method. Impairment losses are reversed if the net recoverable amount subsequently exceeds the carrying amount.

Financial Instruments

Contracts are recognized as financial instruments in the financial statements which simultaneously give rise to a financial asset at one entity while resulting in a financial liability or equity instrument at another entity. Accordingly, financial assets are recognized in the consolidated statement of financial position if the Covestro Group has a contractual right to receive cash or other financial assets from another entity. Regular-way purchases and sales of financial assets are generally recognized on the settlement date. Financial liabilities are initially recognized in the consolidated statement of financial position if Covestro has a contractual obligation to transfer cash or other financial assets to another entity. With the exception of trade accounts receivable, financial instruments are measured at fair value plus directly attributable transaction costs upon initial recognition. For financial instruments measured at fair value through profit or loss, transaction costs are recognized directly in the income statement. Trade accounts receivable are recognized at their transaction price. Subsequent measurement of financial instruments is based on their classification in the categories stipulated by IFRS 9 (Financial Instruments).

Financial Assets

Financial assets comprise loans, acquired equity and debt instruments, cash and cash equivalents, other financial assets, and derivatives with positive fair values. The classification and measurement of financial assets is based on the business model pursued by the Covestro Group with regard to the management of its financial assets for the purpose of collecting cash flows, and on the characteristics of the contractual cash flows from the relevant financial assets (cash flow condition). Subsequent measurement takes place according to the measurement rules for the respective category, as described below.

Financial assets carried at amortized cost comprise nonderivative financial assets that are held as part of a business model that aims to collect contractual cash flows and that additionally fulfill the cash flow condition, i.e., the contractual terms of the financial asset give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding. This category comprises trade accounts receivable, the loans included in other financial assets, the additional financial receivables reflected in other receivables, and cash and cash equivalents. Interest income from financial assets assigned to this category is determined using the effective interest method.

Financial assets carried at fair value through other comprehensive income encompass debt instruments held as part of a business model that aims to obtain cash flows from the instrument both by collecting contractual payments as well as through the sale thereof, and that additionally fulfill the cash flow condition. Acquired bonds may be classified in this category to the extent that they are intended to be sold before they mature. Interest income, foreign currency gains and losses, and impairment losses or impairment loss reversals are recognized in the income statement for financial assets in this category. The remaining changes in fair value are recognized in other comprehensive income. Upon derecognition, the cumulative net gains or losses included in other comprehensive income are reclassified to the income statement.

The Covestro Group exercises the option of recognizing changes in the fair value of equity instruments that are not held for trading in other comprehensive income. In contrast to the treatment of debt instruments, the gains and losses recognized in other comprehensive income are not reclassified to the income statement upon derecognition, and no impairment losses or impairment loss reversals are recognized in profit or loss.

Financial assets carried at fair value through profit or loss are all financial assets not assigned to any of the above categories and particularly include derivatives with positive fair values. The Covestro Group does not currently opt to measure financial assets at fair value, e.g., for the purpose of avoiding or minimizing accounting mismatches.

Financial assets are derecognized when contractual rights to receive cash flows from the financial assets expire or the financial assets are transferred together with all significant risks and rewards.

Cash and Cash Equivalents

Cash and cash equivalents comprise cash, checks received, and balances with banks. Cash equivalents are highly liquid short-term financial investments that are subject to an insignificant risk of changes in value, are easily convertible into a known amount of cash, and have a maturity of three months or less from the date of acquisition or investment.

Cash Flows

The statement of cash flows shows how the Covestro Group's cash and cash equivalents changed in the reporting year. In accordance with IAS 7 (Statement of Cash Flows), cash flows are broken down into cash flows from operating activities, cash flows from investing activities, and cash flows from financing activities.

The reported cash flows of foreign Covestro companies whose functional currency is not the euro are translated at average exchange rates, while cash and cash equivalents are recognized at the closing rate. This effect due to exchange rate movements is recognized in the separate line "Change in cash and cash equivalents due to exchange rate movements."

When determining the cash flows from financing activities, Covestro exercises the option of recognizing dividend payments and profit withdrawals in cash flows from financing activities.

Cash flows from interest and dividends received are presented under cash flows from investing activities in the separate line "Interest and dividends received."

Trade Accounts Payable

Trade accounts payable comprise current liabilities arising from the supply of goods and services, i.e., from the receipt of goods or services. These are based on agreements with the supplier, are invoiced and, in total, are part of working capital within Covestro's normal business cycle.

Derivatives

Derivatives – such as forward exchange contracts – are used to mitigate the risk of fluctuations in exchange rates. Derivatives are recognized at the trade date.

Contracts concluded in order to receive or deliver nonfinancial goods for the company's own purposes are not accounted for as derivatives but treated as pending transactions in accordance with IAS 37 (Provisions, Contingent Liabilities and Contingent Assets). Where embedded derivatives are identified that are required to be separated from the pending transactions, they are accounted for separately. To cover possible peak demand, a nonmaterial volume of transactions may be entered into for which the possibility of immediate resale cannot be excluded. Such transactions are allocated to separate portfolios upon acquisition and accounted for as or like derivatives according to IFRS 9 (Financial Instruments).

Reportable derivatives are carried at fair value. This applies to what are known as stand-alone derivatives as well as derivatives embedded in certain types of contracts and therefore required to be accounted for separately from their host contracts. Positive fair values at the end of the reporting period are reflected in financial assets, negative fair values in financial liabilities. Changes in the fair values of these derivatives are recognized directly in profit or loss in other operating result. Changes in the fair values of forward exchange contracts and currency options serving as hedging instruments for items in the statement of financial position are divided into an interest and a currency component. The interest component is recognized in interest expense or income and the currency component is recognized as exchange gains or losses in the other financial result. Changes in the fair value of forward exchange contracts used to hedge forecasted transactions in foreign currencies are recognized in other operating result.

Covestro does not apply hedge accounting within the meaning of IFRS 9.

Financial Liabilities

Financial liabilities generally comprise primary financial liabilities and negative fair values of derivatives.

In subsequent periods, such nonderivative liabilities are measured at amortized cost using the effective interest method. The Covestro Group does not opt to measure financial liabilities at fair value, e.g., to avoid or minimize accounting mismatches.

Financial liabilities are derecognized when the contractual obligation is discharged or canceled, or has expired.

Netting Financial Instruments

Financial assets and financial liabilities in the context of master netting or similar agreements are netted and the net amount is recognized in the consolidated statement of financial position if the Covestro Group has a present legal entitlement to offset the recognized amounts against one another and there is the intention to balance them on a net basis or at the same time to settle the corresponding liability with realization of the asset.

Provisions for Pensions and Other Post-Employment Benefits

Within the Covestro Group, post-employment benefits are provided under defined contribution and defined benefit plans. In the case of defined contribution plans, the company pays contributions to publicly or privately administered pension plans on a mandatory, contractual, or voluntary basis. Once the contributions have been paid, the company has no further payment obligations. The regular contributions constitute expenses for the year in which they are due. As such, they are included in the functional cost items, and thus in EBIT. All other post-employment benefit systems are defined benefit plans, which may be either unfunded, i.e., financed by provisions, or funded, i.e., financed through pension funds.

The present value of the defined benefit obligations and the resulting expense are calculated in accordance with IAS 19 (Employee Benefits) using the projected unit credit method. The future benefit obligations are valued by actuarial methods and spread over the entire employment period on the basis of specific assumptions regarding beneficiary structure and the economic environment. These relate mainly to the discount rate, future salary and pension increases, variations in health care costs, and mortality rates.

The discount rates used are calculated from the yields of high-quality corporate bond portfolios in specific currencies with cash flows approximately equivalent to the expected disbursements from the pension plans. The uniform discount rate derived from this interest rate structure is thus based on the yields, on the closing date, of a portfolio of corporate bonds with at least an AA or AAA rating whose weighted residual maturities approximately correspond to the duration necessary to cover the entire benefit obligation.

The fair value of plan assets is deducted from the present value of the defined benefit obligation for pensions and other post-employment benefits to determine the net defined benefit liability. Plan assets in excess of the benefit obligation are reflected in other receivables, subject to the asset ceiling specified in IAS 19. Comprehensive actuarial valuations for all major plans are performed annually as of December 31.

The balance of all income and expenses relating to defined benefit plans, except the net interest on the net liability, is recognized in EBIT. The net interest is reflected in the financial result.

The effects of remeasurements of the net defined benefit liability are reflected in other comprehensive income. They consist of actuarial gains and losses, the return on plan assets, and changes in the effects of the asset ceiling, less the respective amounts included in net interest for the last two components. Deferred taxes relating to the effects of remeasurements are also recognized in other comprehensive income.

Other Provisions

Other provisions are measured in accordance with IAS 37 (Provisions, Contingent Liabilities and Contingent Assets) or, where applicable, IAS 19 (Employee Benefits). Where the cash outflow to settle an obligation is expected to occur after one year, the provision is recognized at the present value of the expected cash outflow. Claims for reimbursements from third parties are separately recognized in other receivables if their realization is virtually certain.

If the projected obligation declines as a result of a change in the estimate, the provision is reversed by the corresponding amount and the resulting income generally recognized in the functional cost item(s) in which the original charge was recognized.

To enhance the information content of the estimates, certain provisions that could have a material effect on the net assets, financial position, and results of operations are selected and tested for their sensitivity to changes in the underlying parameters using sensitivity analysis. To reflect uncertainty about the likelihood of the assumed events actually occurring, the impact of a five-percentage-point change in the probability of occurrence is examined in each case.

Provisions for environmental protection are recognized if future cash outflows are likely to be necessary to ensure compliance with environmental regulations or to carry out remediation work based on an obligation, such costs can be reliably estimated, and no future benefits are expected from such measures.

Estimating the future costs of environmental protection and remediation involves many uncertainties, particularly with regard to the status of laws, regulations, and the information available about conditions in the various countries and at the individual sites. Significant factors in estimating the costs include previous experiences in similar cases, the conclusions in expert opinions obtained for existing environmental programs, current costs, and new developments affecting these costs. Also taken into consideration are management’s interpretation of current environmental laws and regulations, the number and financial position of third parties that may become obligated to participate in any remediation costs on the basis of joint liability, and the remediation methods likely to be deployed. Changes in these assumptions could impact future reported results.

Taking into consideration experience gained to date regarding environmental matters of a similar nature, Covestro’s management believes the existing provisions to be adequate based upon currently available information. Given the business environment in which the Covestro Group operates and the inherent difficulties in accurately estimating environmental liabilities, material additional costs beyond the amounts accrued may be incurred under certain circumstances. It may transpire during remediation work that additional expenditures are necessary over an extended period and that these exceed existing provisions and cannot be reasonably estimated.

Provisions for restructuring are based either on a legal or a constructive external obligation. They only cover expenses that arise directly from restructuring measures, are necessary for restructuring, and are not related to future business operations. Such expenses include severance payments to employees and compensation payments in respect of rented property that can no longer be used. Prior to recognition of this type of provision, the associated assets are tested for impairment.

Restructuring measures may include the sale or termination of business units, site closures, relocations of business activities, leveraging of portfolio synergies, or fundamental reorganizations of business units. The respective provisions are recognized when a detailed restructuring plan has been drawn up, resolved by the responsible decision-making level of management, and communicated to the affected employees and/or their representatives. Provisions for restructuring are generally recognized at the present value of future cash outflows.

As a company with international operations, the Covestro Group is exposed to numerous legal risks for which provisions for litigation must be recognized under certain conditions – especially in the areas of product liability, competition and antitrust law, patent disputes, tax law, environmental law, and compliance issues such as corruption and export control.

Litigation and other judicial proceedings often raise complex issues and are subject to many uncertainties and complexities including, but not limited to, the facts and circumstances of each particular case, the jurisdiction in which each suit is brought, and differences in applicable law. The outcomes of currently pending and future proceedings generally cannot be predicted. Judgment in court proceedings, regulatory decisions, or the conclusion of a settlement may result in the Covestro Group incurring charges for which no accounting measures have been taken for lack of reasonable estimate or which exceed established provisions and insurance coverage.

The Covestro Group considers the need for accounting measures in respect of pending or future litigations, and the extent of any such measures, on the basis of the information available to its Law, Intellectual Property & Compliance corporate function and in close consultation with legal counsel acting for the Covestro Group.

Where it is more likely than not that such litigation will result in an outflow of resources that is already reasonably estimable, a provision for litigation is normally recognized in the amount of the present value of the expected cash outflows. Such provisions cover the estimated unavoidable payments to the plaintiffs, court and procedural costs, attorney costs, and the cost of potential settlements.

It is often impossible to reliably determine the existence of a present obligation or reasonably estimate the probability that a potential outflow of resources will result from pending or future litigation. Due to the special nature of these litigation, provisions are generally not established until initial settlements allow an estimate of potential amounts or judgments have been issued, and not before at least a range of possible legal outcomes of such litigations can be determined. Provisions for legal defense costs are recognized if it is probable that material costs will have to be incurred for external legal counsel to defend the company's legal position and an outflow of resources can generally be expected.

Internal and external legal counsels evaluate the current status of the material legal risks to the Covestro Group at the end of each reporting period. The need to recognized or adjust a provision and the amount of the provision or adjustment are determined on this basis. Adjusting events are reflected up to the date of preparation of the consolidated financial statements.

→ See note 26 "Legal Risks."

Personnel-related provisions are mainly those recorded for variable one-time payments, individual performance awards, long-service awards, severance payments in connection with early retirement arrangements, surpluses on long-term accounts, and other personnel costs. Since January 1, 2022, calculation of the provision for short-term variable compensation ("Covestro Profit Sharing Plan", "Covestro PSP") has been based not only on the achievement of financial performance indicators such as Earnings Before Interest , Taxes, Depreciation and Amortization (EBITDA), Free Operating Cash Flow (FOCF), and Return on Capital Employed (ROCE) above Weighted Average Cost of Capital (WACC), but also on a sustainability component measured on the basis of selected environmental, social, and governance (ESG) criteria. In fiscal 2022, measurement was based on selected environmental criteria.

Obligations under share-based compensation programs that provide for awards payable in cash are also included in personnel-related provisions ("Prisma"). The compensation of the Board of Management of Covestro AG and of managerial employees includes cash compensation based on the share price that are earned with lock-up periods and are reflected in profit or loss as personnel expenses in line with the consideration paid in the performance period. They are measured using a subscription price model at the time of granting and at each reporting date in accordance with IFRS 2 (Share-based Payment). In 2021, Prisma was expanded to include a sustainability component that covers Covestro's target for reducing greenhouse gas emissions (CO_2 equivalents, CO_2e).

Miscellaneous provisions include those for other liabilities, for product liability, for warranty, and insurance payments. Rebates to be granted to customers, on the other hand are reported under refund liabilities.

Other Receivables and Liabilities

Other receivables are measured at fair value plus the transaction costs directly attributable to the acquisition of the asset.

Pending Transactions

Pending transactions relating to contributions in kind ("executory contracts"), i.e., agreements in relation to which (to a degree) neither the service nor the consideration has been rendered, are not recognized in the statement of financial position on the reporting date if there is no risk of a loss on the reporting date. If there is the risk of a loss, this is generally anticipated in the form of provisions if all the other requirements are met. In contrast, gains anticipated from such agreements on the reporting date may not be recognized in the statement of financial position. Examples of executory procurement contracts include contracts regarding the procurement of energy for the operation of production facilities, which also includes what are known as power purchase agreements (PPA) for the procurement of power from renewable energy. In comparison, pending transactions in the area of the application of the rules regarding financial instruments (financial derivatives) are to be recognized on the reporting date in the amount of the negative fair value if a loss is expected and in the amount of the positive fair value if a gain is expected.

Impairment Testing

If there are indications that an individual intangible asset that does not constitute goodwill (other intangible asset) or property, plant and equipment may be impaired, the recoverable amount is compared to the carrying amount to determine whether it is higher or lower. The recoverable amount is generally the higher of the value in use or the fair value less costs of disposal. If the recoverable amount does not exceed the respective carrying amount, an impairment loss is recognized in profit or loss in the amount of the difference between the carrying amount and the recoverable amount. If the reasons for a previously recognized impairment loss no longer apply, the impairment loss is reversed in profit or loss provided that the reversal does not cause the carrying amount to exceed the original (amortized) cost of acquisition or production. Impairment losses and any impairment loss reversals are recognized in the functional cost in the same way as depreciation and amortization, depending on the use of the respective assets.

In addition to impairment testing of individual items of property, plant and equipment and other intangible assets, cash-generating units are globally tested if there is indication of impairment. Recognized goodwill is tested for impairment if there is indication of impairment, but at least once a year. Testing is generally done in the fourth quarter at the level of (groups of) cash-generating units.

A cash-generating unit is the smallest identifiable group of assets that generates cash inflows that are largely independent of the cash inflows from other assets or groups of assets. As a rule, Covestro considers strategic business entities to be cash-generating units. They represent the reporting level below the seven business entities that form the two reportable segments, Performance Materials and Solutions & Specialties. In cases where recognized goodwill in groups of cash-generating units is tested for impairment annually, the level tested is the relevant business entity.

If recognizing an impairment loss is required at the level of a CGU or group of CGUs, goodwill is written down first. In cases where the necessary impairment loss exceeds the goodwill written down, the remaining charge is distributed across other noncurrent, nonfinancial assets in proportion to their carrying amount. The impairment loss on goodwill is reported in other operating expenses. Impairment losses on goodwill may not be reversed.

The recoverable amount of a CGU or group of CGUs is equal to the fair value less costs of disposal. This calculation is based on the present value of the future cash flows since no market price can be determined for the individual units. The forecasts of future cash flows for determining the recoverable amount are based on the Covestro Group's current planning, which generally extends over 10 years, although a shorter detailed planning period of generally five years is used for assessment purposes. In certain cases, shorter or longer planning horizons are also considered if advisable due to specific assumptions underlying the planning. Assumptions made for purposes of forecasting cash flows mainly concern future selling prices and volumes, costs, market growth rates, economic cycles, and exchange rates. Changes in these assumptions are based on the Group's own estimates and external sources of information. Where the recoverable amount is the fair value less costs of disposal, this is measured from the viewpoint of an independent market participant. Cash flows beyond the detailed planning period are determined on the basis of the respective individual growth rates derived from market information and the associated long-term business expectations. The measurement of fair value less costs of disposal is based on unobservable inputs ("Level 3" of the fair value hierarchy).

The net cash inflows are discounted at the weighted average cost of capital (WACC), which is calculated as the weighted average cost of equity and cost of debt. To take into account the risk and return profile of the Covestro Group, an after-tax cost of capital is calculated, and a specific capital structure is defined via benchmarking against comparable companies in the same industry sector ("peer group"). The cost of equity corresponds to the return expected by shareholders, while the cost of debt is based on the terms at which the peer group can obtain long-term financing. In principle, both components are derived from capital market information.

The monitoring and management structure for recognized goodwill and the capital cost factors and growth rates used in annual impairment testing are presented in the following table for each CGU or group of CGUs. The growth assumptions reflect, in particular, economic cycles over several years as well as expectations for capacity and the market for each unit to be tested.

Steering- and monitoring level of goodwill and important valuation parameters for the central impairment test in the 4th quarter

Impairment testing level or goodwill carrying unit	Reporting level[1]	Segment	Goodwill in million €		Cost of capital in %		Terminal value growth rate in %
			2021	2022	2021	2022	2022
Standard Diphenylmethan-Diisocyanat (SMDI)	Strategic Business Area	Performance Materials	49	51	6.6	7.9	1.5
Standard Toluylen-Diisocyanate (STDI)	Strategic Business Area	Performance Materials	-	-	6.6	7.9	1.5
Standard Polyether-Polyols (SPET)	Strategic Business Area	Performance Materials	15	-	6.6	7.9	1.0
Standard Polycarbonate (SPCS)	Strategic Business Area	Performance Materials	43	43	6.6	7.9	1.0
Engineering Plastics (EP)	Strategic Business Area	Solutions & Specialties	78	79	6.6	7.9	1.5
Tailored Urethanes (TUR)	Business Entity	Solutions & Specialties	17	-	6.6	7.9	1.1
Tailored Diphenylmethan-Diisocyanat (TMDI)	Strategic Business Area	Solutions & Specialties	-	-	6.6	7.9	1.1
Tailored Polyether-Polyols (TPET)	Strategic Business Area	Solutions & Specialties	-	-	6.6	7.9	1.1
Coatings & Adhesives (CA)	Business Entity	Solutions & Specialties	534	535	6.8	8.0	1.5
Powder Coating Resins (PCR)	Strategic Business Area	Solutions & Specialties	-	-	6.8	8.0	2.0
Thermoplastic Polyurethanes (TPU)	Strategic Business Area	Solutions & Specialties	16	16	6.6	7.9	1.5
Other	Strategic Business Area	Solutions & Specialties	5	5	6.6	7.9	0.0 –1.8

[1] The business entity level is used for impairment testing of recognized goodwill if this is performed at the level of groups of cash-generating units. At the level of the strategic business area as a cash-generating unit, the central impairment test is performed on property, plant and equipment and other intangible assets, as well as any directly allocated goodwill.

In fiscal 2022, Russia's war against Ukraine launched in February led to considerable negative changes in Covestro's economic environment. In particular, the massive increase in energy prices, which can only be passed on to the customers to a limited degree in 2022, and anticipated weak demand as a consequence of the global economic slowdown resulted in a deterioration in the Group's business prospects compared with the previous year. In view of this, the fact that Covestro's market capitalization had already fallen below the Group's equity in the second quarter of 2022, and, furthermore, that there was a significant increase in borrowing costs in 2022, all the cash-generating units were subjected to impairment testing if it could not be ruled out on the basis of previous calculations and the Group's current unit-specific planning that the recoverable amount would fall below the carrying amount of the relevant unit.

The impairment testing performed centrally in the fourth quarter of 2022 determined that the recoverable amount of the cash-generating units SPET and STDI in the Performance Materials segment and of TMDI, PCR, and the goodwill-carrying unit TUR in the Solutions & Specialties segment was a total of €451 million below the carrying amount. The carrying amount including the net working capital of these cash-generating units and the goodwill attributed to TUR totaled €2,512 million (STDI: €1,125 million, SPET: €967 million) on the reporting date. After impairment losses of €18 million were already recognized for the SPET unit as early as at the half-year point in 2022 as the result of ad hoc centralized impairment testing, a further €418 million in impairment losses was consequently recognized in the fourth quarter as a result of the central impairment testing. These expenses were reported under production costs (€355 million), selling expenses (€46 million), and other operating expenses (€17 million). In the case of TMDI, the carrying amount exceeds the recoverable amount by €40 million, with an analysis of the carrying amount structure and the related recoverability of the individual assets showing that higher individual valuations could be assumed in each case.

The table below provides an overview of the impairments recorded per area and of the impaired balance sheet item:

Overview of the results of the central impairment testing activities of 4th quarter 2022

Impairment testing level	Impairment in million €	Goodwill	Other Intangibles, especially marketing & distribution rights	Plant installations and machinery	Land and buildings
Standard Toluylen-Diisocyanate (STDI)	99	-	-	45	54
Standard Polyether-Polyole (SPET)	249	-	-	236	13
Tailored Urethanes (TUR)	17	17	-	-	-
Tailored Diphenylmethan-Diisocyanat (TMDI)	7	-	-	6	1
Powder Coating Resins (PCR)	46	-	46	-	-

Taking into account the impairment of individual property, plant and equipment and other intangible assets, impairment losses in fiscal 2022 totaled €463 million (previous year: €5 million). Of this sum, €387 million was attributable to the Performance Materials segment and €76 million to the Solutions & Specialties segment. Impairment loss reversals on property, plant and equipment and intangible assets amounted to €1 million (previous year: €3 million).

→ See note 13 „Goodwill and Other Intangible Assets" and note 14 "Property, Plant and Equipment."

The impairment losses can be attributed, in particular, to the negative changes in the economic environment, which directly and indirectly negatively affected various measurement parameters. On the one hand, when forecasting future cash flows, the negative macroeconomic developments were taken into account in the Group's planning on which the valuation model is based, while on the other, the considerable increases in the price of raw materials and energy resulted in generally higher capital commitment, with the cost of capital as such increasing due to the rise in interest rates. As a consequence of the changed economic parameters, declining sales volume coupled with falling gross product margins was taken into account at short notice for the impaired cash-generating units of the Performance Materials segment. In the case of the TMDI cash-generating unit/the TUR goodwill-carrying unit, the anticipated sales volumes were likewise significantly reduced compared with the previous year's planning, while it was assumed at short notice that these would remain approximately at the current fiscal year's level, which was estimated to be significantly below the prior-year level at the valuation date. An assumption was made that raw material and energy prices would normalize across all cash-generating units in the medium term and that the market would begin to recover, this going hand in hand with a normalization of the supply and demand situation in the subsequent years. Overall, average annual volume increases in the mid-single-digit percentage range were taken into account for these cash-generating units within the detail planning period in the valuation model. For SPET, this approximately equates to a return to the precrisis level of fiscal 2021. In the case of STDI, SPET, and TUR, it was assumed that EBITDA growth would be disproportionately high compared with volume growth through the end of the detailed planning period. The assumption was made that TMDI would undergo an approximately proportionate development.

The cash-generating unit PCR was acquired as part of the acquisition of the Resins & Functional Materials business from Koninklijke DSM N.V., Heerlen (Netherlands), in 2021. The impairment loss recognized for this CGU resulted primarily from reduced business expectations compared with the acquisition date. The unit's carrying amount was marked by the capitalization of existing customer relationships at the time of acquisition, the valuations of which were largely based on business plans founded on more positive economic parameters at the time. The negative macroeconomic developments being taken into account in the unit's current earnings planning resulted in the recoverable amount derived from this planning no longer covering the carrying amount, which was largely based on more positive business expectations. Average annual volume increases in the mid-single-digit percentage range and above-average EBITDA growth were taken into account for the detailed planning period.

The carrying amount of the CA business entity includes a considerable proportion of goodwill valued at €535 million. The annual impairment testing was based on a detailed planning period of three years, in which it was assumed that there would be volume increases in the mid- to high-single-digit percentage range and above-average EBITDA growth. A key planning assumption made was that the current economic crisis would be overcome by 2025. In view of the high degree of uncertainty regarding future business performance, alternative planning calculations were also taken into account in the review of CA's goodwill. On the one hand, it was assumed that the overall economy would recover more slowly, especially in EMLA, and that energy and raw material costs would rise, with corresponding effects on sales volumes, investment behavior, and profitability. On the other hand, a scenario was imagined in which the energy and raw material costs would normalize more quickly than generally expected and the current economic crisis would have less of a negative impact on sales volumes. In each scenario, there was an everlasting assumption of a level which was representative of CA based on the original business and earnings plans, representing the long-term business expectations of CA once the economic crisis has been overcome. The individual planning calculations were given probability weightings that reflect Covestro's best estimates at the time of valuation even though the situation remains characterized by a high degree of uncertainty. No impairment loss was recognized.

Overall, management believes the estimates of the useful lives of certain assets, assumptions concerning the macroeconomic environment and developments in the industries in which the Covestro Group operates, and estimates of the discounted future cash flows to be appropriate. Changes in the assumptions or circumstances could nevertheless necessitate corrections, leading to additional impairment losses or – except in the case of goodwill – to reversals of previously recognized impairment losses if developments are contrary to expectations. In a sensitivity analysis, the assumption was made that there would be a 10% reduction in the future free operating cash flow, a 10% increase in the WACC, or a one-percentage-point reduction in the long-term growth rate for all the cash-generating units or groups of cash-generating units to which goodwill is allocated. Based on these scenarios, there would be no need to recognize an impairment loss for any of the cash-generating units or groups of cash-generating units with the exception of the cash-generating units which saw impairment losses in fiscal 2022. The same applies on the measurement date to other deviations from the assumptions used in impairment testing that were deemed possible. Nevertheless, if the gradual normalization of the economic situation assumed for the determination of the recoverable amount of the individual cash-generating units, in particular the situation on the raw material and energy markets, as well as the imbalance of global supply and demand, materially affects the recoverability of the individual cash-generating units in the next fiscal year, this may lead to reversals of impairment losses. Following recognition of the impairment losses, the recoverable amounts of the SPET, STDI and PCR cash-generating units was the same as their respective carrying amounts as of the measurement date.

Fair Value

According to IFRS 13 (Fair Value Measurement), fair value is the price that would be received to sell an asset or paid to transfer a liability on the measurement date in an orderly transaction in what is known as the primary market or, if such is not available, in the most favorable market to which the Covestro Group has access at that time. In essence, the fair value of a liability reflects the risk of nonfulfillment.

If available, the Covestro Group calculates the fair value of a financial instrument based on quoted prices in an active market for this instrument. A market is regarded as active when transactions for the respective asset or liability take place with sufficient frequency and volume to provide regular pricing information on the reporting date.

If no quoted prices on an active market exist, measurement methods are used which maximize the use of relevant observable inputs and minimize the use of unobservable inputs. All factors taken into account by market participants in pricing such a transaction are incorporated into the relevant method of measurement.

Depending on the asset or liability category, specific information is provided about the principles for using or determining fair value. In the Covestro Group, this generally applies to items in the financial statements as well as disclosures in the notes.

Expected Credit Losses (ECL) Model

The Covestro Group calculates a risk provision for expected credit losses for the following items:

- Financial assets measured at amortized cost
- Debt instruments measured at fair value through other comprehensive income
- Financial guarantees and loan commitments
- Contract assets

For financial instruments without a significant increase in credit risk since initial recognition, the amount of the risk provision for expected credit losses equals the credit losses expected to occur within the next 12 months. For financial instruments with a significant increase in credit risk, a risk provision is calculated in the amount of the credit losses expected over their residual maturity.

Relevant data from within and outside the company that can be obtained with reasonable effort is considered when determining whether the credit risk has increased substantially since initial recognition. For instance, the financial data of counterparties or customers, ratings, the payment histories of counterparties or customers, and forward-looking information are all assessed. It is assumed that a significant increase in credit risk has occurred when the financial asset is more than 30 days past due.

A default event has occurred when the Covestro Group comes to the conclusion that the counterparty is highly unlikely to be able to meet its payment obligations in full.

In the case of trade accounts receivable and contract assets, the amount of the risk provision is equal to the credit losses expected over their remaining term.

On each reporting date, the Covestro Group determines whether financial assets measured at amortized cost or at fair value through other comprehensive income are credit impaired. Indicators of possible credit impairment of a financial asset include observable data regarding the following events:

- Significant financial difficulties of the issuer or borrower
- A breach of contract, such as default or delinquency
- Concessions that Covestro makes to the borrower for financial or legal reasons relating to the financial difficulties of the borrower that it would not otherwise make
- Impending bankruptcy or other impending reorganization proceedings on the part of the borrower
- The loss of an active market for this financial asset

The gross carrying amount of a financial asset is derecognized when the Covestro Group comes to the conclusion that the counterparty is no longer able to meet its payment obligations. Following derecognition, the Covestro Group assumes that it will no longer be able to recover any significant amounts.

Noncurrent Assets and Disposal Groups Held for Sale

Noncurrent assets and disposal groups classified as held for sale are carried at the lower of the carrying amount or fair value less the costs of disposal. The costs of disposal are the additional costs incurred directly attributable to the disposal of an asset or a disposal group with the exception of financing costs and income tax expense. Disposal groups also include liabilities which are classified as held for sale. The criteria for classifying an asset or a disposal group as held for sale are only fulfilled when the sale is highly probable and the asset or disposal group may be sold immediately in its current condition. The disposal must be possible, as expected, within one year from the date of classification as a completed sale. Assets to be discontinued do not constitute assets or disposal groups held for sale.

Property, plant and equipment and intangible assets classified as held for sale are not depreciated/amortized. Instead, they are recognized at fair value less the costs of disposal if this is lower than the carrying amount. After classification of an asset or disposal group as held for sale, its recoverability must be reviewed on an ongoing basis.

4. Segment and Regional Reporting

The Board of Management of Covestro AG, as the chief operating decision maker of the Covestro Group, allocates resources to the reportable segments and assesses their performance. The reportable segments are identified, and the disclosures selected, in line with the internal financial reporting system (management approach).

The segments pursue the following activities:

Performance Materials

The Performance Materials segment focuses on developing, producing, and reliably supplying high-performance materials such as standard polyurethanes and polycarbonates, as well as base chemicals. This includes diphenylmethane diisocyanate (MDI), toluene diisocyanate (TDI), long-chain polyols, and polycarbonate resins, among others. These materials are used in sectors such as the furniture and wood processing industry, the construction industry as well as the automotive and transportation industry, for example in roof structures, insulation for buildings and refrigerators, mattresses, and car seats, among other applications.

Solutions & Specialties

The Solutions & Specialties segment consolidates Covestro's solutions and specialties businesses, and combines chemical products with application technology services. A fast pace of innovation is a key success factor since customer requirements change quickly. Covestro's Solutions & Specialties business comprises a variety of polymer products including polycarbonates, precursors for coatings and adhesives, MDI specialties and polyols, thermoplastic polyurethanes, specialty films, and elastomers. They are used in sectors such as the automotive and transportation industry; the electrical, electronics, and household appliances industry; the construction industry; and the healthcare industry. These materials include composite resins for wind turbine rotor blades; precursors for coatings and adhesives, laptop cases, floodlights, and high-quality specialty films.

Business activities that cannot be allocated to any of the aforementioned segments, costs associated with central corporate functions, higher or lower expenses resulting from more or less favorable Covestro share performance as part of long-term variable compensation, and the difference between the imputed income tax payments of the reportable operating segments and the actual income taxes paid by the Covestro Group can be found in the segment reporting under "Others/ Consolidation." External sales are generated primarily from the sale of energy, site management services, and rentals and leasing.

As a general rule, the segment data is calculated in accordance with the International Financial Reporting Standards (IFRSs) listed in note 3 "Accounting Policies and Valuation Principles" with the following exceptions:

- Intersegment sales are generally based on arm's length transactions between the units that make up Covestro's segments. Market prices and, in exceptional cases, cost of goods sold serve as the settlement basis.
- Property, plant and equipment and intangible assets - except goodwill, including noncurrent assets used jointly by both segments - and the associated depreciation, amortization, and impairment losses are allocated according to a principle based on major use. Goodwill is allocated at the level of the business entities or strategic business entities. The strategic business entity level corresponds to the reporting level below the seven business entities, which form the two reportable segments Performance Materials and Solutions & Specialties.
- EBIT and EBITDA are not defined in the IFRSs. EBIT is equal to income after income taxes plus financial result and income taxes. EBITDA is EBIT plus amortization and impairment losses on intangible assets, and depreciation and impairment losses on property, plant and equipment, less impairment loss reversals.
- Free operating cash flow, which is not defined in the IFRSs either, equals cash flows from operating activities less cash outflows for additions to property, plant, equipment and intangible assets. The income taxes paid that make up part of cash flows from operating activities are not directly allocated to any of the company's units. For purposes of calculating cash flows from operating activities, the income taxes paid by a reportable segment are determined in fiscal 2021 by multiplying the effective tax rate (ETR) expected for the fiscal year by that segment's EBIT. This expected effective tax rate was 25% for 2021. Since 2022, an imputed tax rate of 25% has been used for the calculation.
- Trade working capital comprises inventories, trade accounts receivable, and contract assets, less trade accounts payable, contract liabilities, and refund liabilities.

EBIT, EBITDA, and free operating cash flow per segment include intersegment sales and, in each case, the effects of the aforementioned allocation of property, plant and equipment and intangible assets, including noncurrent assets used jointly by both segments, and the associated depreciation, amortization, impairment losses, and impairment loss reversals.

In line with internal reporting to the Board of Management since July 1, 2022, intersegment sales also include sales at cost of goods sold. However, this has no effect on the level of the earnings measures EBIT and EBITDA per segment.

The following tables show the segment reporting data:

Key data by segment

	Performance Materials	Solutions & Specialties	Others/ Consolidation	Covestro Group
	€ million	€ million	€ million	€ million
2022				
Sales (external)	9,095	8,558	315	17,968
Intersegment sales[1]	2,967	35	(3,002)	–
Sales (total)	12,062	8,593	(2,687)	17,968
EBITDA[2]	951	825	(159)	1,617
EBIT[2]	(28)	461	(166)	267
Free operating cash flow[3, 4]	544	195	(601)	138
Cash outflows for additions to property, plant and equipment and intangible assets	547	277	8	832
Depreciation, amortization and impairment losses	(979)	(364)	(7)	(1,350)
of which impairment losses	(387)	(76)	–	(463)
of which impairment loss reversals	–	1	–	1
Research and development expenses	(85)	(273)	(3)	(361)
2021				
Sales (external)	8,142	7,554	207	15,903
Intersegment sales[1]	2,608	27	(2,635)	–
Sales (total)	10,750	7,581	(2,428)	15,903
EBITDA[2]	2,572	751	(238)	3,085
EBIT[2]	2,003	503	(244)	2,262
Free operating cash flow[3]	1,387	145	(103)	1,429
Cash outflows for additions to property, plant and equipment and intangible assets	488	273	3	764
Depreciation, amortization and impairment losses	(569)	(248)	(6)	(823)
of which impairment losses	(3)	(2)	–	(5)
of which impairment loss reversals	3	–	–	3
Research and development expenses	(104)	(227)	(10)	(341)

[1] In line with the internal reporting to the Board of Management since July 1, 2022, the figures also include sales generated in the amount of the cost of sales. For the purposes of comparability, the segment data is presented on a standardized basis.

[2] EBITDA and EBIT include the effect of intersegment sales on earnings.

[3] Since 2022, an assumed tax rate of 25% has been used to determine the income taxes paid by the reportable segments (previous year: expected effective tax rate).

[4] The difference between the income tax payments by the reportable operating segments and the income taxes actually paid by the Covestro Group is taken into account under "Other/Consolidation" and amounted to -€429 million for the year 2022.

Trade working capital by segment

	Dec. 31, 2021	Dec. 31, 2022
	€ million	€ million
Performance Materials	1,392	1,135
Solutions & Specialties	1,560	1,592
Total of reportable segments	**2,952**	**2,727**
Others/ Consolidation	–	(21)
Trade working capital	**2,952**	**2,706**
Inventories	2,914	2,814
Trade accounts receivable	2,343	2,011
Trade accounts payable	(2,214)	(2,016)
IFRS 15 items[1]	(91)	(103)

[1] The item includes contract assets, contract liabilities, and refund liabilities.

Information by Geographical Areas

The following table shows information by geographical area. The EMLA region consists of Europe, the Middle East, Africa and Latin America except Mexico, which together with the United States and Canada forms the NA region. The APAC region includes Asia and the Pacific region.

Regional reporting[1]

	EMLA	NA	APAC	Total
	€ million	€ million	€ million	€ million
2022				
Sales (external) by market	7,600	4,639	5,729	17,968
Sales (external) by point of origin	7,603	4,696	5,669	17,968
2021				
Sales (external) by market	6,876	3,553	5,474	15,903
Sales (external) by point of origin	6,914	3,617	5,372	15,903

[1] No further presentation of interregional sales is provided, as these are neither reported separately to, nor do they influence the EBIT and EBITDA reported to the Board of Management of Covestro AG.

External sales by market and noncurrent assets can be broken down by country as follows:

Sales (external) by market and noncurrent assets by country

	Sales (external) by market	Noncurrent assets[1]
	€ million	€ million
2022		
Germany	2,216	2,068
United States	3,869	1,796
China	3,644	1,371
Other	8,239	2,193
Total	**17,968**	**7,428**
2021		
Germany	1,918	2,188
United States	2,962	1,714
China	3,544	1,536
Other	7,479	2,305
Total	**15,903**	**7,743**

[1] Noncurrent assets do not include other financial assets or deferred tax assets.

Information on Major Customers

In fiscal 2022 and the previous year, no customer accounted for more than 10% of the Covestro Group's total sales.

Reconciliation

The following table shows the reconciliation of EBITDA of the segments to income before income taxes of the Group:

Reconciliation of segments' EBITDA to group income before income taxes

	2021	2022
	€ million	€ million
EBITDA of reportable segments	3,323	1,776
EBITDA of Others/Consolidation	(238)	(159)
EBITDA	**3,085**	**1,617**
Depreciation, amortization, impairment losses and impairment loss reversals of reportable segments	(817)	(1,343)
Depreciation, amortization, impairment losses and impairment loss reversals of Others/Consolidation	(6)	(7)
Depreciation, amortization, impairment losses, and impairment loss reversals	**(823)**	**(1,350)**
EBIT of reportable segments	2,506	433
EBIT of Others/Consolidation	(244)	(166)
EBIT	**2,262**	**267**
Financial result	(77)	(137)
Income before income taxes	**2,185**	**130**

5. Changes in the Scope of Consolidation

5.1 Scope of Consolidation and Investments

As of December 31, 2022, the scope of consolidation comprised Covestro AG and 60 (previous year: 66) consolidated companies.

Effective January 14, 2022, the purchase agreement for the 30% of the shares in Japan Fine Coatings Co., Ltd., Ibaraki (Japan), previously held by the former joint venture partner JSR Corporation, Tokyo (Japan), was signed and executed. Covestro is now sole owner of the company.

Reconciliation of acquired noncontrolling interests

	€ million
Carrying amount of acquired noncontrolling interests	10
Consideration paid to noncontrolling interests	(4)
Increase in equity attributable to owners of the parent company	**6**

Covestro Invest GmbH, Leverkusen (Germany), was consolidated for the first time effective April 1, 2022. This company had previously been classified as an immaterial subsidiary. The purpose of Covestro Invest GmbH is to acquire, hold, and manage the company's investments, provide services for third parties, especially within the scope of intragroup management of investments, in each case insofar as these do not constitute activities requiring authorization under the German Banking Act (KWG), and the assumption of personal liability and management functions for commercial partnerships.

The decrease in the number of consolidated companies in the reporting year 2022 is primarily attributable to intragroup mergers of consolidated companies, which were transferred in connection with the acquisition of the Resins & Functional Materials (RFM) business from Koninklijke DSM N.V., Heerlen (Netherlands). As of June 1, 2022, Covestro Coating Resins B.V., Zwolle (Netherlands), Covestro Desotech B.V., Hoek van Holland (Netherlands), and Covestro Resins B.V., Zwolle (Netherlands) were merged into Covestro (Netherlands) B.V., Geleen (Netherlands), and Covestro Coating Resins, Inc., Wilmington, Massachusetts (USA), and Covestro Desotech Inc., Elgin, Illinois (USA), were merged into Covestro LLC, Pittsburgh, Pennsylvania (USA). In addition, Covestro Coating Resins Spain S.L., Barcelona (Spain) was merged into Covestro, S.L., Barcelona (Spain), while Covestro Resins (ROA) Ltd., Taipei City (Taiwan, Greater China), was merged into Covestro (Taiwan) Ltd., Kaohsiung City (Taiwan, Greater China).

As of July 1, 2022, the consolidated company Covestro GmbH, Leverkusen (Germany), was merged with Covestro Deutschland AG, Leverkusen (Germany).

Covestro Polymers (Zhuhai) Company Limited, Zhuhai (China), was consolidated for the first time with effect from September 30, 2022.

The scope of consolidation includes the joint operation LyondellBasell Covestro Manufacturing Maasvlakte V.O.F, Rotterdam (Netherlands), as of December 31, 2022, which is unchanged from the previous year. Pursuant to IFRS 11 (Joint Arrangements), Covestro's shares of this company's assets, liabilities, revenues, and expenses are included in the consolidated financial statements in accordance with Covestro's rights and obligations. The main purpose of LyondellBasell Covestro Manufacturing Maasvlakte V.O.F is the joint production of propylene oxide (PO) for Covestro and its partner LyondellBasell.

Additionally, two (previous year: two) associated companies are accounted for in the consolidated financial statements using the equity method.

Eight (previous year: ten) subsidiaries and two (previous year: two) associated companies that in aggregate are immaterial to the Covestro Group's net assets, financial position, and results of operations are not consolidated but recognized at cost. The immaterial subsidiaries each accounted for no more than 0.1% of Group sales, equity, or total assets in the reporting year 2022.

The information on the companies included in the consolidated financial statements and on the Covestro Group's shareholdings pursuant to Section 313 (2) of the German Commercial Code (HGB) and the list of domestic subsidiaries that made use of the exemption provisions pursuant to Sections 264 (3) and 264b of the German Commercial Code (HGB) in fiscal 2022 are components of the consolidated financial statements submitted for publication to Germany's Federal Gazette (Bundesanzeiger).

The disclosures on shareholdings in accordance with the requirements of Section 313 (2) HGB are shown in the following tables. The first table contains the following fully consolidated companies:

Fully consolidated companies

Company name	Place of business	Covestro's interest in %
EMLA		
Covestro (France)	Fos-sur-Mer (France)	100
Covestro (Netherlands) B.V.	Geleen (Netherlands)	100
Covestro (Slovakia) Services s.r.o.	Bratislava (Slovakia)	100
Covestro Amulix V.o.F.	Zwolle (Netherlands)	72
Covestro Bio-Based Coatings B.V.	Zwolle (Netherlands)	100
Covestro Brunsbüttel Energie GmbH	Brunsbüttel (Germany)	100
Covestro Coating Resins China Holding B.V.	Zwolle (Netherlands)	100
Covestro Deutschland AG	Leverkusen (Germany)	100
Covestro Elastomers	Romans-sur-Isère (France)	100
Covestro First Real Estate GmbH	Leverkusen (Germany)	100
Covestro Indústria e Comércio de Polímeros Ltda.	São Paulo (Brazil)	100
Covestro Intellectual Property GmbH & Co. KG	Leverkusen (Germany)	100
Covestro International SA	Fribourg (Switzerland)	100
Covestro Invest GmbH	Leverkusen (Germany)	100
Covestro Niaga B.V.	Zwolle (Netherlands)	100
Covestro NV	Antwerp (Belgium)	100
Covestro Polyurethanes B.V.	Nieuwegein (Netherlands)	100
Covestro Procurement Services GmbH & Co. KG	Leverkusen (Germany)	100
Covestro Resins (Germany) GmbH	Meppen (Germany)	100
Covestro Resins China Holding B.V.	Zwolle (Netherlands)	100
Covestro S.r.l.	Filago (Italy)	100
Covestro Second Real Estate GmbH	Leverkusen (Germany)	100
Covestro Thermoplast Composite GmbH	Markt Bibart (Germany)	100
Covestro UK Limited	Cheadle Hulme (United Kingdom)	100
Covestro, S.L.	Barcelona (Spain)	100
Epurex Films GmbH & Co. KG	Walsrode (Germany)	100
MS Global AG in Liquidation	Köniz (Switzerland)	100
Solar Coating Solutions B.V.	Zwolle (Netherlands)	100
NA		
Covestro International Re, Inc.	Colchester, Vermont (United States)	100
Covestro International Trade Services Corp.	Wilmington, Delaware (United States)	100
Covestro LLC	Pittsburgh, Pennsylvania (United States)	100
Covestro PO LLC	Pittsburgh, Pennsylvania (United States)	100
Covestro, S.A. de C.V.	Mexico City (Mexico)	100
APAC		
Covestro (Hong Kong) Limited	Hong Kong Special Administrative Region (China)	100
Covestro (India) Private Limited	Navi Mumbai (India)	100
Covestro (Shanghai) Investment Company Limited	Shanghai (China)	100
Covestro (Taiwan) Ltd.	Kaohsiung City (Taiwan, Greater China)	97.3
Covestro (Thailand) Co., Ltd.	Bangkok (Thailand)	100
Covestro (Viet Nam) Company Limited	Ho Chi Minh City (Vietnam)	100
Covestro Eternal Resins (Far East) Ltd.	Pingtung (Taiwan, Greater China)	60
Covestro Eternal Resins (Kunshan) Co., Ltd.	Kunshan (China)	50
Covestro Far East (Hong Kong) Limited	Hong Kong Special Administrative Region (China)	100
Covestro Invest (Far East) Company Limited	Hong Kong Special Administrative Region (China)	100
Covestro Japan Ltd.	Tokyo (Japan)	100
Covestro Korea Corporation	Seoul (South Korea)	100
Covestro Material Science and Technology (Shanghai) Company Limited	Shanghai (China)	100
Covestro Polymers (China) Company Limited	Shanghai (China)	100
Covestro Polymers (Qingdao) Company Limited	Qingdao (China)	100
Covestro Polymers (Shenzhen) Co., Ltd.	Shenzhen (China)	100
Covestro Polymers (Zhuhai) Company Limited	Zhuhai (China)	100
Covestro Pty Ltd	Mulgrave (Australia)	100
Covestro Resins (Foshan) Company Ltd.	Foshan (China)	100

Fully consolidated companies

Company name	Place of business	Covestro's interest in %
Covestro Resins (Shanghai) Co., Ltd.	Shanghai (China)	100
Covestro Resins (Taiwan) Ltd.	Taipei City (Taiwan, Greater China)	100
DIC Covestro Polymer Ltd.	Tokyo (Japan)	80
Guangzhou Covestro Polymers Company Limited	Guangzhou (China)	100
Japan Fine Coatings Co., Ltd.	Ibaraki (Japan)	100
PT Covestro Polymers Indonesia	Jakarta (Indonesia)	99.9
Sumika Covestro Urethane Company, Ltd.	Hyogo (Japan)	60

According to IFRS 10 (Consolidated Financial Statements), Covestro's interest in the amount of 50% in Covestro Eternal Resins (Kunshan) Co., Ltd., Kunshan (China), is classified as a fully consolidated company due to the 57% share of voting rights.

In addition, the following joint operation have been included in the consolidated financial statements in line with Covestro's shares of its assets, liabilities, revenues and expenses:

Joint operation

Company name	Place of business	Covestro's interest in %
LyondellBasell Covestro Manufacturing Maasvlakte V.O.F	Rotterdam (Netherlands)	50

The following associated companies are accounted for in the consolidated financial statements using the equity method:

Associates accounted for using the equity method

Company name	Place of business	Covestro's interest in %
Paltough Industries (1998) Ltd.	Kibbutz Ramat Yohanan (Israel)	25
PO JV, LP	Houston, Texas (United States)	39.4

The following subsidiaries were included in the consolidated financial statements at amortized cost due to their immateriality:

Immaterial subsidiaries

Company name	Place of business	Covestro's interest in %
Asellion (Shanghai) Information Technology Co., Ltd.	Shanghai (China)	100
Covestro Intellectual Property Verwaltungs GmbH	Leverkusen (Germany)	100
Covestro Middle East FZ-LLC	Dubai (United Arab Emirates)	100
Covestro Polímer Anoním Şírketí	Istanbul (Turkey)	100
Covestro Polymers (Tianjin) Co., Ltd.	Tianjin (China)	100
Covestro Procurement Services Verwaltungs GmbH	Leverkusen (Germany)	100
Covestro sp. z o.o.	Warsaw (Poland)	100
Epurex Films Geschäftsführungs-GmbH	Walsrode (Germany)	100

The following associated companies were recognized at cost due to their immateriality:

Immaterial associate

Company name	Place of business	Covestro's interest in %
Pure Salt Baytown, LLC	Baytown, Texas (United States)	0
Technology JV, LP	Houston, Texas (United States)	33.3

The 41.2% interest in Crime Science Technology, Lille (France), is classified as a debt instrument in accordance with IAS 32 (Financial Instruments: Presentation) and is measured at fair value through profit or loss in accordance with IFRS 9 (Financial Instruments).

The following fully consolidated domestic subsidiaries made use of the exemption provisions pursuant to Section 264 (3) of the German Commercial Code (HGB) and Section 264b of the German Commercial Code (HGB) in fiscal 2022:

German exempt subsidiaries

Company name	Place of business	Covestro's interest in %
Covestro Intellectual Property GmbH & Co. KG	Leverkusen (Germany)	100
Covestro Invest GmbH	Leverkusen (Germany)	100
Covestro Procurement Services GmbH & Co. KG	Leverkusen (Germany)	100
Covestro Resins (Germany) GmbH	Meppen (Germany)	100
Covestro Thermoplast Composite GmbH	Markt Bibart (Germany)	100
Epurex Films GmbH & Co. KG	Walsrode (Germany)	100

5.2 Acquisitions and Divestitures

Acquisitions

No reportable acquisitions were made in the reporting year 2022.

Divestitures

On August 5, 2022, Covestro signed an agreement for the sale of assets and liabilities (disposal group) of the additive manufacturing business to Stratasys, a U.S.-Israeli manufacturer of 3D printers and 3D production systems. The business sold by Covestro includes employees, research and development facilities, production units, and offices in the Netherlands, the United States, China, Japan, Germany, and the United Kingdom as well as access to a large network of partners around the world. The portfolio also includes products that are part of the Resins & Functional Materials business (RFM) acquired from Koninklijke DSM N.V., Heerlen (Netherlands), in fiscal 2021. The additive manufacturing business, which is part of the Solutions & Specialties segment, offers material solutions for common polymer 3D printing processes. Covestro's decision to sell the additive manufacturing business is consistent with the optimization of its portfolio to make its organization more efficient and allow the company to sharpen its focus on the extensive range of offerings for customers in its main customer industries. The selling price amounts to €43 million and an additional payment for certain assets, less any liabilities transferred. In addition, the agreement specifies a variable earn-out payment which depends on the achievement of various success factors. The transaction is structured as an asset deal. In connection with the sale, noncurrent assets and inventories of €18 million and liabilities of €2 million were classified as held for sale in accordance with IFRS 5 (Non-current Assets Held for Sale and Discontinued Operations). The sale is expected to close in the second quarter of 2023.

Notes to the Income Statement

6. Sales

Sales are categorized according to "geographical regions and key countries" and mainly comprise sales from contracts with customers and an immaterial amount of rental and leasing sales. The table also contains a reconciliation of the breakdown of sales by reportable segments.

Breakdown of sales

	Performance Materials	Solutions & Specialties	Others/ Consolidation	Covestro Group
	€ million	€ million	€ million	€ million
2022				
EMLA	4,152	3,198	250	7,600
of which Germany	1,093	948	175	2,216
NA	2,447	2,140	52	4,639
of which United States	2,058	1,761	50	3,869
APAC	2,496	3,220	13	5,729
of which China	1,681	1,960	3	3,644
2021				
EMLA	3,878	2,835	163	6,876
of which Germany	978	843	97	1,918
NA	1,926	1,594	33	3,553
of which United States	1,620	1,313	29	2,962
APAC	2,338	3,125	11	5,474
of which China	1,572	1,969	3	3,544

The following table presents the opening and closing balances of trade accounts receivable, contract assets, and contract liabilities.

Contract balances

	Jan. 1, 2021	Dec. 31, 2021	Dec. 31, 2022
	€ million	€ million	€ million
Trade accounts receivable	1,593	2,343	2,011
Contract assets	43	62	64
Contract liabilities	22	37	56

Contract assets are recognized in case the right to consideration in exchange for goods or services that have been transferred is conditional. This occurs primarily in the event of goods delivered to external customers' consignment warehouses. Where sales are made through consignment warehouses, customers primarily obtain control over the delivered goods upon delivery to the consignment warehouse. Accordingly, contract assets are generally recognized as trade accounts receivable when invoiced.

Contract liabilities are recognized for advance payments received from customers prior to transferring goods or services. These contract liabilities are recognized as sales when the goods or services have been transferred.

Sales from performance obligations satisfied (or partially satisfied) in previous periods and recognized in fiscal 2022 amounted to €1 million (previous year: €2 million).

The changes in contract assets and contract liabilities in the reporting period resulted from the following circumstances:

Reconciliation of contract assets

	2021	2022
	€ million	€ million
Reclassification of contract assets recognized at the beginning of the reporting period to trade accounts receivable	(43)	(62)
Additions from services rendered but not yet invoiced in the reporting period	62	64
Total	**19**	**2**

Reconciliation of contract liabilities

	2021	2022
	€ million	€ million
Sales included in the balance of contract liabilities at the beginning of the reporting period	(22)	(38)
Additions from payments received less amounts recognized as sales in the reporting period	36	57
Changes in scope of consolidation	1	–
Total	**15**	**19**

The following table presents the transaction price allocated to remaining performance obligations as of the reporting date. It is broken down by the reporting periods in which recognition is expected:

Transaction price allocated to remaining performance obligations

	Dec. 31, 2021		Dec. 31, 2022
	€ million		€ million
2022	1,028	2023	1,137
2023	885	2024	867
2024	696	2025	421
2025	505	2026	367
2026	574	2027	152
2027 or later	73	2028 or later	161
Total	**3,761**	**Total**	**3,105**

The disclosures on the transaction price allocated to remaining performance obligations are based on long-term supply contracts within the meaning of IFRS 15 (Revenue from Contracts with Customers) which stipulate minimum volumes to be purchased as agreed between both parties.

Performance obligations from contracts with an original expected term of 12 months or less are excluded. Similarly, the disclosure excludes performance obligations satisfied over a certain period of time for which Covestro has the right to consideration in an amount that corresponds directly with the value of the performance completed to date and for which Covestro may recognize sales in the amount to which Covestro has the right to invoice.

The transaction price only includes variable consideration arising from contracts with customers, like sales-based or volume-based rebates or price formulas, for which the prices are derived from external, market-based indices, to the extent that they are not constrained as defined in IFRS 15.

7. Other Operating Income

Other operating income was comprised as shown in the following table:

Other operating income

	2021	2022
	€ million	€ million
Gains on retirements of noncurrent assets	8	8
Reversals of impairment losses on receivables	11	3
Reversals of unutilized provisions	–	2
Gains from derivatives	1	1
Miscellaneous other operating income	79	131
Total	**99**	**145**

Gains from derivatives in fiscal years 2021 and 2022 resulted from embedded derivatives.

Miscellaneous other operating income for the reporting period mainly included business development subsidies received in China in the amount of €71 million (previous year: €1 million) and insurance premiums received amounting to €36 million (previous year: €30 million).

8. Other Operating Expenses

Other operating expenses were comprised as shown in the following table:

Other operating expenses

	2021	2022
	€ million	€ million
Losses on retirements of noncurrent assets	(6)	(5)
Impairment losses on receivables	(5)	(12)
Losses from derivatives	(1)	(3)
Miscellaneous operating expenses	(69)	(104)
Total	**(81)**	**(124)**

Losses from derivatives in fiscal years 2021 and 2022 resulted from embedded derivatives.

Miscellaneous other operating expenses in fiscal 2022 mainly included the impairment of goodwill in the amount of €33 million (previous year: €0 million) and insurance expenses of €28 million (previous year: €43 million).

9. Personnel Expenses and Employee Numbers

Personnel expenses consisted of the following:

Personnel expenses

	2021	2022
	€ million	€ million
Salaries	(1,895)	(1,564)
Social expenses and expenses for pensions and other benefits	(403)	(431)
of which for defined contribution pension plans	(111)	(117)
of which for defined benefit and other pension plans	(115)	(114)
Total	**(2,298)**	**(1,995)**

In 2022, personnel expenses declined primarily as a result of lower expenses for short-term variable compensation as part of the Group's Covestro Profit Sharing Plan (Covestro PSP).

Average number of employees

	2021	2022
Production	11,349	11,757
Marketing and distribution	3,257	3,281
Research and development	1,421	1,485
General administration	1,530	1,490
Total	**17,557**	**18,013**
Employees in vocational training	530	526

The number of permanent or temporary employees is stated in full-time equivalents. Part-time employees are included on a pro-rated basis in line with their contractual working hours. The figures do not include employees in vocational training.

10. Financial Result

10.1 Result from Investments in Affiliated Companies

The result from investments in affiliated companies mainly comprised the result of equity-method valuation of the €19 million (previous year: €21 million) loss from the associated company PO JV, LP, Houston, Texas (United States), and the €2 million (previous year: €6 million) gain from Paltough Industries (1998) Ltd., Kibbuz Ramat Yochanan (Israel). This figure also included €2 million (previous year: €2 million) in dividend income from other affiliated companies.

→ See note 15 "Investments Accounted for Using the Equity Method."

10.2 Net Interest Expense

Net interest expense was comprised as shown in the following table:

Net interest expense

	2021	2022
	€ million	€ million
Expenses		
Interest and similar expenses	(58)	(63)
Interest expenses from forward exchange contracts	(21)	(67)
Income		
Interest and similar income	5	8
Interest income from forward exchange contracts	33	61
Total	**(41)**	**(61)**

Interest and similar expenses primarily resulted from interest expenses from leases totaling €25 million (previous year: €26 million) and bonds issued by Covestro AG totaling €25 million (previous year: €24 million). Interest income and expenses from forward exchange contracts included interest rate-driven changes in the fair value and the forward element.

10.3 Other Financial Result

The other financial result was comprised as shown in the following table:

Other financial result

	2021	2022
	€ million	€ million
Interest portion of interest-bearing provisions	(13)	(36)
Exchange gain/(loss)	1	(9)
Miscellaneous financial expenses	(11)	(16)
Total	**(23)**	**(61)**

The interest portion of interest-bearing provisions mainly includes net interest expense from pension provisions and similar obligations amounting to €18 million (previous year: €18 million). In addition, expenses of €18 million (previous year: income of €5 million) arose in fiscal 2022 from the effects of compounding and changes in interest rates as well as measurement effects from other provisions and corresponding asset surpluses.

Miscellaneous financial expenses primarily included impairment losses of €8 million for a contingent purchase price receivable from divestments, which was recognized as the present value of future cash inflows on the basis of the expected EBITDA of the divested business unit for 2021. However, the EBITDA actually achieved in 2021 was well below expectations, so no purchase price payment was made. This item also includes expenses relating to fees in the amount of €4 million (previous year: €3 million) and negative interest on bank deposits and money market funds totaling €1 million (previous year: €5 million).

11. Taxes

The breakdown of tax expenses by type is shown in the table below:

Income taxes

	2021	2022
	€ million	€ million
Current taxes	(628)	(383)
Tax expense current year	(627)	(400)
Tax income (previous year: expense) prior years	(1)	17
Deferred taxes	62	(28)
from temporary differences	55	(24)
from tax loss carryforwards and tax credits	7	(4)
Total	**(566)**	**(411)**

The deferred tax assets and liabilities were allocated to the items in the statement of financial position as shown in the table below:

Deferred tax assets and liabilities

	Dec. 31, 2021			Dec. 31, 2022		
	Deferred tax assets	Deferred tax liabilities	of which recognized in profit or loss	Deferred tax assets	Deferred tax liabilities	of which recognized in profit or loss
	€ million	€ million	€ million	€ million	€ million	€ million
Intangible assets	46	(162)	(116)	48	(81)	(33)
Property, plant and equipment	125	(297)	(172)	153	(269)	(116)
of which right-of-use assets from application of IFRS 16	–	(142)	(142)	–	(128)	(128)
Financial assets	–	(57)	(51)	3	(102)	(94)
Inventories	85	(3)	82	71	(2)	69
Receivables	5	(30)	(25)	3	(58)	(55)
Provisions for pensions and other post-employment benefits	523	(20)	(14)	70	(15)	(12)
Other provisions	104	(12)	92	61	(15)	46
Liabilities	159	(2)	157	141	(25)	116
of which lease liabilities from application of IFRS 16	135	–	135	118	–	118
Tax loss and interest carryforwards and tax credits	54	–	54	50	–	50
Total	**1,101**	**(583)**	**7**	**600**	**(567)**	**(29)**
of which noncurrent	973	(532)		386	(362)	
Offsetting	(283)	283		(255)	255	
Recognition	**818**	**(300)**		**345**	**(312)**	

No deferred tax assets were recognized for tax deductible temporary differences in the amount of €850 million (previous year: €0 million) as it is unlikely that these can be utilized within a foreseeable period.

Of the total tax loss and interest carryforwards of €1,494 million (previous year: €482 million), an amount of €292 million (previous year: €353 million) is expected to be usable within a foreseeable period. The increase in loss carryforwards was due to additional loss carryforwards in the reporting year and tax reassessments for prior years. Deferred tax assets of €48 million (previous year: €52 million) were recognized for the amount of tax loss and interest carryforwards expected to be usable.

The use of €1,202 million (previous year: €129 million) of existing tax loss and interest carryforwards was subject to legal or economic restrictions.

Expiration of unusable tax loss and interest carryforwards

	Tax loss and interest carryforwards	
	Dec. 31, 2021	Dec. 31, 2022
	€ million	€ million
Within one year	8	–
Within two years	19	–
Within three years	19	–
Within four years	15	–
Within five years	11	–
Thereafter	57	1,202
Total	**129**	**1,202**

In the reporting year, tax credits of €2 million (previous year: €2 million) were recognized.

In fiscal 2022, subsidiaries that reported losses for the reporting year or the previous year recognized net deferred tax assets totaling €62 million (previous year: €506 million) from temporary differences and tax loss carryforwards. Of this amount, €30 million (previous year: €27 million) was attributable to net deferred tax assets from tax loss and interest carryforwards. All of the deferred tax assets were considered to be unimpaired because the companies concerned were expected to generate taxable income and tax strategies ensure that the deferred tax assets will be utilized.

Deferred tax liabilities of €74 million (previous year: €13 million) were recognized in the reporting year for planned dividend payments by subsidiaries. No deferred tax liabilities were recognized for temporary differences of €120 million (previous year: €128 million) relating to shares in subsidiaries, as the parent company can control the timing of the reversal of the temporary differences, and it is unlikely that these temporary differences will reverse in the foreseeable future.

The reported tax expense of €411 million (previous year: €566 million) for fiscal 2022 was €399 million higher (previous year: €59 million higher) than the expected tax expense of €12 million (previous year: €507 million) that would have resulted from applying an expected weighted average tax rate to the pre-tax income of the Covestro Group. This average tax rate was derived from the nominal tax rates of the individual Group companies and amounted to 9.2% in fiscal 2022 (previous year: 23.2%). The effective tax rate was 316.2% (previous year: 25.9%).

The Covestro Group operates in various countries. The tax rates ranged from 14.1% to 34.0% (previous year: 14.1% to 34.3%) due to national regulations.

The reconciliation of expected to actual income tax expense and of the expected to the effective tax rate for the Covestro Group is shown in the following table:

Reconciliation of expected to actual income tax expense

	2021		2022	
	€ million	%	€ million	%
Expected income tax expense and expected tax rate	**507**	**23.2**	**12**	**9.2**
Reduction in taxes due to tax-free income	(12)	–0.6	(23)	–17.7
First-time recognition of previously unrecognized deferred tax assets on tax loss carryforwards	–	–	(3)	–2.3
Increase in taxes due to non-tax-deductible expenses	28	1.3	32	24.6
New tax loss carryforwards and temporary differences unlikely to be usable	3	0.1	191	146.9
Existing tax loss carryforwards and temporary differences on which deferred tax assets were previously recognized but which are unlikely to be usable	–	–	64	49.3
Tax income (–) and expenses (+) relating to other periods	11	0.5	8	6.2
Tax effects of change in tax rates	(1)	–	6	4.6
Other tax effects	30	1.4	124	95.4
Actual income tax expense and effective tax rate	**566**	**25.9**	**411**	**316.2**

Other tax effects are primarily the result of ineligible foreign withholding taxes on the dividend payments of subsidiaries totaling €55 million (previous year: €14 million) and of the change in deferred tax liabilities on planned dividend payments by subsidiaries in the amount of €61 million (previous year: €5 million).

12. Earnings per Share

Earnings per share are calculated according to IAS 33 (Earnings per Share) as the relationship of the Group's income after income taxes (net income) for the fiscal year to the weighted average number of outstanding no-par voting shares of Covestro AG. In fiscal 2022, a weighted average number of outstanding no-par voting shares of 190,933,438 was used to calculate earnings per share, while in fiscal 2021, these shares amounted to 193,165,396.

Earnings per share

	2021	2022
	€ million	€ million
Income after income taxes	1,619	(281)
Attributable to noncontrolling interests	3	(9)
Attributable to Covestro AG shareholders (net income)	1,616	(272)
	Shares	Shares
Weighted average number of outstanding no-par voting shares of Covestro AG	193,165,396	190,933,438
	€	€
Basic earnings per share	8.37	–1.42
Diluted earnings per share	8.37	–1.42

Notes to the Statement of Financial Position

13. Goodwill and Other Intangible Assets

Changes in intangible assets in fiscal 2022

	Acquired goodwill	Patents and technologies	Marketing and distribution rights	Production rights	Software	Other rights	Advance payments	Total
	€ million	€ million	€ million	€ million	€ million	€ million	€ million	€ million
Cost of acquisition or generation, December 31, 2021	**759**	**208**	**463**	**133**	**172**	**244**	**49**	**2,028**
Acquisitions	–	–	–	–	–	–	–	–
Capital expenditures	–	–	–	–	2	6	19	27
Retirements	(3)	–	–	–	(6)	(7)	–	(16)
Transfers	–	–	2	–	13	(11)	(10)	(6)
Transfers (IFRS 5)	–	(1)	(4)	–	–	(3)	–	(8)
Exchange differences	7	5	5	–	–	–	–	17
Cost of acquisition or generation, December 31, 2022	**763**	**212**	**466**	**133**	**181**	**229**	**58**	**2,042**
Accumulated amortization, impairment losses and impairment loss reversals, December 31, 2022	34	47	149	132	163	185	–	710
Carrying amounts, December 31, 2022	**729**	**165**	**317**	**1**	**18**	**44**	**58**	**1,332**
Amortization and impairment losses	33	18	86	–	9	10	–	156
Amortization	–	18	40	–	9	9	–	76
Impairment losses	33	–	46	–	–	1	–	80
Impairment loss reversals	–	–	–	–	–	–	–	–

In the reporting year, impairment losses of €80 million (previous year: €1 million) were recognized on goodwill and other intangible assets. These were primarily due to impairment testing in the reporting year 2022. The items of goodwill significant for the Covestro Group and a detailed description of the method for impairment testing goodwill and other intangible assets are presented in section "Impairment Testing" in note 3 "Accounting Policies and Valuation Principles." As in the previous year, there were no impairment loss reversals.

Changes in intangible assets in fiscal 2021

	Acquired goodwill	Patents and technologies	Marketing and distribution rights	Production rights	Software	Other rights	Advance payments	Total
	€ million	€ million	€ million	€ million	€ million	€ million	€ million	€ million
Cost of acquisition or generation, December 31, 2020	**257**	**28**	**40**	**132**	**170**	**203**	**34**	**864**
Acquisitions	489	176	412	–	–	37	–	1,114
Capital expenditures	–	–	–	–	2	2	15	19
Retirements	–	–	–	–	–	(1)	–	(1)
Transfers	–	–	1	–	1	–	–	2
Transfers (IFRS 5)	–	–	–	–	–	–	–	–
Exchange differences	13	4	10	1	(1)	3	–	30
Cost of acquisition or generation, December 31, 2021	**759**	**208**	**463**	**133**	**172**	**244**	**49**	**2,028**
Accumulated amortization, impairment losses and impairment loss reversals, December 31, 2021	2	27	64	132	157	183	–	565
Carrying amounts, December 31, 2021	**757**	**181**	**399**	**1**	**15**	**61**	**49**	**1,463**
Amortization and impairment losses	–	13	30	2	8	10	–	63
Amortization	–	13	30	1	8	10	–	62
Impairment losses	–	–	–	1	–	–	–	1
Impairment loss reversals	–	–	–	–	–	–	–	–

The acquisition of the Resins & Functional Materials (RFM) business from Koninklijke DSM N.V., Heerlen (Netherlands), resulted in significant additions to goodwill and other intangible assets in the previous year.

14. Property, Plant and Equipment

Changes in property, plant and equipment in fiscal 2022

	Land and buildings	Plant installations and machinery	Furniture, fixtures and other equipment	Construction in progress and advance payments	Total
	€ million	€ million	€ million	€ million	€ million
Cost of acquisition or construction, December 31, 2021	**3,871**	**13,543**	**881**	**920**	**19,215**
Acquisitions	–	–	–	–	–
Capital expenditures	80	309	61	496	946
Retirements	(29)	(194)	(31)	(19)	(273)
Transfers	116	337	15	(462)	6
Transfers (IFRS 5)	(1)	(7)	–	–	(8)
Exchange differences	15	118	9	2	144
Cost of acquisition or construction, December 31, 2022	**4,052**	**14,106**	**935**	**937**	**20,030**
Accumulated depreciation, impairment losses and impairment loss reversals, December 31, 2022	2,492	11,085	648	4	14,229
Carrying amounts, December 31, 2022	**1,560**	**3,021**	**287**	**933**	**5,801**
Depreciation and impairment losses	220	869	84	22	1,195
Depreciation	150	577	84	1	812
Impairment losses	70	292	–	21	383
Impairment loss reversals	–	–	(1)	–	(1)

In the reporting year, impairment losses of €383 million (previous year: €4 million) were recognized on property, plant and equipment. These are primarily attributable to the impairment testing performed in the reporting year, which is explained in greater detail in section "Impairment Testing" in note 3 "Accounting Policies and Valuation Principles." Impairment loss reversals of €1 million (previous year: €3 million) were also recognized.

Covestro is increasingly investing in projects that drive success and progress in achieving a circular economy and climate neutrality. To this end, the company continued to pursue various investment projects in the areas of pollution prevention and control, energy efficiency improvements, and recycling management in the reporting year, with a particular focus on technical equipment and machinery. Examples include investments in the new chloralkali production plant in Tarragona (Spain), the existing chloralkali production plant in Dormagen (Germany), and the company's first own plant for the mechanical recycling of polycarbonates in Shanghai (China).

Borrowing costs of €3 million (previous year: €3 million) were capitalized as part of the cost of qualifying assets under property, plant and equipment in the reporting year. The capitalization rate applied amounted to 1.7% on average (previous year: 1.8%).

Changes in property, plant and equipment in fiscal 2021

	Land and buildings	Plant installations and machinery	Furniture, fixtures and other equipment	Construction in progress and advance payments	Total
	€ million	€ million	€ million	€ million	€ million
Cost of acquisition or construction, December 31, 2020	**3,499**	**12,184**	**769**	**844**	**17,296**
Acquisitions	112	271	24	47	454
Capital expenditures	90	324	54	497	965
Retirements	(47)	(190)	(23)	–	(260)
Transfers	84	385	16	(487)	(2)
Transfers (IFRS 5)	(9)	(1)	(2)	–	(12)
Exchange differences	142	570	43	19	774
Cost of acquisition or construction, December 31, 2021	**3,871**	**13,543**	**881**	**920**	**19,215**
Accumulated depreciation, impairment losses and impairment loss reversals, December 31, 2021	2,282	10,309	590	2	13,183
Carrying amounts, December 31, 2021	**1,589**	**3,234**	**291**	**918**	**6,032**
Depreciation and impairment losses	142	539	80	2	763
Depreciation	141	537	80	1	759
Impairment losses	1	2	–	1	4
Impairment loss reversals	(3)	–	–	–	(3)

The acquisition of the Resins & Functional Materials (RFM) business from Koninklijke DSM N.V., Heerlen (Netherlands), resulted in significant additions to property, plant and equipment in the reporting year 2021.

14.1 Leasing

Covestro as Lessee

The recognized right-of-use assets from leases are reported under property, plant and equipment.

Changes in right-of-use assets in 2022

	Land and buildings	Plant installations and machinery	Furniture, fixtures and other equipment	Total
	€ million	€ million	€ million	€ million
Carrying amounts, January 1, 2022	**285**	**314**	**183**	**782**
Additions	41	49	50	140
Retirements	(5)	(2)	(2)	(9)
Depreciation, impairment losses and impairment loss reversals	(49)	(61)	(52)	(162)
Other changes	16	5	6	27
Carrying amounts, December 31, 2022	**288**	**305**	**185**	**778**

Changes in right-of-use assets in 2021

	Land and buildings	Plant installations and machinery	Furniture, fixtures and other equipment	Total
	€ million	€ million	€ million	€ million
Carrying amounts, January 1, 2021	**267**	**241**	**181**	**689**
Additions	60	122	41	223
Retirements	(9)	(10)	(3)	(22)
Depreciation, impairment losses and impairment loss reversals	(42)	(54)	(47)	(143)
Other changes	9	15	11	35
Carrying amounts, December 31, 2021	**285**	**314**	**183**	**782**

Right-of-use assets relate mainly to leases for production and logistics infrastructure and real estate leases. Leases for production and logistics infrastructure are mainly related to the rental of tanks and containers as well as rail tank cars. For tanks and containers, the average lease term is 16 years (previous year: 16 years) and for rail tank cars, 11 years (previous year: 12 years). Leases for renting real estate, particularly buildings, are for an average lease term of 15 years (previous year: 14 years). Some of the underlying leases include variable lease payments as well as options to extend or terminate the lease.

→ See note 3 “Accounting Policies and Valuation Principles.”

The following table presents the amounts recognized in the statement of cash flows and the income statement for all leases:

Cash outflows and expenses from leases

	2021	2022
	€ million	€ million
Amounts reported in the statement of cash flows		
Total cash outflow for leases	184	205
Amounts reported in the income statement		
Depreciation, impairment losses and impairment loss reversals	143	162
Interest expense	26	25
Expenses relating to short-term leases	14	17
Expenses relating to leases of low-value assets	2	1
Expenses relating to variable lease payments not included in the lease liability	2	3

As of December 31, 2022, the lease commitments for short-term leases not recognized in the statement of financial position amount to €6 million (previous year: €6 million).

Further information on the liabilities arising from leases and details on payments from leases are described in the following notes:

→ Note 22 "Financing and Financial Liabilities."
→ Note 27 "Notes to the Statement of Cash Flows."

Covestro as Lessor

In the reporting year, leasing income generated from lease contracts under IFRS 16 (Leases) was €8 million (previous year: €8 million). These are mainly related to real estate. In addition, lease payments from rentals of €5 million (previous year: €4 million) are expected to be received in the following year, not including the investment property as outlined below. Lease payments totaling €5 million are expected to be received in the period from 2024–2027, and lease payments totaling €3 million after the year 2027.

At Covestro, risks from renting real estate are usually limited by building insurance policies and by the contractual obligation of the tenant to return the property to its original condition. In addition, contractual agreements provide for price adjustment mechanisms based primarily on the consumer price index.

14.2 Investment Property

The total carrying amount of investment property as of December 31, 2022, amounted to €21 million (previous year: €23 million), and its fair value totaled €141 million (previous year: €223 million). Rental income from investment property was €17 million (previous year: €13 million) and the operating expenses directly allocable to this property amounted to €11 million (previous year: €10 million). In the reporting period and in the previous year, no material operating expenses were recognized for investment property not generating any rental income.

Rental income generated from the leasing of properties classified as investment properties stemmed in part from contracts for hereditary building rights and leases granted by the Covestro Group. These contracts with a weighted average remaining term of 33 years relate to space used by companies and contractual partners in the chemical industry at production sites in Germany. Based on current rental prices, around €5 million in compensation will be received annually from these long-term contracts for the use of this space in the coming years.

15. Investments Accounted for Using the Equity Method

The two following tables contain summarized data from the income statement and statement of financial position of the associate PO JV, LP, Houston, Texas (United States), which is accounted for using the equity method, and show the respective amounts recognized in the financial statements of the Covestro Group.

→ See note 5.1 "Scope of Consolidation and Investments" for an overview of the companies accounted for using the equity method.

In 2000, the polyols business and parts of the propylene oxide (PO) production operations of former Lyondell Chemicals Company, Houston, Texas (United States), were acquired with the objective of ensuring access to patented technologies and safeguarding the long-term supply of PO, a precursor for polyurethanes. As part of this strategy, a company was established to jointly produce PO (PO JV, LP, in which Covestro continues to hold a 39.4% interest, as in the prior year). Covestro benefits from fixed long-term supply quotas/volumes of PO produced by this company.

Income statement data of PO JV, LP, Houston, Texas (United States)

	2021	2022
	€ million	€ million
Sales	2,063	1,977
Net loss after taxes	(58)	(55)
Share of net loss after taxes	(21)	(19)
Share of total comprehensive income after taxes	**(21)**	**(19)**

Statement of financial position data of PO JV, LP, Houston, Texas (United States)

	Dec. 31, 2021	Dec. 31, 2022
	€ million	€ million
Noncurrent assets	359	346
Equity	359	346
Share of equity	**156**	**157**
Other	(15)	(2)
Carrying amount	**141**	**155**

The item "Other" mainly comprises differences arising from adjustments of data to Covestro's uniform accounting policies.

The following table contains the income statement data and carrying amounts of Paltough Industries (1998) Ltd., Kibbutz Ramat Yohanan (Israel) (Covestro's interest remained unchanged from the prior year at 25%):

Income statement data and carrying amounts of Paltough Industries (1998) Ltd., Kibbutz Ramat Yohanan (Israel)

	2021	2022
	€ million	€ million
Income after taxes	25	10
Share of income after taxes	6	2
Share of total comprehensive income after taxes	**6**	**2**
Carrying amount	**31**	**30**

16. Other Financial Assets

Other financial assets consisted of the following items:

Other financial assets

	Dec. 31, 2021		Dec. 31, 2022	
	Total	Of which current	Total	Of which current
	€ million	€ million	€ million	€ million
Money market funds	65	65	–	–
Loans and bank deposits	402	394	128	17
Other investments	27	–	24	–
Receivables from derivatives	40	34	45	45
Receivables under lease agreements	8	–	8	–
Total	**542**	**493**	**205**	**62**

As of the reporting date, December 31, 2022, loans and bank deposits particularly included initial fund loans in the amount of €101 million which were requested by Bayer-Pensionskasse VVaG, Leverkusen (Germany), and Rheinische Pensionskasse VVaG, Leverkusen (Germany), in the fiscal year. In the previous year, the item consisted primarily of bank deposits totaling €388 million. These fell by €373 million to €15 million in the fiscal year.

→ See note 25 “Contingent Liabilities and Other Financial Commitments.”

Receivables from derivatives included forward exchange contracts of €42 million (previous year: €34 million) and embedded derivatives of €3 million (previous year: €6 million).

→ See note 24.2 “Financial Risk Management and Information on Derivatives.“

→ See note 24.1 “Financial Instruments by Category“ for further information regarding money market funds, loans and bank deposits and other investments.

Receivables under lease agreements relate to finance leases where Covestro is the lessor and the counterparty is the economic owner of the leased assets. Receivables under lease agreements are based on expected future lease payments of €41 million (previous year: €32 million) including an interest component of €33 million (previous year: €24 million). In the reporting year, interest income from finance leases of €1 million (previous year: €1 million) was recognized. Of the expected lease payments, €1 million is due within one year (previous year: €1 million), €4 million is due within the following four years (previous year: €3 million), and €36 million is due in subsequent years (previous year: €28 million).

17. Inventories

Inventories were comprised as follows:

Inventories

	Dec. 31, 2021	Dec. 31, 2022
	€ million	€ million
Raw materials and supplies	830	848
Work in process, finished goods and goods purchased for resale[1]	2,081	1,964
Advance payments	3	2
Total	**2,914**	**2,814**

[1] In fiscal 2022, work in process comprises approximately 21% of inventories (previous year: approximately 21%).

In fiscal 2022, impairment losses on inventories of €69 million (previous year: €22 million) and reversals of impairment losses of €12 million (previous year: €5 million) were recognized through profit or loss in cost of goods sold.

Inventories recognized as an expense in the reporting period essentially correspond to the cost of goods sold less booked impairment losses.

18. Other Receivables

Other receivables consisted of the following:

Other receivables

	Dec. 31, 2021		Dec. 31, 2022	
	Total	Of which current	Total	Of which current
	€ million	€ million	€ million	€ million
Other tax receivables	226	223	245	244
Accruals and deferrals	99	90	84	79
Contract assets	62	62	64	62
Receivables from employees	8	8	7	7
Receivables from divestments	13	13	–	–
Reimbursement claims	2	2	2	2
Net defined benefit asset	4	–	56	–
Miscellaneous receivables	96	36	103	57
Total	**510**	**434**	**561**	**451**

Other receivables included €20 million (previous year: €30 million) in financial receivables. The impairment losses on financial receivables as of the reporting date are immaterial.

→ See note 6 "Sales" for further information on contract assets.

19. Equity

The individual components of equity and changes in equity in fiscal years 2021 and 2022 are presented in the Covestro Group consolidated statement of changes in equity.

Authorized and Conditional Capital

The Annual General Meeting (AGM) adopted a resolution on April 16, 2021, authorizing the Board of Management, with the approval of the Supervisory Board, to increase the capital stock of the company by up to €57,960,000 in the period through April 15, 2026 by issuing new, no-par value bearer shares against cash contributions and/or contributions in kind (Authorized Capital 2021).

The Authorized Capital 2021 has not been utilized to date.

On July 30, 2020, the AGM authorized the Board of Management to issue bonds with conversion or exchange rights or warrants, or with conversion obligations, or a combination of these instruments on up to 18,300,000 no-par value bearer shares of Covestro AG. Based on this authorization, convertible/warrant bonds can be issued up to a total nominal value of €2 billion by the company or a Group company in the period through July 29, 2025. The AGM in the year 2020 also resolved to conditionally increase the capital stock by up to €18.3 million by issuing up to 18,300,000 no-par value bearer shares to grant shares to the holders or creditors of such convertible/warrant bonds (Conditional Capital 2020).

The Conditional Capital 2020 has not been utilized to date.

Capital Stock

The capital stock of Covestro AG changed as follows in fiscal 2022:

Change in capital stock

	Number of shares	Of which treasury shares	Shares carrying dividend rights	Capital stock
	number	number	number	€ million
Dec. 31, 2021	**193,200,000**	**–**	**193,200,000**	**193**
Acquisiton of treasury shares		(3,479,956)	(3,479,956)	(3)
Issuance of treasury shares		228,321	228,321	–
Dec. 31, 2022	**193,200,000**	**(3,251,635)**	**189,948,365**	**190**

Covestro AG's capital stock as of December 31, 2022, is divided into 193,200,000 (previous year: 193,200,000) no-par value bearer shares and is fully paid up. Each share confers the right to one vote.

Covestro AG repurchased a total of 3,479,956 treasury shares as part of the share buyback program in 2022. Covestro AG also issued 228,321 (previous year: 39,456) treasury shares to employees of the German legal entities under the Covestment share-based participation program. As of December 31, 2022, the company held 3,251,635 treasury shares (previous year: 0), corresponding to 2% of the capital stock.

The cost of acquiring the treasury shares held by Covestro AG at the end of the fiscal year came to €139 million. Measurement was carried out according to the FIFO method. The average price paid per share under the share buyback program amounted to €43.11 per share.

Capital Reserves

Covestro AG's capital reserves as of December 31, 2022, amounted to €3,788 million (previous year: €3,927 million). The year-over-year decline is primarily attributable to the acquisition of treasury shares (€147 million) as part of the share buyback program. This was partially offset by the issuance of treasury shares as part of the Covestment share-based participation program.

The capital reserves include premiums from the issue of shares.

Retained Earnings and Other Comprehensive Income

Retained earnings totaled €2,480 million (previous year: €3,002 million) as of December 31, 2022.

Retained earnings consist of the net income earned both in the current fiscal year and in the past less the dividends paid. It also includes all remeasurements of the net defined benefit liability for post-employment benefit plans recognized in other comprehensive income. Accumulated other comprehensive income includes foreign currency effects from the translation of the annual financial statements of foreign subsidiaries that are recognized directly in equity.

Dividend

The dividend available for distribution is based on the distributable profit reported in the annual financial statements of Covestro AG, which were prepared according to the provisions of the German Commercial Code (HGB). In view of the Group's negative net income, no dividend will be paid to Covestro AG shareholders for fiscal 2022 in accordance with the current dividend policy. For fiscal 2021, a dividend of €3.40 per share carrying dividend rights was paid in April 2022.

Accumulated Other Comprehensive Income

Accumulated other comprehensive income was as follows:

Accumulated other comprehensive income

	Currency translation	Accumulated other comprehensive income
	€ million	€ million
Jan. 1, 2021	**209**	**209**
Other comprehensive income	365	365
Total comprehensive income	365	365
Dec. 31, 2021	**574**	**574**
Other comprehensive income	54	54
Total comprehensive income	54	54
Dec. 31, 2022	**628**	**628**

Noncontrolling Interests

Noncontrolling interests mainly relate to the equity of Sumika Covestro Urethane Company, Ltd., Hyogo (Japan), Covestro Eternal Resins (Kunshan) Co., Ltd., Kunshan (China), Covestro Eternal Resins (Far East) Ltd. Pingtung (Taiwan, Greater China), DIC Covestro Polymer Ltd., Tokyo (Japan), and Covestro (Taiwan) Ltd., Kaohsiung City (Taiwan, Greater China).

The changes in equity attributable to noncontrolling interests are presented in the following table:

Changes in equity attributable to noncontrolling interests

	2021	2022
	€ million	€ million
January 1	**37**	**66**
Change in equity not recognized in profit or loss		
Exchange differences on translation of operations outside the eurozone	2	(4)
Other changes in equity	35	(11)
Dividend payments	(11)	(6)
Change in equity recognized in profit or loss	**3**	**(9)**
December 31	**66**	**36**

20. Provisions for Pensions and Other Post-Employment Benefits

Provisions for pensions and other post-employment benefits were recognized for defined benefit obligations.

→ See note 9 "Personnel Expenses and Employee Numbers" for the expenses for defined contribution obligations.

The net defined benefit liability for post-employment benefit plans was accounted for as follows:

Net defined benefit liability recognized in the statement of financial position

	Pensions		Other post-employment benefits		Total	
	Dec. 31, 2021	Dec. 31, 2022	Dec. 31, 2021	Dec. 31, 2022	Dec. 31, 2021	Dec. 31, 2022
	€ million	€ million	€ million	€ million	€ million	€ million
Provisions for pensions and other post-employment benefits	**1,054**	**370**	**145**	**116**	**1,199**	**486**
Germany	948	250	–	–	948	250
Other countries	106	120	145	116	251	236
Net defined benefit asset	**4**	**56**	**–**	**–**	**4**	**56**
Germany	3	56	–	–	3	56
Other countries	1	–	–	–	1	–
Net defined benefit liability	**1,050**	**314**	**145**	**116**	**1,195**	**430**
Germany	945	194	–	–	945	194
Other countries	105	120	145	116	250	236

Expenses for defined benefit plans and for other post-employment benefits included the following components:

Expenses for defined benefit plans

	Pension plans						Other post-employment benefit plans	
	Germany		Other countries		Total		Other countries	
	2021	2022	2021	2022	2021	2022	2021	2022
	€ million	€ million	€ million	€ million	€ million	€ million	€ million	€ million
Current service cost	97	86	12	17	109	103	2	3
Past service cost	3	8	1	–	4	8	–	–
Service cost	**100**	**94**	**13**	**17**	**113**	**111**	**2**	**3**
Interest expense from defined benefit obligation	31	50	11	14	42	64	3	4
Interest income from plan assets	(19)	(39)	(8)	(11)	(27)	(50)	–	–
Net interest	**12**	**11**	**3**	**3**	**15**	**14**	**3**	**4**
Total expenses	**112**	**105**	**16**	**20**	**128**	**125**	**5**	**7**

In fiscal 2022, gains totaling €849 million (previous year: €510 million) from remeasurements of the net defined benefit liability were also recognized in other comprehensive income. This resulted largely from an increase in discount rates. Of this amount, €813 million (previous year: €500 million) relates to pension obligations and €36 million (previous year: €10 million) to other post-employment benefit obligations.

The changes in the net defined benefit liability for post-employment benefit plans were as follows:

Changes in the present value of the defined benefit obligation

	2021			2022		
	Germany	Other countries	Total	Germany	Other countries	Total
	€ million	€ million	€ million	€ million	€ million	€ million
January 1	**4,487**	**771**	**5,258**	**4,198**	**753**	**4,951**
Acquisition	16	6	22	–	–	–
Current service cost	97	14	111	86	20	106
Past service cost	3	1	4	8	–	8
Interest expense from defined benefit obligation	31	14	45	50	18	68
Net actuarial (gain)/loss	(388)	(41)	(429)	(1,356)	(142)	(1,498)
Due to change in financial assumptions	(363)	(46)	(409)	(1,458)	(151)	(1,609)
Due to change in demographic assumptions	–	–	–	–	1	1
Due to experience adjustments	(25)	5	(20)	102	8	110
Employee contributions	14	1	15	13	1	14
Payments due to plan settlements[1]	2	(1)	1	1	(1)	–
Benefits paid out of plan assets	(31)	(46)	(77)	(65)	(61)	(126)
Benefits paid by the company	(33)	(13)	(46)	(4)	(14)	(18)
Exchange differences	–	47	47	–	40	40
December 31	**4,198**	**753**	**4,951**	**2,931**	**614**	**3,545**
of which other post-employment benefits	–	147	147	–	119	119

[1] Payments due to plan settlements may include transfers from and to other companies in the course of employee transfers for which benefits are granted as part of a multi-employer plan managed as a pension plan by the transferring and receiving company.

Changes in fair value of plan assets

	2021			2022		
	Germany	Other countries	Total	Germany	Other countries	Total
	€ million	€ million	€ million	€ million	€ million	€ million
January 1	**2,627**	**510**	**3,137**	**3,253**	**505**	**3,758**
Acquisition	1	5	6	–	–	–
Interest income from plan assets	19	8	27	39	11	50
Return or (loss) on plan assets excluding amounts recognized as interest result	93	(10)	83	(521)	(115)	(636)
Employer contributions	531	8	539	32	11	43
Employee contributions	14	1	15	13	1	14
Payments due to plan settlements[1]	–	(1)	(1)	–	–	–
Benefits paid out of plan assets	(31)	(46)	(77)	(65)	(61)	(126)
Plan administration cost paid out of plan assets	(1)	–	(1)	–	–	–
Exchange differences	–	30	30	–	27	27
December 31	**3,253**	**505**	**3,758**	**2,751**	**379**	**3,130**
of which other post-employment benefits	–	2	2	–	3	3

[1] Payments due to plan settlements may include transfers from and to other companies in the course of employee transfers for which benefits are granted as part of a multi-employer plan managed as a pension plan by the transferring and receiving company.

Effects of the asset ceiling

	2021			2022		
	Germany	Other countries	Total	Germany	Other countries	Total
	€ million	€ million	€ million	€ million	€ million	€ million
January 1	**–**	**–**	**–**	**–**	**2**	**2**
Remeasurement of asset ceiling	–	2	2	14	(1)	13
Exchange differences	–	–	–	–	–	–
December 31	**–**	**2**	**2**	**14**	**1**	**15**
of which other post-employment benefits	–	–	–	–	–	–

Changes to the net defined benefit liability

	2021			2022		
	Germany	Other countries	Total	Germany	Other countries	Total
	€ million	€ million	€ million	€ million	€ million	€ million
January 1	**1,860**	**261**	**2,121**	**945**	**250**	**1,195**
Acquisition	15	1	16	–	–	–
Current service cost	97	14	111	86	20	106
Past service cost	3	1	4	8	–	8
Net interest	12	6	18	11	7	18
Net actuarial (gain) / loss	–388	–41	–429	(1,356)	(142)	(1,498)
(Return) or loss on plan assets excluding amounts recognized as interest result	(93)	10	(83)	521	115	636
Remeasurement of asset ceiling	–	2	2	14	(1)	13
Employer contributions	(531)	(8)	(539)	(32)	(11)	(43)
Employee contributions	–	–	–	–	–	–
Payments due to plan settlements[1]	2	–	2	1	(1)	–
Benefits paid out of plan assets	–	–	–	–	–	–
Benefits paid by the company	(33)	(13)	(46)	(4)	(14)	(18)
Plan administration cost paid out of plan assets	1	–	1	–	–	–
Exchange differences	–	17	17	–	13	13
December 31	**945**	**250**	**1,195**	**194**	**236**	**430**
of which other post-employment benefits	–	145	145	–	116	116

[1] Payments due to plan settlements may include transfers from and to other companies in the course of employee transfers for which benefits are granted as part of a multi-employer plan managed as a pension plan by the transferring and receiving company.

Benefit obligations pertained mainly to Germany (83%; previous year: 85%) and the United States (12%; previous year: 11%). In Germany, current employees accounted for approximately 50% (previous year: approximately 57%) of entitlements under defined benefit plans, retirees or their surviving dependents for approximately 44% (previous year: approximately 35%), and former employees with vested pension rights for approximately 6% (previous year: approximately 8%). In the United States, current employees accounted for approximately 32% (previous year: approximately 38%) of entitlements under defined benefit plans, retirees or their surviving dependents for approximately 62% (previous year: approximately 54%), and former employees with vested pension rights for approximately 6% (previous year: approximately 8%).

Actual expenses from plan assets relating to pension obligations amounted to €586 million (previous year: income of €110 million). No income was accrued from plan assets for other post-employment benefits either in the reporting period or the prior year.

The present value of the defined benefit obligation for pensions and other post-employment benefits and the funded status of the funded obligations are presented in the following table:

Defined benefit obligation and funded status

	Pension obligations		Other post-employment benefit obligations		Total	
	2021	2022	2021	2022	2021	2022
	€ million	€ million	€ million	€ million	€ million	€ million
Defined benefit obligation	**4,804**	**3,426**	**147**	**119**	**4,951**	**3,545**
Unfunded	135	106	143	114	278	220
Funded	4,669	3,320	4	5	4,673	3,325
Funded status of funded obligations						
Overfunding	6	71	–	–	6	71
Underfunding	919	264	2	2	921	266

Pension Entitlements and Other Post-Employment Benefit Obligations

The Covestro Group provides retirement benefits for most of its employees, either directly or by contributing to privately or publicly administered funds. Benefits vary according to the legal, tax, and economic conditions of each country and are generally based on employee compensation and years of service. The obligations relate both to existing retirees' pensions and to pension entitlements of future retirees.

Funded pension plans exist for employees in various countries. As a general rule, an individual investment strategy is determined for each of the Covestro Group's defined benefit pension plans taking into account the risk structure of the obligations (especially demographics, the current funded status, the structure of the expected future cash flows, interest sensitivity, biometric risks, etc.), the regulatory environment, and the existing level of risk tolerance or risk capacity. A strategic target investment portfolio is then developed in line with the plan's risk structure, taking capital market factors into consideration. Further determinants include risk diversification, portfolio efficiency, and the need for both a country-specific and a global risk/return profile centered on ensuring the payment of all future benefits. Since the capital investment strategy for each pension plan is always developed individually in light of the plan-specific conditions listed above, the investment strategies for different pension plans may vary considerably. The investment strategies are generally geared less toward maximizing absolute returns and more toward ensuring that the pension commitments can be financed with a sufficient degree of probability. Risk management systems are used to simulate stress scenarios and perform other risk analyses (e.g., value at risk) for the plan assets.

In addition to investment strategies tailored to the obligations, funding in the form of regular or unscheduled contributions is also an effective instrument for reducing risk. Potential funding measures for pension obligations are therefore selected taking specific national regulatory requirements and liquidity into account. If an unscheduled contribution is made, the funded status may increase significantly under certain circumstances and thereby reduce the volatility of the net defined benefit liability recognized. As a consequence the level of liability-driven investments in plan assets can be further increased. In addition, the expected future liability on operating cash flows is reduced due to the increase in plan assets that are available to settle pension payments.

Bayer-Pensionskasse VVaG, Leverkusen (Germany), (Bayer-Pensionskasse) constitutes a major pension plan for Covestro. It has been closed to new members since January 1, 2005. This legally independent fund operates as a life insurance company and is therefore subject to the German Insurance Supervision Act (VAG). The benefit obligations covered by Bayer-Pensionskasse comprise retirement, surviving dependents', and disability pensions. It is financed with contributions from active members and their employers. The company contribution is a certain percentage of the employee contribution. This percentage is the same for all participating employers and is set by agreement between the plan's executive committee and supervisory board, acting on a proposal from the responsible actuary. It takes into account the differences between the actuarial estimates and the actual values for the factors used to determine liabilities and contributions. Bayer AG, Leverkusen (Germany), may adjust the company contribution in agreement with the plan's executive committee and supervisory board, acting on a proposal from the responsible actuary. The plan's liability is governed by Section 1, Paragraph 1, Sentence 3 of Germany's Occupational Pensions Act (BetrAVG). This means that if the pension plan exercises its right under the articles of association to reduce benefits, each participating employer has to make up the resulting difference.

Covestro is not liable for the obligations of other participating employers, even if they cease to participate in the plan.

Pension entitlements were granted via Rheinische Pensionskasse VVaG, Leverkusen (Germany), (Rheinische Pensionskasse) between January 1, 2005, and December 31, 2020. It has been closed to new members since January 1, 2021. Future pension payments from this plan are based among other aspects on contributions and the return on plan assets; a guaranteed interest rate applies.

The Bayer-Pensionskasse and Rheinische Pensionskasse pension obligations are classified as multi-employer plans as defined by IAS 19 (Employee Benefits). A defining characteristic of multi-employer plans is that assets from various employers not under common control are pooled at plan level and used to collectively grant pension benefits to employees. Allocation mechanisms that would permit an exact distribution of the plan assets managed by the pension plan to individual employers often do not exist, as in the case of Bayer-Pensionskasse and Rheinische Pensionskasse. Covestro therefore applies an estimation method that is adequately suited to this purpose to calculate its proportional share of the assets of these pension plans.

Pension entitlements for newly hired employees have been granted by Pensionplan2021 since January 1, 2021. This is a funded company pension plan. Contributions are invested in an age-based investment model at the individual employee level. Future pension payments are determined based on the contributions paid in and the return achieved. The pension entitlements are managed by Metzler Trust e.V., Frankfurt am Main (Germany) (Metzler Trust). Individuals employed at Covestro prior to January 1, 2021, who acquired pension entitlements via Rheinische Pensionskasse are entitled to switch to Pensionsplan2021.

Metzler Trust is also used as a pension vehicle for further obligations than Pensionplan2021. This vehicle covers further retirement provision arrangements for German employees of the Covestro Group, such as the conversion of salary entitlements into pension entitlements, pension obligations, and components of other direct commitments. Metzler Trust covers the majority of funded pension commitments in Germany. In this context, approximately 44% (previous year: approximately 35%) of the investment total is subject to ESG (environmental, social, and governance) criteria.

The defined benefit pension plans in the United States have been frozen for some years, and no significant new entitlements can be earned under these plans. The assets of all the U.S. pension plans are held by a master trust for reasons of efficiency. The applicable regulatory framework is based on the Employee Retirement Income Security Act (ERISA). Covestro continues to bear the actuarial risks such as investment risk, interest rate risk, and longevity risk.

The other post-employment benefit obligations outside Germany are mainly related to retirees' health care benefit payments in the United States.

The fair value of the plan assets to fund pensions and other post-employment benefit obligations was as follows:

Fair value of plan assets as of December 31

	Pension obligations				Other post-employment obligations	
	Germany		Other countries		Other countries	
	2021	2022	2021	2022	2021	2022
	€ million	€ million	€ million	€ million	€ million	€ million
Plan assets based on quoted prices in active markets						
Real estate and special real estate funds	–	–	6	7	–	–
Equities and equity funds	495	317	51	42	–	–
Callable debt instruments	–	–	10	7	–	–
Noncallable debt instruments	727	759	45	35	–	–
Bond funds	415	344	253	174	–	–
Cash and cash equivalents	759	361	10	8	–	–
Other	–	–	10	3	–	–
	2,396	**1,781**	**385**	**276**	**–**	**–**
Plan assets for which quoted prices in active markets are not available						
Real estate and special real estate funds	194	275	–	–	–	–
Equities and equity funds	70	100	–	–	–	–
Callable debt instruments	224	173	–	–	–	–
Noncallable debt instruments	303	228	–	–	–	–
Bond funds	–	–	–	–	–	–
Derivatives	–	–	–	–	–	–
Cash and cash equivalents	–	–	–	–	–	–
Other	66	194	118	100	2	3
	857	**970**	**118**	**100**	**2**	**3**
Total plan assets	**3,253**	**2,751**	**503**	**376**	**2**	**3**

No properties leased by Group companies were included in the fair value of the domestic plan assets. Likewise, there were no Covestro shares or bonds held through funds. Other plan assets comprise mortgage loans granted, other receivables, and qualified insurance policies.

Risks

The risks from defined benefit plans arise partly from the defined benefit obligations and partly from the investment in plan assets. The risks lie in the possibility that higher direct pension payments will have to be made to the beneficiaries and/or that additional contributions will have to be made to plan assets in order to meet current and future pension obligations.

→ For more information, see "Opportunities and Risks" in the Combined Management Report

Demographic/Biometric Risks

Since a large proportion of the defined benefit obligations consists of lifelong pensions or surviving dependents' pensions, longer claim periods or earlier claims may result in higher benefit obligations, higher benefit expenses and/or higher pension payments than previously anticipated.

Investment Risks

If the actual return on plan assets were below the return anticipated on the basis of the discount rate, the net defined benefit liability would increase, assuming there were no changes in other parameters. This could happen as a result of a drop in share prices, increases in market rates of interest, default of individual debtors, or the purchase of low-risk but low-interest bonds.

Interest Rate Risks

Declining capital market interest rates, especially for high-quality corporate bonds, would increase the defined benefit obligation. This effect would be at least proportionately offset by the ensuing increase in the market values of the debt instruments held in plan assets.

Measurement Parameters and their Sensitivities

The bond portfolio consists exclusively of high-quality corporate bonds with a rating of at least AA or AAA. The portfolio does not include any government-guaranteed or secured bonds. The following weighted parameters were used to measure the pension obligations as of December 31 and the expense for pensions and other post-employment benefits in the respective reporting year.

Parameters for benefit obligations

	Germany		Other countries		Total	
	2021	2022	2021	2022	2021	2022
	%	%	%	%	%	%
Pension obligations						
Discount rate	1.20	3.70	2.15	4.55	1.30	3.80
Projected future salary increases	2.75	3.00	2.95	3.30	2.80	3.05
Projected future benefit increases	1.80	2.20	2.75	3.15	1.90	2.35
Other post-employment benefit obligations						
Discount rate	–	–	2.75	5.15	2.75	5.15

In Germany, the Heubeck 2018 G mortality tables were used, in the United States the MP-2021 Mortality Tables. The parameters for measuring the benefit expense are the same as those used to measure the benefit obligations in the most recent annual financial statements.

The rise in projected future benefit increases in Germany to 2.20% (previous year: 1.80%) and in other countries to 3.15% (previous year: 2.75%) as well as the rise in projected future salary increases in Germany to 3.00% (previous year: 2.75%) and in other countries to 3.30% (previous year: 2.95%) reflect the global increases in consumer prices and inflation expectations.

The parameter sensitivities were computed by expert actuaries based on a detailed evaluation similar to that performed to determine the net defined benefit liability. Altering individual parameters by 0.5 percentage points (mortality by 10% per beneficiary) while leaving the other parameters unchanged would have impacted pension and other post-employment benefit obligations as of the end of fiscal 2022 as follows:

Sensitivity analysis of benefit obligations

	Germany		Other countries		Total	
	Increase	Decrease	Increase	Decrease	Increase	Decrease
	€ million	€ million	€ million	€ million	€ million	€ million
Pension obligations						
0.5 percentage points change in discount rate	(222)	251	(21)	23	(243)	274
0.5 percentage points change in projected future salary increases	13	(12)	2	(2)	15	(14)
0.5 percentage points change in projected future benefit increases	148	(135)	2	(1)	150	(136)
10% change in mortality	(72)	80	(8)	9	(80)	89
Other post-employment benefit obligations						
0.5 percentage points change in discount rate	–	–	(6)	6	(6)	6
10% change in mortality	–	–	(3)	3	(3)	3

Sensitivity analysis of benefit obligations (previous year)

	Germany		Other countries		Total	
	Increase	Decrease	Increase	Decrease	Increase	Decrease
	€ million	€ million	€ million	€ million	€ million	€ million
Pension obligations						
0.5 percentage points change in discount rate	(401)	464	(32)	36	(433)	500
0.5 percentage points change in projected future salary increases	28	(26)	3	(3)	31	(29)
0.5 percentage points change in projected future benefit increases	244	(221)	2	(2)	246	(223)
10% change in mortality	(130)	147	(12)	13	(142)	160
Other post-employment benefit obligations						
0.5 percentage points change in discount rate	–	–	(9)	10	(9)	10
10% change in mortality	–	–	(4)	5	(4)	5

Due to their nature as pension benefits, the obligations of Covestro LLC, Pittsburgh, Pennsylvania (USA), in particular, for employees' post-employment health care costs are also recognized under obligations similar to pensions. The valuation of health care costs was based on the assumption that they will increase at a rate of 7% (previous year: 6%), which should gradually decline to 5% (previous year: 5%) by 2034. The following table shows the impact of a one-percentage-point change in the assumed health care cost increase rates:

Sensitivity analysis of health care cost increases

	2021		2022	
	Increase of one percentage point	Decrease of one percentage point	Increase of one percentage point	Decrease of one percentage point
	€ million	€ million	€ million	€ million
Impact on other post-employment benefit obligations	11	(10)	7	(6)

Employer Contributions Made or Expected

The following payments or transfers correspond to the employer contributions made or expected to be made to funded benefit plans:

Employer contributions made or expected

	Germany				Other countries			
	2021	2022 expected	2022	2023 expected	2021	2022 expected	2022	2023 expected
	€ million	€ million	€ million	€ million	€ million	€ million	€ million	€ million
Pension obligations	531	33	32	33	7	9	9	7
Other post-employment benefit obligations	–	–	–	–	1	–	2	–
Total	**531**	**33**	**32**	**33**	**8**	**9**	**11**	**7**

Pensions and other post-employment benefits payable in the future from funded and unfunded plans are estimated as follows:

Future benefit payments

	Payments from plan assets				Payments by the company			
	Pensions		Other post-employment benefits		Pensions		Other post-employment benefits	
	Germany	Other countries	Other countries	Total	Germany	Other countries	Other countries	Total
	€ million	€ million	€ million	€ million	€ million	€ million	€ million	€ million
2023	40	33	–	73	50	6	7	63
2024	43	34	–	77	50	6	7	63
2025	46	31	–	77	53	7	7	67
2026	50	31	1	82	56	7	8	71
2027	53	36	–	89	60	8	8	76
2028–2032	316	165	3	484	345	39	42	426

The weighted average term of the pension obligations is 20.8 years (previous year: 20.8 years) in Germany and 9.7 years (previous year: 11.5 years) in other countries. The weighted average term of the obligations for other post-employment benefits in other countries is 10.1 years (previous year: 12.3 years).

21. Other Provisions

The following table shows the changes in the individual provision categories in fiscal 2022:

Changes in other provisions

	Taxes	Environ-mental protection	Restruc-turing	Trade-related commit-ments	Litigations	Personnel commit-ments	Miscella-neous	Total
	€ million	€ million	€ million	€ million	€ million	€ million	€ million	€ million
December 31, 2021	**3**	**48**	**7**	**18**	**4**	**714**	**66**	**860**
Additions	4	10	2	38	6	276	32	368
Utilization	(3)	(2)	(8)	(16)	(5)	(624)	(33)	(691)
Reversal	(2)	(1)	–	(4)	–	(144)	(31)	(182)
Reclassifications	–	–	–	–	–	(1)	–	(1)
Interest cost	–	–	–	–	–	(9)	–	(9)
Exchange differences	–	2	–	(2)	–	8	2	10
December 31, 2022	**2**	**57**	**1**	**34**	**5**	**220**	**36**	**355**
of which noncurrent	–	55	–	–	–	112	17	184

Taxes

Provisions for taxes comprise provisions for other types of non-income taxes amounting to €2 million (previous year: €3 million).

Environmental Protection

Provisions for environmental protection mainly relate to the rehabilitation of contaminated land and recultivation of landfills as well as water protection measures at sites in the United States and Spain.

Restructuring

As of December 31, 2022, provisions for restructuring included €1 million (previous year: €7 million) for severance payments.

Personnel

Personnel-related provisions are mainly those recorded for variable one-time, short-term and long-term incentive payments and other personnel-related provisions.

Long-term Incentive Programs

The Covestro Group's long-term incentive programs entail commitments offered collectively to different groups of employees. As a general rule, all obligations from long-term compensation programs are covered by provisions. As of the reporting date, their amount corresponds to the fair value of the entitlement earned of the respective commitments to the employee groups. All resulting valuation adjustments are recognized in profit or loss.

The Board of Management, senior executives, and other managerial employees at Covestro are entitled to participate in the Prisma long-term, share-based compensation program. A percentage of the employee's annual base salary – based on his/her position – is defined as a target for variable payments (Prisma target opportunity). The payout is calculated by multiplying the Prisma target opportunity by the total shareholder return (total of Covestro's closing stock price* and all of the dividends distributed in the relevant performance period divided by the opening stock price) and the performance of Covestro's stock relative to the STOXX Europe 600 Chemicals index**. In 2021, Prisma was expanded to include a sustainability component that encompasses Covestro's target for reducing annual greenhouse gas emissions [CO_2 equivalents] at the Scope 1 emissions level.

→ See Compensation Report for more information on the LTI sustainability component

* Calculated as the average price for the last 30 days of trading in the relevant performance period.
** STOXX Europe 600 Chemicals: Sector index by the index issuer STOXX; the STOXX Europe 600 includes 600 European companies

The payout is capped at 200% of the Prisma target opportunity. If Covestro's stock were to significantly underperform the STOXX Europe 600 Chemicals index (e.g., if the stock price declined while the index increased in value), Prisma target attainment could amount to zero, in which case there would be no payout. The target achievement for the 2018–2021 tranche amounted to 17.7% and was distributed in the amount of €5 million mainly in January 2022.

The net expense for all long-term incentive programs amounted to €9 million (previous year: €17 million), of which €5 million (previous year: €5 million) was attributable to the Covestment share-based participation program, explained in greater detail in the following section.

The fair value of the Prisma share-based incentive program recognized in the provision amounted to €39 million as of December 31, 2022 (previous year: €40 million). The fair value was calculated using the Monte Carlo simulation method on the basis of the following key parameters pertaining to the reporting date:

Monte Carlo simulation parameters

	Tranche		
	2020	**2021**	**2022**
Risk-free interest rate	3.43%	3.29%	3.21%
Stock price volatility	40.68%	34.97%	38.01%
STOXX Europe 600 Chemicals volatility	23.31%	19.14%	22.91%
Correlation between stock price and STOXX Europe 600 Chemicals	0.75	0.70	0.74

Share-Based Participation Program (Covestment)

Under the Covestment program, employees of numerous Group companies could invest a fixed amount of their compensation in Covestro stocks in fiscal 2022, which Covestro supplemented through an employer subsidy. The discount granted for fiscal 2022 was generally 30% of the subscription amount and is set every year. The total individual investment amount was capped at €3,600, depending on the Group company and the employee's position. Overall, 99% of Covestro's global workforce was authorized to participate in Covestment.

Approximately 495,000 shares were purchased by employees at a weighted average share price of €35.57 under the Covestment program in fiscal 2022. Depending on the Group company, the purchased shares are subject to a vesting period of at least one year from the subscription date.

22. Financing and Financial Liabilities

The €5.0 billion Debt Issuance Program launched in the first quarter of 2016 is a key form of external financing. Of the euro bonds issued in March 2016, a fixed-rate tranche with a term until September 2024 (a coupon of 1.75% and a volume of €500 million) was still in the portfolio on the reporting date. The fixed-rate euro bonds issued in 2020 with a total volume of €1.0 billion will mature in February 2026 (a coupon of 0.875% and a volume of €500 million) and in June 2030 (a coupon of 1.375% and a volume of €500 million).

In addition, Covestro published a Green Financing Framework in May 2022, on the basis of which the first green euro bond was issued in November 2022 with a fixed coupon of 4.75% and a volume of €500 million, maturing in November 2028. All the proceeds from the bond issue are to be used to finance sustainable projects.

As of December 31, 2022, the Group had total credit facilities of €2,890 million (previous year: €2,817 million) at its disposal. Of this amount, €2.5 billion is attributable to the five-year syndicated revolving credit facility arranged in March 2020. This credit facility's term has been extended until March 2027 due to the exercising of two options to extend the term by one year in each case. A feature of the credit line is its link to an ESG (environment, social, and governance) rating: The better (worse) the externally calculated ESG score is, the lower (higher) the interest component of the credit facility.

A total of €350 million (previous year: €275 million) of the existing credit facilities was drawn down, while €2,540 million (previous year: €2,542 million) remained unused.

In October 2022, Covestro issued Schuldschein loans in an amount equivalent to approx. €650 million as a new corporate financing instrument, of which a volume equivalent to €552 million was collected in 2022. The issue is denominated in U.S. dollars and euros. There are a total of 10 tranches with terms of three, five, or seven years and with fixed and variable interest rates. The proceeds from the issue will be used for general corporate financing and to replace short-term with long-term liquidity. The Schuldschein loans are likewise linked to an ESG rating.

Another new financing instrument established in August 2022 was the Euro Commercial Paper Programme (ECPP), allowing the company to issue notes in different currencies and terms of up to one year on a flexible basis. On the reporting date of December 31, 2022, however, there were no commercial papers in the portfolio that were recognized as other financial liabilities.

Financial liabilities consisted of the following:

Financial liabilities

	Dec. 31, 2021		Dec. 31, 2022	
	Total	Of which current	Total	Of which current
	€ million	€ million	€ million	€ million
Bonds	1,492	–	1,988	–
Liabilities to banks	275	50	922	154
Lease liabilities	761	130	746	135
Liabilities from derivatives	11	11	32	32
Other financial liabilities	2	1	1	–
Total	**2,541**	**192**	**3,689**	**321**

Maturities of financial liabilities

	Dec. 31, 2021		Dec. 31, 2022
Maturity	€ million	Maturity	€ million
2022	192	2023	321
2023	135	2024	606
2024	580	2025	583
2025	293	2026	576
2026	556	2027	334
2027 or later	785	2028 or later	1,269
Total	**2,541**	**Total**	**3,689**

The majority of the Covestro Group's financial liabilities are unsecured.

Lease liabilities

Lease payments of €890 million (previous year: €893 million) are to be made to the respective lessors in future years; of this amount, the interest component amounts to €142 million (previous year: €132 million). The lease liabilities mature as follows:

Lease liabilities

	Dec. 31, 2021				Dec. 31, 2022		
	Lease payments	Interest component	Lease liabilities		Lease payments	Interest component	Lease liabilities
Maturity	€ million	€ million	€ million	Maturity	€ million	€ million	€ million
2022	150	20	130	2023	155	20	135
2023	154	19	135	2024	127	21	106
2024	96	15	81	2025	99	16	83
2025	81	13	68	2026	92	14	78
2026	69	10	59	2027	114	10	104
2027 or later	343	55	288	2028 or later	303	63	240
Total	**893**	**132**	**761**	**Total**	**890**	**144**	**746**

23. Other Liabilities

Other liabilities were comprised as follows:

Other liabilities

	Dec. 31, 2021		Dec. 31, 2022	
	Total	Of which current	Total	Of which current
	€ million	€ million	€ million	€ million
Other tax liabilities	59	59	95	95
Deferred income	18	18	18	18
Public grants and subsidies	20	8	27	11
Liabilities to employees	38	34	42	38
Social security liabilities	13	13	18	18
Accrued interest on liabilities	11	11	20	20
Contract liabilities	37	37	56	56
Refund liabilities	116	116	111	111
Miscellaneous liabilities	46	28	41	29
Total	**358**	**324**	**428**	**396**

Miscellaneous liabilities included €2 million (previous year:€3 million) in liabilities from derivatives.

→ See note 6 "Sales" for further information on contract liabilities.

24. Financial Instruments

24.1 Financial Instruments by Category

The following tables show the carrying amounts and fair values of the individual financial assets and liabilities in accordance with IFRS 9 (Financial Instruments):

Carrying amounts of financial instruments and their fair values as of December 31, 2022

		Measurement according to IFRS 9				
	Carrying amount	Carried at amortized cost	Fair value through other comprehen-sive income	Fair value recognized in profit or loss	Measurement according to IFRS 16	Fair value
	€ million	€ million	€ million	€ million	€ million	€ million
Financial assets						
Trade accounts receivable	2,011	2,011				2,011
Other financial assets	205					
Money market funds	–	–	–	–		–
Loans and bank deposits	128	17	–	111		128
Other investments	24		24	–		24
Receivables under lease agreements	8				8	17
Derivatives that do not qualify for hedge accounting	45			45		45
Other receivables[1]	20	20	–			20
Cash and cash equivalents	1,198	1,198	–	–		1,198
Financial liabilities						
Financial debt	3,689					
Bonds	1,988	1,988		–		1,852
Lease liabilities	746				746	
Liabilities to banks	922	922		–		946
Other financial liabilities	1	1		–		1
Derivatives that do not qualify for hedge accounting	32			32		32
Trade accounts payable	2,016	2,016		–		2,016
Other liabilities[2]	170					
Derivatives that do not qualify for hedge accounting	2			2		2
Refund liabilities	111	111		–		111
Miscellaneous other liabilities	57	57		–		57

[1] Other receivables recognized in the consolidated statement of financial position also include nonfinancial assets totaling €541 million.
[2] Othher liabilities recognized in the consolidated statement of financial position also include nonfinancial liabilities totaling €258 million.

Carrying amounts of financial instruments and their fair values as of December 31, 2021

		Measurement according to IFRS 9				
	Carrying amount	Carried at amortized cost	Fair value through other comprehen-sive income	Fair value recognized in profit or loss	Measureme nt according to IFRS 16	Fair value
	€ million	€ million	€ million	€ million	€ million	€ million
Financial assets						
Trade accounts receivable	2,343	2,343				2,343
Other financial assets	542					
Money market funds	65	–	–	65		65
Loans and bank deposits	402	393	–	9		402
Other investments	27		27	–		27
Receivables under lease agreements	8				8	19
Derivatives that do not qualify for hedge accounting	40			40		40
Other receivables[1]	30	22	–	8		30
Cash and cash equivalents	649	649	–	–		649
Financial liabilities						
Financial debt	2,541					
Bonds	1,492	1,492		–		1,568
Lease liabilities	761				761	
Liabilities to banks	275	275		–		280
Other financial liabilities	2	2		–		2
Derivatives that do not qualify for hedge accounting	11			11		11
Trade accounts payable	2,214	2,214		–		2,214
Other liabilities[2]	172					
Derivatives that do not qualify for hedge accounting	3			3		3
Refund liabilities	116	116		–		116
Miscellaneous other liabilities	53	53		–		53

[1] Other receivables recognized in the consolidated statement of financial position also include nonfinancial assets totaling €480 million.
[2] Other liabilities recognized in the consolidated statement of financial position also include nonfinancial liabilities totaling €186 million.

The fair values of financial instruments are determined and reported in accordance with IFRS 13 (Fair Value Measurement) on the basis of the fair value hierarchy described below:

Level 1 covers fair values determined on the basis of quoted, unadjusted prices that exist in active markets.

Level 2 comprises fair values determined on the basis of parameters that are observable in an active market.

Level 3 applies to fair values determined using parameters whose input factors are not based on observable market data.

The following table shows the classification of the financial instruments within the three-level fair value hierarchy:

Fair value hierarchy of financial instruments

	Fair value Dec. 31, 2021	Level 1	Level 2	Level 3	Fair value Dec. 31, 2022	Level 1	Level 2	Level 3
	€ million	€ million	€ million	€ million	€ million	€ million	€ million	€ million
Financial assets carried at fair value								
Money market funds	65	–	65	–	–	–	–	–
Loans and bank deposits	9	–	–	9	111	–	101	10
Other investments	27	4	–	23	24	2	–	22
Derivatives that do not qualify for hedge accounting	40	–	34	6	45	–	42	3
Other receivables	8	–	–	8	–	–	–	–
Financial assets not carried at fair value								
Receivables under lease agreements	19	–	–	19	17	–	–	17
Financial liabilities carried at fair value								
Derivatives that do not qualify for hedge accounting	14	–	11	3	34	–	32	2
Financial liabilities not carried at fair value								
Bonds	1,568	1,568	–	–	1,852	1,852	–	–
Liabilities to banks	280	–	280	–	946	–	946	–
Other financial liabilities	2	–	2	–	1	–	1	–

Reallocation between the different levels of the fair value hierarchy takes place at the end of the reporting period in which the change occurred. During the fiscal year, no financial instruments were reallocated to a different level of the fair value hierarchy.

Because of the generally short maturities of cash and cash equivalents, loans and bank deposits, trade accounts receivable and payable, and other receivables and liabilities, their carrying amounts do not significantly differ from the fair values.

The fair value of the bonds issued by Covestro AG is based on quoted, unadjusted prices in active markets and therefore assigned to Level 1 of the fair value hierarchy. The fair value of some of the other investments is also based on quoted prices in active markets (Level 1).

The fair values stated for noncurrent financial assets and liabilities are the present values of the respective future cash inflows or outflows. These are determined by discounting the cash flows at a reporting-date interest rate that takes into account the term of the assets or liabilities and the creditworthiness of the counterparty. For this reason, these values are assigned to Level 2 of the fair value hierarchy.

The fair values of derivatives for which no publicly quoted market prices exist are determined using valuation techniques based on observable market data as of the reporting date (Level 2). Credit value adjustments and debt value adjustments are determined to allow for both the contracting party's credit risk and Covestro's own credit risk. The forward exchange contracts are measured individually at their respective forward rates or prices on the balance sheet date. Forward rates and prices are based on spot rates and prices, taking into account forward premiums and discounts.

Where fair values are estimated (in whole or in part) on the basis of unobservable inputs, they are reported within Level 3 of the fair value hierarchy. The fair values of noncurrent receivables under lease agreements are calculated on the basis of interest curves observable in the market. Additionally, a discount for cash flows that are very far in the future is applied as an unobservable factor.

Covestro works with and invests in start-ups within the framework of the Covestro Venture Capital (COVeC) approach, which was newly developed in fiscal 2020. Investments associated with COVeC activities are recognized either as debt instruments at fair value through profit and loss or as other financial investments at fair value directly in equity, depending on the contractual design. The fair value is calculated as the present value of the future cash flows estimated based on available performance indicators. The cash flows are discounted at the current interest rate for the appropriate term on the reporting date and reflecting the creditworthiness of the venture capital company. The main input factors are not based on observable market data (Level 3). The estimated fair value of the debt instruments classified in Level 3 would rise (fall) if the expected cash inflows were to be higher (lower) or if the risk-adjusted discount rate were to be lower (higher).

Other financial investments are recognized at fair value directly in equity because they are held for the long term for strategic reasons. The fair value of some of the other investments is based on quoted prices in active markets (Level 1). Where there are no quoted, unadjusted prices in an active market for identical or similar instruments, and there is no suitable valuation method where all major input factors are based on observable market data, the fair value of the other investments is determined using a market price-oriented valuation method where the main input factors are not based on observable market data (Level 3). The valuation of certain other investments is based on available performance indicators as well as on market valuation multipliers. The estimated fair value of the equity instruments categorized within Level 3 would rise (fall) if the multiple applied were to be greater (smaller).

Further, the fair values of embedded derivatives are determined on the basis of unobservable input factors (Level 3). They are separated from their respective host contracts, which are regularly purchase agreements relating to the operational business. The embedded derivatives cause the cash flows from the contracts to vary with fluctuations in exchange rates, or regional and industry-specific price indices, for example. The internal measurement of embedded derivatives is mainly performed using the discounted cash flow method, which is based on unobservable inputs. These include prices or price indices derived from market data. The estimated fair value of the embedded derivative would rise (fall) if the expected payment flows were to be higher (lower) as a result of fluctuations in exchange rates or prices.

The table below shows the changes in Level 3 financial instruments:

Changes in the net amount of financial assets and liabilities recognized at fair value based on unobservable inputs

	2021	2022
	€ million	€ million
Net carrying amounts, Jan. 1	**22**	**43**
Gains (losses) recognized in profit or loss	2	(9)
of which related to assets/liabilities recognized in the statement of financial position	2	(1)
Gains (losses) recognized outside profit or loss	14	(1)
Additions of assets (liabilities)	5	–
Net carrying amounts, Dec. 31	**43**	**33**

The gains and losses from Level 3 financial assets and liabilities are reported as follows:

- Gains and losses from embedded derivatives recognized in profit or loss are reported in other operating expenses or income;
- Gains and losses from the contingent purchase price receivable from divestments and debt instruments recognized in profit or loss are reported in other financial result;
- Gains and losses from other financial investments are reported in other comprehensive income from equity instruments.

Other financial investments amount to €24 million (previous year: €27 million), of which €18 million (previous year: €18 million) was attributable to Hydrogenious LOHC Technologies GmbH, Erlangen (Germany), and €3 million (previous year: €4 million) to Hi-Bis GmbH, Bitterfeld-Wolfen (Germany). In fiscal 2022, the Covestro Group received dividends of €2 million (previous year: €2 million) from other financial investments, of which €1 million (previous year: €2 million) was attributable to Hi-Bis GmbH.

As part of efforts to improve supplier relationships, a small number of Covestro's suppliers participate in prefinancing programs in which an external financial intermediary pays the invoice underlying the current trade payables to the supplier before it is due in each case. Such scenarios could, in particular, lead to a change in the presentation of the original liability in the consolidated financial statements if the nature, function, and risk of the liability subject to the financing program differs from other trade payables. In the case of the current programs, however, the underlying conditions do not result in any changes to the presentation in the consolidated financial statements. For this reason, the corresponding amounts continue to be reported under trade accounts payable. As of the reporting date, only a minor share of outstanding trade accounts payable is attributable to such financing programs.

The classification of income, expenses, gains, and losses from financial instruments by measurement category in accordance with IFRS 9 is shown in the table below:

Net result by measurement category in accordance with IFRS 9

	2021	2022
	€ million	€ million
Financial assets carried at amortized cost	15	84
of which net interest	3	6
Equity instruments measured at fair value through other comprehensive income	2	2
of which net interest	–	–
Financial instruments measured at fair value through profit or loss	33	(78)
of which net interest	12	(6)
Financial liabilities carried at amortized cost	(87)	(97)
of which net interest	(53)	(62)

24.2 Financial Risk Management and Information on Derivatives

Capital management

The main purpose of financial management is to ensure solvency at all times, continuously optimize capital costs, and reduce the risks of financing measures. Financial management for the Covestro Group is performed centrally by Covestro AG.

Covestro AG currently holds a Baa2 investment-grade rating with a stable outlook from the rating agency Moody's Investors Service, London (United Kingdom). Covestro uses the debt ratios published by prominent rating agencies in managing its capital and pursues a conservative debt policy along with a balanced financing portfolio. This is based primarily on bonds, Schuldschein loans, commercial papers, syndicated credit facilities, and bilateral loan agreements.

Credit risk

Credit risk is the risk of a loss for the Covestro Group when a counterparty is unable to meet its payment obligations arising from a financial instrument as contractually stipulated. Payment obligations to the Covestro Group primarily comprise trade accounts receivable, debt instruments, other financial assets, and contract assets.

The carrying amount of the financial assets and the contract assets represents the maximum credit risk exposure.

The impairment loss for financial assets and contract assets recognized during the year resulted almost exclusively from impairment losses on trade accounts receivable. Net impairment losses amounted to €9 million (previous year: net reversals of impairment losses of €6 million) in the reporting year.

Trade accounts receivable and contract assets

The credit risk the Covestro Group is exposed to through its trade accounts receivable and contract assets depends largely on the creditworthiness of the customer. In order to manage this risk, the Covestro Group's Credit Management implemented a process that uses internal and external data to assess each customer in terms of its creditworthiness. Quantitative and qualitative data are evaluated during the assessment process. The assessment reflects financial data, ratings, payment history, and data on the customer's environment. The customer is allocated to one of five risk categories on the basis of the final assessment. The categories range from A to E, with risk category A representing the most creditworthy companies and risk category E the least.

Meaningful data is used to determine an expected loss rate for each risk category. Data such as default probabilities from rating agencies and credit insurance firms, historical impairment losses recognized by the Covestro Group, and the empirical data from Credit Management are used to determine the expected loss rates. In addition, forward-looking information such as the country rating is also used in determining the expected loss rates. The expected and actual losses are compared every year (backtesting) to validate the method.

The Russian war against Ukraine and the resulting fundamental shift in the geopolitical situation led to a massive increase in energy and certain raw material prices in fiscal 2022, particularly in Europe, as well as to higher inflation and weaker economic growth. To accordingly reflect the increased credit risk attributable to this development in the measurement of trade accounts receivable and contract assets, an additional risk premium was applied to the creditworthiness of customers in the relevant regions as determined on the basis of the method described above. An affected customer may consequently be assigned to a worse risk category, with the corresponding receivables then being subjected to greater impairment.

The following table presents the gross carrying amounts and the expected losses for trade accounts receivable and contract assets:

Expected credit loss by category as of December 31

	Cluster					
2022	**A**	**B**	**C**	**D**	**E**	**Total**
Expected loss rate (%)	0.01	0.03	0.12	0.70	6.00	
Gross amount (€ million)	291	755	737	249	49	2,081
Expected loss (€ million)	–	–	(1)	(2)	(3)	(6)
2021	**A**	**B**	**C**	**D**	**E**	**Total**
Expected loss rate (%)	0.01	0.03	0.12	0.70	6.00	
Gross amount (€ million)	665	724	823	167	30	2,409
Expected loss (€ million)	–	–	(2)	(1)	(2)	(5)

The accumulated impairment losses amounted to €30 million (previous year: €25 million) for those customers that the Covestro Group considers credit impaired on the basis of this assessment. The corresponding gross carrying amount was €31 million (previous year: €25 million). Indicators for customers being credit impaired include significant financial difficulties of the customer and a breach of contract such as default or delinquency. Determining that a customer is credit impaired does not occur automatically when payments are overdue for more than 90 days but is instead always based on the individual assessment conducted by Credit Management.

Total impairment losses for trade accounts receivable and contract assets changed as follows:

Reconciliation of expected credit loss

	2021	2022
	€ million	€ million
Valuation allowances, Jan. 1	**(35)**	**(29)**
Net remeasurement impairment loss	6	(9)
Write offs	1	2
Foreign exchange differences	(1)	–
Valuation allowances, Dec. 31	**(29)**	**(36)**

The Covestro Group limits the credit risk exposure from trade accounts receivable by stipulating the shortest payment terms possible. In addition, the Covestro Group has a widely diversified customer portfolio. In order to avoid concentration of risk, customer limits are set, regularly monitored, and exceeded only in agreement with Credit Management.

Receivables of €25 million (previous year: €34 million) are secured mainly by letters of credit.

Debt instruments

The Covestro Group generally pursues a conservative investment policy based on a strategy of maintaining liquidity and safeguarding value. Consequently, investments are limited to counterparties with investment-grade ratings, simple debt instruments, and short-term investment horizons. Credit risks, particularly concentration of risk with individual counterparties, are managed by means of a Group-wide limit system in conjunction with ongoing monitoring. Covestro also acts as a start-up investor as part of the Covestro Venture Capital (COVeC) approach newly developed in fiscal 2020. Investments associated with COVeC activities are recognized either as debt instruments at fair value through profit and loss or other financial investments at fair value directly in equity, depending on the contractual design.

The general approach for calculating and recording impairment losses in accordance with IFRS 9 applies to all debt instruments, loan commitments, and financial guarantees recognized at amortized cost or at their fair values directly in equity. Covestro uses a general, three-stage approach for measuring the risk provision for expected credit losses as follows:

- Stage 1: The risk provision is calculated as the 12-month expected credit loss, whereby the default probability is derived from historical data published by recognized rating agencies. The Covestro Group assumes that investment-grade ratings imply a low level of credit risk.
- Stage 2: The amount of the risk provision is measured as the expected credit loss over the lifetime of the debt instrument if the credit risk has increased significantly since its initial recognition. Changes in credit risk are assessed using the actual payment history and external information. Whenever available, Covestro uses credit default swap prices and other forward-looking information such as ratings outlooks in addition to external ratings.
- Stage 3: Covestro reclassifies a debt instrument to Level 3 if it determines that its creditworthiness is impaired. This is the case, for instance, when a counterparty has obtained insolvency status, when there is sufficient information available to show that the counterparty has applied for insolvency proceedings, or when debt instruments are more than 90 days overdue.

As in the previous year, Covestro did not reclassify any debt instruments between the levels of the general impairment model during the fiscal year. The Covestro Group held no collateral for debt instruments in fiscal 2022 or in the previous year.

Because of the low credit risk profile, the Covestro Group is not exposed to significant credit risk from debt instruments. For fiscal 2022 and for the previous year, the risk provision calculated using the general approach is immaterial both overall and for the individual stages.

Currency risks

Currency opportunities for and risks to the Covestro Group result from changes in exchange rates and the related changes in the value of financial instruments (including receivables and payables) and future cash inflows and outflows denominated in foreign currencies. Material receivables and payables in liquid currencies from operating and financial activities are generally fully hedged through forward exchange contracts. A value-at-risk approach is used to manage foreign currency exposures arising from planned receivables and liabilities. As in the previous year, the planned foreign currency exposure was not hedged. It will be hedged using forward contracts if the foreign currency risk increases significantly. The extent of the currency risk is presented below by means of a sensitivity analysis.

The currency risk shown in the sensitivity analysis results from the following:

- The unsecured portion of receivables and payables in nonfunctional currencies,
- Unsecured bank deposits and liabilities to banks in nonfunctional currencies, and
- Currency risks from embedded derivatives.

Sensitivities were determined based on a hypothetical scenario in which the euro depreciates by 10% against all other currencies compared with the year-end exchange rates. Under this scenario, the estimated hypothetical gains recognized in profit or loss as of December 31, 2022, would have totaled €6.2 million (previous year: €5.9 million). The table below shows the distribution of these effects among the individual currencies:

Sensitivity by currency

	2021		2022
Currency	€ million	Currency	€ million
USD	2.8	CNY	3.0
CNY	1.4	USD	2.1
AUD	0.6	CZK	0.3
Other	1.1	Other	0.8
Total	**5.9**	**Total**	**6.2**

Liquidity risk

Liquidity risk is the risk of not being able to meet existing or future payment obligations. The liquidity status of all material Group companies is continuously planned and monitored. Liquidity is secured via cash pooling agreements as well as internal and external financing. The syndicated, revolving credit facility of €2.5 billion, which is available through March 2027, particularly provides additional financial flexibility.

The liquidity risks to which the Covestro Group was exposed from its financial instruments can be divided into obligations for interest and repayment installments on financial liabilities, payment obligations arising from derivatives and loan commitments. The following tables show the maturity structure of the nondiscounted contractually agreed payments arising from these line items:

Maturity analysis of financial liabilities and derivative financial instruments

	Carrying amount	Contractual cash flows					
	Dec. 31, 2022	2023	2024	2025	2026	2027	after 2027
	€ million	€ million	€ million	€ million	€ million	€ million	€ million
Financial liabilities							
Bonds	1,988	44	544	35	535	31	1,044
Liabilities to banks	922	179	27	526	11	242	41
Lease liabilities	746	155	127	99	92	114	303
Other financial liabilities	1	–	–	–	–	–	1
Trade accounts payable	2,016	2,016	–	–	–	–	–
Other liabilities							
Accrued interest on liabilities	20	20	–	–	–	–	–
Refund liabilities	111	111	–	–	–	–	–
Miscellaneous other liabilities	37	24	2	–	–	–	11
Liabilities from derivatives							
Derivatives that do not qualify for hedge accounting	34	34	–	–	–	–	–
Receivables from derivatives							
Derivatives that do not qualify for hedge accounting	45	45	–	–	–	–	–
Loan commitments	–	117	–	–	–	–	–

	Carrying amount	Contractual cash flows					
	Dec. 31, 2021	2022	2023	2024	2025	2026	after 2026
	€ million	€ million	€ million	€ million	€ million	€ million	€ million
Financial liabilities							
Bonds	1,492	20	20	520	11	511	528
Liabilities to banks	275	51	1	1	226	–	–
Lease liabilities	761	150	154	96	81	69	343
Other financial liabilities	2	1	–	–	–	–	1
Trade accounts payable	2,214	2,214	–	–	–	–	–
Other liabilities							
Accrued interest on liabilities	11	11	–	–	–	–	–
Refund liabilities	116	116	–	–	–	–	–
Miscellaneous other liabilities	42	26	4	–	–	–	12
Liabilities from derivatives							
Derivatives that do not qualify for hedge accounting	14	13	1	–	–	–	–
Receivables from derivatives							
Derivatives that do not qualify for hedge accounting	40	37	3	–	–	–	–
Loan commitments	–	219	–	–	–	–	–

In addition to Covestro's recognized nonderivative liabilities and derivative financial instruments, Covestro AG is obligated, under certain conditions, to grant initial funding loans to Bayer-Pensionskasse VVaG, Leverkusen (Germany), and Rheinische Pensionskasse VVaG, Leverkusen (Germany), which may lead to payments by Covestro AG in subsequent years. The pension funds requested loans in the amount of €102 million in December 2022, reducing the corresponding obligation to €117 million as of December 31, 2022 (previous year: €219 million). This is reflected in the loan commitments shown in the table above.

→ See note 25 "Contingent Liabilities and Other Financial Commitments."

In this analysis, foreign currencies were translated at closing rates. Derivative financial instruments are reported as net amounts.

Interest rate risks

Interest rate opportunities for and risks to the Covestro Group result from changes in capital market interest rates, which could lead to changes in the fair value of fixed-rate financial instruments and in interest payments in the case of floating-rate instruments. To minimize adverse effects, interest rate risk is managed centrally based on an optimized debt maturity structure.

A sensitivity analysis based on our net floating-rate receivables and payables position at the end of fiscal 2022, taking into account the interest rates relevant to our receivables and payables in all principal currencies, produced the following result: A hypothetical increase in the interest rates by 100 basis points or one percentage point would (assuming currency exchange rates remain constant) result in an increase in interest expense of €16.3 million (previous year: €3.6 million).

Raw Material Price Risks

The Covestro Group requires significant quantities of different forms of energy and petrochemical feedstocks for its production processes. Procurement prices for energy and raw materials may fluctuate significantly. Important raw materials are procured on the basis of long-term supply agreements and active supplier management to minimize substantial price fluctuations. During the past fiscal year, derivative financial instruments were not used to hedge raw material price risks.

Derivatives

As of the reporting date, the nominal volume of the forward exchange contracts used to hedge currency risk amounted to €2,914 million (previous year: €2,822 million). Other market risks are not hedged as of the reporting date.

Covestro has entered into master netting or similar agreements for derivative financial instruments. These take effect in particular in the event of the insolvency of one of the contractual partners involved. The derivative financial instruments covered by netting agreements from the perspective of the Covestro Group are presented in the table below:

Disclosures for netting of financial assets and liabilities as of December 31

	Gross amounts of financial assets / liabilities	Net amounts of financial assets / liabilities presented in the balance sheet	Balance sheet amounts eligible for netting covered by netting agreements	Net amounts after possible netting
	€ million	€ million	€ million	€ million
2022				
Receivables from derivatives	42	42	2	40
Liabilities from derivatives	32	32	2	30
2021				
Receivables from derivatives	34	34	4	30
Liabilities from derivatives	11	11	4	7

25. Contingent Liabilities and Other Financial Commitments

Contingent Liabilities

The following table shows contingent liabilities from warranty agreements and other contingent liabilities as of the reporting date:

Contingent liabilities

	Dec. 31, 2021	Dec. 31, 2022
	€ million	€ million
Warranty contracts	4	4
Other contingent liabilities	5	8
Total	**9**	**12**

Other Financial Commitments

Other financial obligations consisted of the following:

Other financial commitments

	Dec. 31, 2021	Dec. 31, 2022
	€ million	€ million
Orders already placed for started or planned investment projects	335	304
Loan commitments to pension funds	219	117
Total	**554**	**421**

Some of the pension obligations allocable to the Covestro Group are funded through pension institutions used jointly with other companies (especially Bayer AG, Leverkusen (Germany)). In such cases, it can generally be contractually ensured that Covestro participates accordingly in funding measures that serve to guarantee adequate funding status and/or adequate solvency capital of these pension institutions for the long term. To this end, Covestro AG agreed to grant interest-bearing loans of up to €208 million to Bayer-Pensionskasse VVaG, Leverkusen (Germany), and up to €11 million to Rheinische Pensionskasse VVaG, Leverkusen (Germany), for the effective initial fund to be drawn down as required. Upon drawdown of the initial fund loan, the loan commitments to the pension funds were reduced by €102 million to €117 million as of December 31, 2022 (previous year: €219 million).

→ See note 28.1 " Related Companies."

In fiscal 2022, Covestro received government grants on the basis of the guideline entitled "Subsidies for indirect CO_2 costs" published by the German Federal Ministry for Economic Affairs and Climate Action on September 1, 2022; these subsidies are subject to specific measures to improve energy efficiency being carried out in accordance with section 4.2.1a of this guideline. These requirements must be met by no later than December 31, 2024 and Covestro expects to be able to meet these requirements.

26. Legal Risks

As a company with international operations, the Covestro Group is exposed to numerous legal risks, particularly in the areas of product liability, competition and antitrust law, patent disputes, tax law, environmental law, and compliance issues such as corruption and export control. The outcome of any current or future proceedings cannot be predicted. It is therefore possible that legal judgments or regulatory decisions or future settlements could give rise to expenses that are not covered, or not fully covered, by insurers' compensation payments and could significantly affect the Covestro Group's earnings.

Legal proceedings currently considered to involve material risks are outlined below. The legal proceedings referred to do not necessarily represent an exhaustive list:

Carbon Monoxide Pipeline from Dormagen to Krefeld-Uerdingen

The carbon monoxide pipeline is intended to connect the chemical production sites at Dormagen (Germany) and Krefeld-Uerdingen (Germany) and complement the network already existing between Dormagen and Leverkusen (Germany). The aim is to ensure a safe and reliable supply of carbon monoxide to and across all sites. Although the pipeline was almost completed by the end of year 2009, it cannot currently be brought into operation because of ongoing court proceedings. Following confirmation by the Düsseldorf Administrative Court in the year 2011 that there were no grounds to challenge the material aspects of the planning permission decision, in particular the safety of the materials used and the legal conformity of the relevant pipeline act (Rohrleitungsgesetz), the plaintiffs and the regional government against which legal proceedings had been instituted lodged appeals before the Higher Administrative Court for the state of North Rhine-Westphalia in Münster (Higher Administrative Court). In the year 2014, the Higher Administrative Court raised no objections in principle to the safety and routing of the pipeline, but questioned the constitutionality of the pipeline act which forms the legal basis for the project. On December 21, 2016, Germany's Federal Constitutional Court dismissed the corresponding constitutionality question referred to it by the Higher Administrative Court as inadmissible and confirmed the legal opinion of the Covestro Group. Subsequently, the Higher Administrative Court again considered the facts of the appeal and, in a decision rendered on August 31, 2020, dismissed the actions against the planning permission decision. In addition, the Higher Administrative Court rejected an appeal against its ruling. The plaintiffs then filed a complaint against the denial of leave to appeal with the Federal Administrative Court in Leipzig in February 2021. The German Federal Constitutional Court dismissed the denial of leave to appeal on December 14, 2021. The judgment by the Higher Administrative Court is therefore final. Seven actions against the planning permission decision are still pending at Düsseldorf Administrative Court which could now proceed on the basis of the final judgment by the Higher Administrative Court.

Civil Class Action Lawsuits over Diisocyanates (in the United States)

On July 9, 2018, Covestro LLC, Pittsburgh, Pennsylvania (United States) – as one of numerous other defendants – was served the first of now 12 class action lawsuits initiated by various U.S. diphenylmethane diisocyanate (MDI) and toluene diisocyanate (TDI) customers. The plaintiffs allege that the defendants have violated various provisions of the Sherman Antitrust Act since January 1, 2015, by acting in coordination to limit production capacities of MDI and TDI and, at the same time, raising prices for these products in the market. On October 3, 2018, the Judicial Panel on Multidistrict Litigation ruled that all class action lawsuits in pretrial proceedings would be centralized in the District Court for the Western District of Pennsylvania. Based in essence on the same assertions and the violations of federal consumer protection and antitrust laws allegedly resulting from them, the attorney general of the state of Mississippi filed a separate civil complaint against Covestro LLC and numerous other defendants on behalf of the state and its citizens in September 2019. In November 2020, the parties suspended these lawsuits without prejudice for a period of two years. Owing to the time which has passed, the suspension of the limitation period agreed at the time with regard to the claims of the state and its citizens expired again in November 2022. Covestro currently considers these claims without merit and will therefore use all legal means to defend itself against these allegations – also in light of the official conclusion in November 2018 of the six-month investigation by the U.S. Department of Justice into possible anticompetitive practices in relation to MDI. The case is currently still in the discovery phase.

Other Information

27. Notes to the Statement of Cash Flows

27.1 Cash Flows from Operating Activities

The net cash inflow from operating activities of €970 million (previous year: €2,193 million) reflects the operating surplus and also takes into account changes in working capital and other noncash transactions.

The year-over-year decrease in cash flows from operating activities of €1,223 million (– 55.8%) was mainly the result of a €1,468 million decrease in EBITDA, which was partially offset by a €214 million reduction in cash outflows from working capital and an €8 million decrease in income tax payments.

27.2 Cash Flows from Investing Activities

Net cash outflow for investing activities in 2022 amounted to €477 million (previous year: €1,995 million).

This was primarily attributable to cash outflows for additions to property, plant, equipment and intangible assets of €832 million (previous year: €764 million) and cash outflows for noncurrent financial assets of €124 million. Cash inflows from other current financial assets in the amount of €374 million (previous year: €188 million) had an offsetting effect. The previous year was characterized, in particular, by cash outflows for acquisitions less cash acquired for the takeover of the RFM business in the amount of €1,469 million.

27.3 Cash Flows from Financing Activities

The net cash inflow from financing activities amounted to €64 million in 2022 (previous year: outflow of €965 million). Net borrowing amounted to €995 million (previous year: net credit repayment in the amount of €624 million). Short-term borrowing and debt repayment were netted.

There was an outflow of €150 million (previous year: €0 million) in 2022 for the acquisition of treasury shares as part of Covestro AG's share buyback program. The issuance of treasury shares concerns shares (€8 million) (previous year: €2 million) issued to employees in the context of the Covestment share-based participation program.

In April 2022, a dividend totaling €651 million (previous year: €251 million) was paid to Covestro AG shareholders.

The interest paid totaling €131 million (previous year: €81 million) reflected in cash flows from financing activities relates mainly to forward exchange contracts used to hedge foreign currency risks of €63 million (previous year: €20 million), lease liabilities of €25 million (previous year: €26 million), and bonds of €23 million (previous year: €23 million).

Reconciliation of financial debt in fiscal 2022

			Noncash changes					
	Carrying amounts Dec. 31, 2021	Cash changes	Changes due to exchange rate movements	Changes in measure-ment	Acquisitions (IFRS 3)	Lease contracts	Other changes	Carrying amounts Dec. 31, 2022
	€ million	€ million	€ million	€ million	€ million	€ million	€ million	€ million
Bonds	1,492	494	–	2	–		–	1,988
Liabilities to banks	275	652	(5)	–	–		–	922
Lease liabilities	761	(160)	14	–	–	131	–	746
Other financial liabilities	2	9	–	–	–		(10)	1
Financial debt[1]	**2,530**	**995**	**9**	**2**	**–**	**131**	**(10)**	**3,657**

[1] Excluding forward exchange contracts used to hedge currency risks

Reconciliation of financial debt in fiscal 2021

			Noncash changes					
	Carrying amounts Dec. 31, 2020	Cash changes	Changes due to exchange rate movements	Changes in measure-ment	Acquisitions (IFRS 3)	Lease contracts	Other changes	Carrying amounts Dec. 31, 2021
	€ million	€ million	€ million	€ million	€ million	€ million	€ million	€ million
Bonds	1,990	(500)	–	2	–		–	1,492
Liabilities to banks	227	19	–	–	29		–	275
Lease liabilities	672	(143)	31	–	4	197	–	761
Other financial liabilities	1	–	–	–	–		1	2
Financial debt[1]	**2,890**	**(624)**	**31**	**2**	**33**	**197**	**1**	**2,530**

[1] Excluding forward exchange contracts used to hedge currency risks

28. Related Companies and Persons

28.1 Related Companies

Related entities as defined in IAS 24 (Related Party Disclosures) are those legal entities that are able to exert at least significant influence on Covestro AG and its subsidiaries or over which Covestro AG or its subsidiaries exercise control or have at least a significant influence, or which are controlled by a related person or a close family member of such a person. These include nonconsolidated subsidiaries, joint ventures and associated companies, post-employment benefit plans, and other related parties.

Receivables from and liabilities to related parties

	Dec. 31, 2021		Dec. 31, 2022	
	Receivables	Liabilities	Receivables	Liabilities
	€ million	€ million	€ million	€ million
Nonconsolidated subsidiaries and associates	–	6	1	4
Associates accounted for using the equity method	19	–	–	9
Post-employment benefit plans	–	–	101	–

Receivables from pension plans resulted from initial funding loans granted in the amount of €101 million (previous year: €0 million). Covestro AG has agreed to provide Bayer-Pensionskasse VVaG, Leverkusen (Germany), with an interest-bearing initial funding loan of up to €208 million and Rheinische Pensionskasse VVaG, Leverkusen (Germany), with an interest-bearing initial funding loan of up to €11 million, both at their request. The pension funds are entitled to draw down amounts necessary to meet their regulatory solvency requirements at any time up to the amounts disclosed. The outstanding receivables are subject to a five-year interest rate adjustment mechanism. Following the drawdown of the initial funding loans in December 2022, loan commitments to the pension funds decreased by €102 million to €117 million as of December 31, 2022 (previous year: €219 million). The loan commitments to the pension funds are recognized as other financial obligations.

→ See note 25 "Contingent Liabilities and Other Financial Commitments."

Sales and purchases of goods and services to/from related parties

	2021		2022	
	Sales of goods and services	Purchases of goods and services	Sales of goods and services	Purchases of goods and services
	€ million	€ million	€ million	€ million
Nonconsolidated subsidiaries and associates	48	67	45	65
Associates accounted for using the equity method	31	835	18	801

The goods and services received from associated companies accounted for using the equity method mainly resulted from the ongoing business operations with PO JV, LP, Houston, Texas (United States). Covestro benefits from fixed long-term supply quotas/volumes of propylene oxide (PO) from this company's production.

→ See note 15 "Investments Accounted for Using the Equity Method."

Receivables from and payables to related parties mainly relate to leases and financing arrangements, supply and service relationships, and other transactions. No impairment losses were recognized on receivables from related parties in the reporting year or in the previous year.

The services purchased from other related companies and persons comprise consulting services for Supervisory Board and Works Council elections priced at arm's length. In the reporting year 2022, services amounting to €147 thousand (previous year: €175 thousand) were purchased. There were no liabilities as of December 31, 2022 (previous year: €23 thousand).

28.2 Related Persons

Related persons as defined in IAS 24 include the corporate officers of Covestro AG, who are the members of the Board of Management and Supervisory Board.

Compensation of the Corporate Officers

The compensation for corporate officers of Covestro AG in fiscal 2022 amounted to €8,447 thousand (previous year: €17,023 thousand), including the compensation of the Supervisory Board amounting to €2,454 thousand (previous year: €1,732 thousand).

This compensation is shown below:

Compensation of the corporate officers according to IFRSs

	2021	2022
	€ thousand	€ thousand
Total short-term compensation	12,661	5,826
Total share-based compensation (long-term incentive)	2,188	860
Service cost for pension entitlements earned in the respective year	2,174	1,761
Aggregate compensation (IFRSs)	**17,023**	**8,447**

Aggregate compensation of the members of the Board of Management according to the German Commercial Code (HGB) amounted to €7,115 thousand (previous year: €15,102 thousand).

Since 2016, the members of the Board of Management have been entitled to participate in the Prisma long-term share-based compensation program, as long as they are employed by the Covestro Group, and acquire for their own account and hold an individually defined number of Covestro shares as specified by the guidelines. The fair value of the long-term share-based compensation (Prisma) granted to the Board of Management in fiscal 2022 was €3,743 thousand (previous year: €4,176 thousand).

For the members of the Board of Management serving during fiscal 2022 no provisions for the short-term variable cash compensation were recognized. Provisions of €5,626 thousand (previous year for the short-term and long-term variable cash compensation: €12,808 thousand) were recognized for the long-term variable cash compensation for the members of the Board of Management serving during fiscal 2022. At the end of the year, the present value of the defined benefit pension obligations for the current members of the Board of Management was €9,180 thousand (previous year: €12,594 thousand). No provisions (previous year: €202 thousand) were recognized for long-term share-based cash compensation for former members of the Board of Management. The present value of the defined benefit pension obligations for former members of the Board of Management was €5,447 thousand (previous year: €7,696 thousand).

Supervisory Board compensation is exclusively non-performance-related. In addition to their compensation as members of the Supervisory Board, those employee representatives who are employees of Covestro Group companies receive compensation unrelated to their service on the Supervisory Board. The total amount of such compensation was €1,253 thousand (previous year: €667 thousand). Pension obligations for employee representatives on the Supervisory Board amounted to €1,984 thousand (previous year: €3,698 thousand). Pension obligations for employee representatives who had left the Supervisory Board and the company totaled €1,623 thousand (previous year: €0 thousand).

As in the previous year, the company did not grant any advances or loans to members of the Board of Management or the Supervisory Board in the fiscal year 2022.

→ For further information, please refer to the Compensation Report

29. Auditor’s Fees

Since fiscal 2018, KPMG AG Wirtschaftsprüfungsgesellschaft, Düsseldorf (Germany) (KPMG AG), has been the elected statutory auditor of Covestro AG and the Covestro Group. Dr. Kathryn Ackermann has been the auditor primarily responsible for carrying out the audit of the consolidated financial statements since April 21, 2022. Dr. Kathryn Ackermann and Marc Ufer were responsible for carrying out the 2022 audit of the consolidated financial statements. Dr. Kathryn Ackermann first signed the Independent Auditor’s Report on December 31, 2022.

The following fees were recognized as expenses in the given fiscal year for the services provided by KPMG AG:

Auditor's fees

	2021	2022
	€ million	€ million
Audit services	3.8	3.3
Other assurance services	0.2	0.3
Tax advisory services	0.2	–
Other services	0.2	0.3
Total	**4.4**	**3.9**

The fees for audit services for fiscal 2022 mainly comprise those for the statutory audit of the consolidated financial statements of the Covestro Group, the review of the Covestro Group’s interim report for the period ended June 30, 2022, and the audit of the financial statements of Covestro AG and its subsidiaries in Germany, including audits relating to the German Energy Industry Act (EnWG) and similar standards.

The fees for other assurance services in fiscal year 2022 include, in particular, the audit of sustainability information and special energy industry audits. Other services primarily consist of fees for IT security audits and other consulting services.

30. Events after the End of the Reporting Period

No events have occurred since January 1, 2023, that have a material impact on the net assets, financial position and results of operations of the Covestro Group.

Leverkusen, February 24, 2023
Covestro AG
The Board of Management