Consolidated Financial Statements

The Group's net assets, financial position and results of operations remain positive. Total assets fell slightly by € 4.4 billion to € 101.5 billion.

Earnings per share fell to € -0.82, which includes the non-cash earnings contribution made by the valuation of investment properties in the amount of € -1.3 billion and impairment losses on goodwill of € -0.9 billion.

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Consolidated Income Statement

for the period from January 1 until December 31

in € million	Notes	2021*	2022
Revenue from property letting		3,465.0	4,724.6
Other revenue from property management		158.9	427.2
Revenue from property management	**B10**	**3,623.9**	**5,151.8**
Income from disposal of properties		1,122.2	3,242.4
Carrying amount of properties sold		-1,044.6	-3,172.0
Revaluation of assets held for sale		87.4	68.0
Profit from the disposal of properties	**B11**	**165.0**	**138.4**
Revenue from disposal of real estate inventories		519.6	588.4
Cost of sold real estate inventories		-381.7	-460.9
Profit from disposal of real estate inventories	**B12**	**137.9**	**127.5**
Net income from fair value adjustments of investment properties	B13	7,393.8	-1,269.8
Capitalized internal expenses	B14	662.6	673.3
Cost of materials	B15	-1,671.1	-2,501.5
Personnel expenses	B16	-682.3	-863.8
Depreciation and amortization**	D26	-3,872.6	-1,279.1
Other operating income	B17	276.9	218.8
Impairment losses on financial assets		-39.2	-49.8
Net income from the derecognition of financial assets measured at amortized cost		-2.5	-2.6
Other operating expenses	B18	-388.9	-397.5
Net income from investments accounted for using the equity method		15.7	-436.6
Interest income	B19	21.5	115.5
Interest expenses	B20	-411.6	-367.6
Other financial result	B21	-137.1	10.3
Earnings before tax		**5,092.0**	**-732.7**
Income taxes	B22	-2,651.5	63.3
Profit for the period		**2,440.5**	**-669.4**
Attributable to:			
Vonovia's shareholders		2,251.5	-643.8
Vonovia's hybrid capital investors		38.4	–
Non-controlling interests		150.6	-25.6
Earnings per share (diluted) in €	**C24**	**3.59**	**-0.82**
Earnings per share (basic) in €	**C24**	**3.59**	**-0.82**

* Adjusted (see note [A2] Adjustment to Prior-year Figures).
** Without impairment losses on real estate holdings recognized as investment properties.

Consolidated Statement of Comprehensive Income

for the period from January 1 until December 31

in € million	2021*	2022
Profit for the period	2,440.5	-669.4
Change in unrealized gains/losses	26.5	77.9
Taxes on the change in unrealized gains/losses	-8.3	-23.9
Net realized gains/losses	-0.4	-5.0
Taxes due to net realized gains/losses	3.2	4.1
Profit on cash flow hedges	21.0	53.1
Changes in the period	-110.7	-408.8
Tax effect	13.3	11.7
Profit on currency translation differences	-97.4	-397.1
Items which will be recognized in profit or loss in the future	-76.4	-344.0
Changes in the period	81.1	-17.1
Taxes on changes in the period	-1.2	0.6
Profit on equity instruments at fair value in other comprehensive income	79.9	-16.5
Change in actuarial gains/losses, net	37.0	165.8
Tax effect	-12.6	-52.2
Profit on actuarial gains and losses from pensions and similar obligations	24.4	113.6
Items which will not be recognized in profit or loss in the future	104.3	97.1
Other comprehensive income	27.9	-246.9
Total comprehensive income	**2,468.4**	**-916.3**
Attributable to:		
Vonovia's shareholders	2,278.9	-894.5
Vonovia's hybrid capital investors	38.4	–
Non-controlling interests	151.1	-21.8

* Adjusted (see note [A2] Adjustment to Prior-year Figures).

Consolidated Balance Sheet

Assets

in € million	Notes	Dec. 31, 2021*	Dec. 31, 2022
Intangible assets	D26	2,722.9	1,659.5
Property, plant and equipment	D27	654.1	673.4
Investment properties	D28	94,100.1	92,300.1
Financial assets	D29	1,016.7	745.0
Investments accounted for using the equity method	D30	425.3	240.1
Other assets	D31	199.6	380.2
Deferred tax assets	D32	19.8	39.6
Total non-current assets		**99,138.5**	**96,037.9**
Inventories	D33	16.4	146.4
Trade receivables	D34	449.9	330.2
Financial assets	D29	1,063.3	768.2
Other assets	D31	220.9	337.5
Income tax receivables	D32	201.9	239.9
Cash and cash equivalents	D35	1,432.8	1,302.4
Real estate inventories	D36	671.2	2,156.3
Assets held for sale	D37	2,719.4	70.8
Total current assets		**6,775.8**	**5,351.7**
Total assets		**105,914.3**	**101,389.6**

* Adjusted (see note [A2] Adjustment to Prior-year Figures).

Equity and Liabilities

in € million	Notes	Dec. 31, 2021*	Dec. 31, 2022
Subscribed capital		776.6	795.8
Capital reserves		15,458.4	5,151.6
Retained earnings		16,535.5	25,605.1
Other reserves		126.2	-221.0
Total equity attributable to Vonovia shareholders		**32,896.7**	**31,331.5**
Non-controlling interests		3,242.4	3,107.3
Total equity	E38	**36,139.1**	**34,438.8**
Provisions	E39	866.3	655.7
Trade payables	E40	5.4	5.2
Non-derivative financial liabilities	E41	40,171.9	41,269.7
Derivatives	E42	66.2	-
Lease liabilities	E43	634.9	641.0
Liabilities to non-controlling interests	E44	224.5	220.0
Financial liabilities from tenant financing	E45	44.9	43.0
Other liabilities	E46	5.2	27.9
Deferred tax liabilities		18,693.9	18,612.4
Total non-current liabilities		**60,713.2**	**61,474.9**
Provisions	E39	727.2	549.7
Trade payables	E40	444.4	563.3
Non-derivative financial liabilities	E41	6,857.1	3,790.0
Derivatives and put options	E42	266.0	272.2
Lease liabilities	E43	44.2	41.5
Liabilities to non-controlling interests	E44	16.0	15.9
Financial liabilities from tenant financing	E45	112.6	112.1
Other liabilities	E46	228.8	131.2
Liabilities associated with assets classified as held for sale	D37	365.7	-
Total current liabilities		**9,062.0**	**5,475.9**
Total liabilities		**69,775.2**	**66,950.8**
Total equity and liabilities		**105,914.3**	**101,389.6**

* Adjusted (see note [A2] Adjustment to Prior-year Figures).

Consolidated Statement of Cash Flows

for the period from January 1 until December 31

in € million	Notes	2021*	2022
Profit for the period		2,440.5	-669.4
Net income from fair value adjustments of investment properties	B13	-7,393.8	1,269.8
Change in value from properties sold	B11	-87.4	-68.0
Depreciation and amortization	D26	3,872.6	1,279.1
Interest expenses/income and other financial result	B19/B20/B21	554.9	263.0
Income taxes	B22	2,651.5	-63.3
Profit on the disposal of investment properties	B11	-77.6	-70.4
Results from disposals of other non-current assets		-0.6	-1.6
Other expenses/income not affecting cash		-94.4	439.9
Change in working capital		51.2	-106.6
Income tax paid		-93.0	-188.2
Cash flow from operating activities		**1,823.9**	**2,084.3**
Proceeds from disposals of investment properties and assets held for sale		1,084.8	3,033.6
Proceeds from disposals of other assets		132.7	75.7
Proceeds from the disposal of other financial assets		–	2,399.6
Payments for investments in investment properties	D28	-1,957.1	-2,475.5
Payments for investments in other assets	D26/D27/D29	-352.7	-228.2
Payments for acquisition of shares in consolidated companies, in due consideration of liquid funds	A4	-17,122.8	–
Payments for acquisition of other financial assets		-912.8	-1,900.0
Interest received		12.1	33.0
Cash flow from investing activities		**-19,115.8**	**938.2**

in € million	Notes	2021*	2022
Capital contributions on the issue of new shares (including premium)	E38	8,080.5	–
Cash paid to shareholders of Vonovia SE and non-controlling interests	E38	-514.6	-714.0
Cash paid to hybrid capital investors		-1,040.0	–
Proceeds from issuing financial liabilities	E38	23,945.3	6,802.7
Cash repayments of financial liabilities	E41	-11,534.0	-8,540.1
Cash repayments of lease liabilities	E43	-27.3	-41.6
Payments for transaction costs in connection with capital measures	E41	-346.1	-45.9
Payments for other financing costs	E41	-28.5	-12.6
Payments in connection with the disposal of shares in non-controlling interests		-7.7	-52.6
Interest paid		-402.6	-541.0
Cash flow from financing activities	A4	18,125.0	-3,145.1
Influence of changes in foreign exchange rates on cash and cash equivalents		-2.3	-7.8
Change in cash and cash equivalents related to assets held for sale		-11.3	–
Net changes in cash and cash equivalents		819.5	-130.4
Cash and cash equivalents at the beginning of the period		613.3	1,432.8
Cash and cash equivalents at the end of the period**	**D35**	**1,432.8**	**1,302.4**

* Adjusted (see note [A2] Adjustment to Prior-year Figures).

** Includes € 200.6 million (Dec. 31, 2021: € 298.8 million) in current securities classified as cash equivalents and total restricted cash of € 104.1 million (Dec. 31, 2021: € 117.6 million).

Consolidated Statement of Changes in Equity

				Other reserves	
in € million	Subscribed capital	Capital reserves	Retained earnings	Cash flow hedges	Equity instruments at fair value in other comprehensive income
As of Jan. 1, 2022*	776.6	15,458.4	16,535.5	-11.9	80.7
Profit for the period			-643.8		
Changes in the period			110.0	54.0	-16.8
Reclassification affecting net income				-0.9	
Other comprehensive income			110.0	53.1	-16.8
Total comprehensive income			-533.8	53.1	-16.8
Capital increase	19.2				
Premium on the issue of new shares		597.6			
Transaction costs in connection with the issue of shares		-0.7			
Withdrawal from the capital reserves		-10,903.8	10,903.8		
Dividend distributed by Vonovia SE			-1,289.2		
Changes recognized directly in equity		0.1	-11.2		
As of Dec. 31, 2022	795.8	5,151.6	25,605.1	41.2	63.9
As of Jan. 1, 2021	565.9	9,037.9	13,368.2	-32.9	50.0
Profit for the period			2,251.5		
Changes in the period			23.9	18.2	79.9
Reclassification affecting net income				2.8	
Other comprehensive income			23.9	21.0	79.9
Total comprehensive income			2,275.4	21.0	79.9
Capital increase	210.7				
Premium on the issue of new shares		8,340.1			
Transaction costs in connection with the issue of shares		-93.4			
Reclassification of equity instruments at fair value in other comprehensive income			49.2		-49.2
Withdrawal from the capital reserves		-1,826.2	1,826.2		
Dividend distributed by Vonovia SE			-956.3		
Addition of non-controlling interests due to acquisition of Deutsche Wohnen					
Changes recognized directly in equity			-27.2		
As of Dec. 31, 2021*	776.6	15,458.4	16,535.5	-11.9	80.7

* Adjusted (see note [A2] Adjustment to Prior-year Figures).

	Currency translation differences	Total	Equity attributable to Vonovia's shareholders	Equity attributable to Vonovia's hybrid capital investors	Equity attributable to Vonovia's share-holders and hybrid capital investors	Non-controlling interests	Total equity
	57.4	**126.2**	**32,896.7**		**32,896.7**	**3,242.4**	**36,139.1**
			-643.8		**-643.8**	**-25.6**	**-669.4**
	-397.0	-359.8	-249.8		-249.8	3.8	-246.0
		-0.9	-0.9		-0.9		-0.9
	-397.0	**-360.7**	**-250.7**		**-250.7**	**3.8**	**-246.9**
	-397.0	**-360.7**	**-894.5**		**-894.5**	**-21.8**	**-916.3**
			19.2		19.2		19.2
			597.6		597.6		597.6
			-0.7		-0.7		-0.7
			0.0		0.0		0.0
			-1,289.2		-1,289.2		-1,289.2
	13.5	13.5	2.4		2.4	-113.3	-110.9
	-326.1	**-221.0**	**31,331.5**		**31,331.5**	**3,107.3**	**34,438.8**
	154.8	**171.9**	**23,143.9**	**1,001.6**	**24,145.5**	**686.3**	**24,831.8**
			2,251.5	**38.4**	**2,289.9**	**150.6**	**2,440.5**
	-97.4	0.7	24.6		24.6	0.5	25.1
		2.8	2.8		2.8		2.8
	-97.4	**3.5**	**27.4**		**27.4**	**0.5**	**27.9**
	-97.4	**3.5**	**2,278.9**	**38.4**	**2,317.3**	**151.1**	**2,468.4**
			210.7		210.7		210.7
			8,340.1		8,340.1		8,340.1
			-93.4		-93.4		-93.4
		-49.2	0.0		0.0		0.0
			0.0		0.0		0.0
			-956.3		-956.3		-956.3
						2,421.0	2,421.0
			-27.2	-1,040.0	-1,067.2	-16.0	-1,083.2
	57.4	**126.2**	**32,896.7**		**32,896.7**	**3,242.4**	**36,139.1**

Notes

(A): Principles of the Consolidated Financial Statements

1 General Information

Vonovia SE is incorporated and domiciled in Germany. The company has been registered with the local court (Amtsgericht) in Bochum under HRB 16879 since 2017. Its registered office is at Universitätsstraße 133, 44803 Bochum, Germany.

The consolidated financial statements as of and for the year ended December 31, 2022, have been prepared in accordance with the International Financial Reporting Standards (IFRS) as adopted in the EU. In addition, the supplementary commercial law provisions under Section 315e (1) of the German Commercial Code (HGB) have been observed. Changes due to the conclusion of the purchase price allocation in connection with the acquisition of the Deutsche Wohnen Group are set out in chapter → **[A2] Adjustment to Prior-year Figures**.

The consolidated financial statements have been prepared on the basis of amortized cost except for investment properties, assets held for sale, derivative financial instruments, plan assets and equity instruments at fair value in other comprehensive income. These are measured at their fair value. The income statement has been prepared using the nature of expense method.

These consolidated financial statements are presented in euros, which is the Group's functional currency. Unless stated otherwise, all figures are shown in million euros (€ million).

The following overview indicates the chapters on the individual topics containing disclosures on accounting policies, judgments and estimates:

Chapter	Accounting policies, judgments, estimates
A6	Currency translation
A7	Government grants
B	Profit for the period
B12	Profit on the disposal of properties
B22	Income taxes
C24	Earnings per share
D26	Intangible assets/Goodwill
D27	Property, plant and equipment
D28	Investment properties
D29	Financial assets
D33	Inventories
D34	Trade receivables
D35	Cash and cash equivalents
D36	Real estate inventories
D37	Assets and liabilities held for sale
E38	Total equity
E39	Provisions
E41	Non-derivative financial liabilities
E43	Leases
E44	Liabilities to non-controlling interests
E45	Financial liabilities from tenant financing
F48	Share-based payment

2 Adjustment to Prior-year Figures

The conclusion of the purchase price allocation in connection with the acquisition of the Deutsche Wohnen Group (see → [A4] Scope of Consolidation and Business Combinations) resulted in the adjustments set out below for December 31, 2021:

Balance Sheet

The tables below illustrate the changes as against the prior-year presentation in the balance sheet:

in € million	Dec. 31, 2021	Adjustment	Dec. 31, 2021 (adjusted)
Intangible assets	3,005.3	-282.4	2,722.9
Property, plant and equipment	654.1		654.1
Investment properties	94,100.1		94,100.1
Financial assets	1,016.7		1,016.7
Investments accounted for using the equity method	548.9	-123.6	425.3
Other assets	199.6		199.6
Deferred tax assets	19.8		19.8
Total non-current assets	**99,544.5**	**-406.0**	**99,138.5**
Inventories	16.4		16.4
Trade receivables	449.9		449.9
Financial assets	1,063.3		1,063.3
Other assets	220.9		220.9
Income tax receivables	201.9		201.9
Cash and cash equivalents	1,432.8		1,432.8
Real estate inventories	671.2		671.2
Assets held for sale	2,719.4		2,719.4
Total current assets	**6,775.8**	**–**	**6,775.8**
Total assets	**106,320.3**	**-406.0**	**105,914.3**

in € million	Dec. 31, 2021	Adjustment	Dec. 31, 2021 (adjusted)
Subscribed capital	776.6		776.6
Capital reserves	15,458.4		15,458.4
Retained earnings	16,925.9	-390.4	16,535.5
Other reserves	126.2		126.2
Total equity attributable to Vonovia shareholders	**33,287.1**	**-390.4**	**32,896.7**
Non-controlling interests	3,258.0	-15.6	3,242.4
Total equity	**36,545.1**	**-406.0**	**36,139.1**
Provisions	866.3		866.3
Trade payables	5.4		5.4
Non-derivative financial liabilities	40,171.9		40,171.9
Derivatives	66.2		66.2
Lease liabilities	634.9		634.9
Liabilities to non-controlling interests	224.5		224.5
Financial liabilities from tenant financing	44.9		44.9
Other liabilities	5.2		5.2
Deferred tax liabilities	18,693.9		18,693.9
Total non-current liabilities	**60,713.2**	**-**	**60,713.2**
Provisions	727.2		727.2
Trade payables	444.4		444.4
Non-derivative financial liabilities	6,857.1		6,857.1
Derivatives and put options	266.0		266.0
Lease liabilities	44.2		44.2
Liabilities to non-controlling interests	16.0		16.0
Financial liabilities from tenant financing	112.6		112.6
Other liabilities	228.8		228.8
Liabilities associated with assets classified as held for sale	365.7		365.7
Total current liabilities	**9,062.0**	**-**	**9,062.0**
Total liabilities	**69,775.2**	**-**	**69,775.2**
Total equity and liabilities	**106,320.3**	**-406.0**	**105,914.3**

The change in the item Investments accounted for using the equity method is due to the adjusted assessment of the measurement of the acquired joint ventures and associates. This reassessment of the information already known as of the date of consolidation results in a reduction in the provisional value recognized by € 123.6 million, with € 15.6 million attributable to non-controlling interests. By contrast, the goodwill resulting from the acquisition of the Deutsche Wohnen Group has increased by € 108.0 million.

The impairment test for goodwill as of December 31, 2021 was also recalculated. This took account not only of the adjusted goodwill for the Deutsche Wohnen Group in terms of amount, but also of the final allocation to the relevant cash-generating units. All in all, the final impairment loss to be recognized for the 2021 fiscal year is up by € 390.4 million.

Income Statement

The table below illustrates the changes as against the prior-year presentation in the income statement:

in € million	2021	Adjustment	2021 (adjusted)
Revenue from property letting	3,465.0		3,465.0
Other revenue from property management	158.9		158.9
Revenue from property management	**3,623.9**		**3,623.9**
Income from the disposal of properties	1,122.2		1,122.2
Carrying amount of properties sold	-1,044.6		-1,044.6
Revaluation of assets held for sale	87.4		87.4
Profit from the disposal of properties	**165.0**		**165.0**
Revenue from disposal of real estate inventories	519.6		519.6
Cost of sold real estate inventories	-381.7		-381.7
Profit from disposal of real estate inventories	**137.9**		**137.9**
Net income from fair value adjustments of investment properties	7,393.8		7,393.8
Capitalized internal expenses	662.6		662.6
Cost of materials	-1,671.1		-1,671.1
Personnel expenses	-682.3		-682.3
Depreciation and amortization	-3,482.2	-390.4	-3,872.6
Other operating income	276.9		276.9
Impairment losses on financial assets	-39.2		-39.2
Net income from the derecognition of financial assets measured at amortized cost	-2.5		-2.5
Other operating expenses	-388.9		-388.9
Net income from investments accounted for using the equity method	15.7		15.7
Interest income	21.5		21.5
Interest expenses	-411.6		-411.6
Other financial result	-137.1		-137.1
Earnings before tax	**5,482.4**	**-390.4**	**5,092.0**
Income taxes	-2,651.5		-2,651.5
Profit for the period	**2,830.9**	**-390.4**	**2,440.5**
Attributable to:			
Vonovia's shareholders	2,641.9	-390.4	2,251.5
Vonovia's hybrid capital investors	38.4		38.4
Non-controlling interests	150.6		150.6
Earnings per share (diluted) in €	**4.22**	**-0.63**	**3.59**
Earnings per share (basic) in €	**4.22**	**-0.63**	**3.59**

Segment Report

In the 2022 fiscal year, Vonovia continued with the 2021 management system for the time being. Details can be found in the chapter Management System of the **2021 Annual Report**. Vonovia's business was managed via the five segments: Rental, Value-add, Recurring Sales, Development and Deutsche Wohnen.

In the course of the fourth quarter of 2022, the Deutsche Wohnen segment was dissolved and transferred to the Rental, Value-add, Recurring Sales, Development and Care segments. Details on the allocation of Deutsche Wohnen's segment figures for 2021 to the five segments are presented below.

	2021	Adjustments		2021 (adjusted)	Allocation to the segments				
in € million	Deutsche Wohnen	Removal of at-equity-investment from Adjusted EBITDA*	Lineshifts**	Segments total	Rental	Value-add	Recurring Sales	Develop-ment	Care
Jan. 1–Dec. 31, 2021									
Segment revenue	**307.7**		**36.6**	**344.3**	**206.9**	**10.5**	**14.2**	**43.9**	**68.8**
thereof external revenue	302.2		-1.1	301.1	206.9	9.1	14.2	2.1	68.8
thereof internal revenue	5.5		37.7	43.2		1.4		41.8	
Carrying amount of assets sold	-0.2		-11.6	-11.8			-11.8		
Revaluation from disposal of assets held for sale	–		–	–					
Expenses for maintenance	-41.7		-2.5	-44.2	-41.8				-2.4
Cost of development to sell	-14.5		11.6	-2.9				-2.9	
Cost of development to hold			-41.8	-41.8				-41.8	
Operating expenses	-80.5	-6.3	7.7	-79.1	-26.0	-5.4	-3.2	-1.6	-42.9
Adjusted EBITDA Total	**170.8**	**-6.3**	**–**	**164.5**	**139.1**	**5.1**	**-0.8**	**-2.4**	**23.5**

* Adjusted to new adjusted EBITDA definition (excluding results from at-equity investments), due to Vonovia's minor control influence on the operating results of companies consolidated using the equity method.

** The amounts shown in this column are transactions that took place in the old segment structure within the Deutsche Wohnen segment and now represent transactions between the segments of the new segment structure.

3 Consolidation Principles

Business Combinations

An entity shall account for each business combination by applying the acquisition method if it obtains control. All hidden reserves and charges of the company acquired are disclosed as part of the necessary remeasurement. Any excess of the cost of a business combination over the net fair value of the identifiable assets, liabilities and contingent liabilities, following the disclosure of hidden reserves and charges, is recognized as goodwill in the balance sheet. The consideration transferred at the time of the acquisition and the identifiable net assets that are acquired are measured at fair value as a general rule. Transaction costs are recognized as an expense immediately insofar as they do not relate to costs pertaining to the raising of capital or the issue of debt capital.

Subsidiaries

Subsidiaries are companies that are controlled by the Group. The Group controls an investee if it is exposed to risks or has rights to variable returns from its involvement with the investee and has the ability to use its power of control over the investee to influence the level of these returns. In the process of full consolidation, the assets and liabilities of a subsidiary are included in the consolidated financial statements in their entirety. Subsidiaries are included in the consolidated financial statements from the date on which Vonovia SE obtains control until the day control ceases.

Non-Controlling Interests

The equity of a subsidiary that is not attributable to Vonovia is shown as a separate component of equity under non-controlling interests. Non-controlling interests are measured based on their share of the identified net assets of the acquired company at the time of acquisition.

Changes in a parent's ownership interest in a subsidiary that do not result in the parent losing control of the subsidiary are equity transactions.

Loss of Control

If Vonovia loses control over a subsidiary, the assets and liabilities of the subsidiary in question as well as any corresponding non-controlling interests are derecognized. The result is recognized in the income statement. Any investment retained is recognized at fair value when control is lost.

Associates and Joint Arrangements

Associates and joint arrangements classified as joint ventures are accounted for using the equity method. An associate is an entity over which the investor has significant influence. A joint venture is a joint arrangement whereby the parties that have joint control of the arrangement have rights to the net assets of the arrangement. If the arrangement involves rights to the assets and obligations for the liabilities of a joint arrangement instead, then these are recognized using quota consolidation.

Business Transactions Eliminated on Consolidation

The effects of the business transactions between the entities included in the Vonovia consolidated financial statements are eliminated.

Results from business transactions with companies accounted for using the equity method are only eliminated in line with the Group's share in the investee.

The financial statements of Vonovia SE and all subsidiaries are consistently prepared according to uniform accounting policies.

4 Scope of Consolidation and Business Combinations

All in all, and including Vonovia SE, 654 companies (December 31, 2021: 736) – thereof 429 (December 31, 2021: 441) domestic companies and 225 (December 31, 2021: 295) foreign companies – have been included in the consolidated financial statements as of December 31, 2022. The two domestic companies with which joint activities were performed in the previous year are now included in the consolidated financial statements for the first time due to increases in the interests held. In addition, 25 (December 31, 2021: 25) domestic companies and one (December 31, 2021: one) foreign company were included as joint ventures and five domestic companies (December 31, 2021: five) and three (December 31, 2021: two) foreign companies were included as associates accounted for using the equity method.

Three (December 31, 2021: three) foreign companies are no longer included in the scope of consolidation as they are no longer considered to be material. These companies are shown as non-consolidated affiliated companies.

For all subsidiaries included in the consolidated financial statements, the reporting date is December 31.

The → list of Vonovia shareholdings is appended to the Notes to the consolidated financial statements as an integral part thereof.

Companies that have made use of the exemption provision set out in Section 264 (3) of the German Commercial Code (HGB) are marked accordingly in the list of shareholdings.

The year-on-year changes in the consolidated companies as of December 31, 2022 result from five acquisitions, two reallocations that have already been mentioned above, one newly established company, 66 mergers, 18 sales, four accruals and two liquidations. The addition to associates is due to a reallocation following the assumption of control.

Acquisition of Deutsche Wohnen SE

The total number of voting shares held by Vonovia SE in Deutsche Wohnen SE as of December 31, 2022, is 347,728,483. Of these shares, 198,463,161 were tendered as part of the takeover offer, 141,468,495 were acquired on the market or by way of individual agreements and 7,796,827 were added through the conversion of acquired convertible bonds. As of December 31, 2022, this represents 87.60% of the share capital entitled to voting rights. Deutsche Wohnen SE also holds a further 3,362,003 shares as own shares.

As part of the final purchase price allocation, the total consideration for the business combination comprises the following:

in € billion	
Fair value of shares held as of September 30, 2021	7.5
Net cash purchase price component for shares tendered	10.5
Total consideration	**18.0**

The allocation of the total purchase price to the acquired assets and liabilities (PPA) of the Deutsche Wohnen Group as of the date of first-time consolidation is based on the financial statements of the Deutsche Wohnen Group as of September 30, 2021, and on the necessary adjustments to the fair values of the assets and liabilities.

The allocation of the total purchase price was finalized as of September 30, 2022. The assessment of the measurement of the acquired joint ventures and associates was adjusted as against December 31, 2021. This reassessment, based on the information available as of the date of consolidation, reduces the fair value of other assets by € 123.6 million.

The assets and liabilities assumed in the course of the business combination had the following fair values as of the date of first-time consolidation on September 30, 2021.

in € billion	
Investment properties	28.2
Financial assets	1.0
Cash and cash equivalents	0.8
Assets held for sale	2.2
Fair value of other assets	1.3
Total assets	**33.5**
Provisions	0.5
Non-derivative financial liabilities	11.2
Deferred tax liabilities	5.4
Non-controlling interests	0.5
Fair value of other liabilities	0.7
Total liabilities	**18.3**
Fair value net assets	**15.2**
Consideration	18.0
Non-controlling interests	2.0
Goodwill	**4.8**

The non-controlling interests are included based on the share of the assets and liabilities of Deutsche Wohnen that have been recognized.

The goodwill represents synergies from the expected integration of the Deutsche Wohnen Group, in particular through the shared administration and management of the respective residential units. Goodwill was definitively allocated to one or several cash-generating units as of September 30, 2022, with the prior-year figures being adjusted accordingly.

In the 2022 fiscal year, no transaction costs related to the acquisition of the Deutsche Wohnen Group were recognized in other operating expenses affecting net income.

5 Financial Reporting of Financial Assets and Financial Liabilities

Loans and Receivables

Loans and receivables are first recognized as incurred, other non-derivative financial assets as of the day of trading. The day of trading is the date on which Vonovia becomes a contracting party of the financial instrument. All financial instruments are initially measured at fair value, taking account of transaction costs. Trade receivables are stated at the transaction price. A financial asset is derecognized when the contractual rights to the cash flows from the financial asset expire, or the financial asset is transferred and Vonovia neither retains control nor retains material risks and rewards associated with ownership of the financial asset.

Loans and receivables are stated at amortized cost using the effective interest method.

Vonovia determines whether there is an objective indication of an impairment at the level of individual financial instruments if they are material, and, for financial instruments for which no impairments have been identified at the level of the individual financial instruments or such impairments are immaterial, grouped according to risk profile. Impairments are identified for individual financial instruments when the counterparty has defaulted or breached a contract or there are indications of risks of impairments due to a rating downgrade and general information (loss event). For groups of financial instruments with similar risks, historical default probabilities in relation to the time overdue are drawn upon (loss event). An impairment is calculated after the occurrence of a loss event as the difference between the carrying amount and the value of the discounted estimated future cash flow. The original effective interest rate is taken as the discount rate. Impairment losses are recognized with effect on net income and offset directly with the carrying amount of the financial instrument. Any interest income on impaired financial instruments is still recognized. If there are indications that the amount of the impairment loss will be smaller, this reduction is credited to the financial instrument affecting net income to the extent that the sum does not exceed the amortized cost that would have been recognized if the impairment had not occurred.

Derivative Financial Instruments

Derivative financial instruments are stated at their fair value on the day of trading when they are recognized for the first time. The fair values of the derivative financial instruments are calculated using standard market valuation methods for such instruments on the basis of the market data available on the valuation date.

With derivatives that are not designated as a hedging instrument in the balance sheet, changes in the fair value are recognized in profit or loss with effect on net income.

Compared with IAS 39, the IFRS 9 regulations relating to hedge accounting include, among other things, an expanded range of eligible hedged items, changes regarding the posting approach for certain undesignated value components of hedging instruments, the abolition of the fixed effectiveness ranges and retrospective effectiveness testing as well as the first-time introduction of "recalibration." The less restrictive provisions compared with IAS 39 make it easier to reflect economic risk management in the balance sheet, which can, in turn, reduce artificial volatility in the income statement.

At the time of application of IFRS 9, Vonovia will opt to continue to apply the hedge accounting provisions set out in IAS 39 as opposed to the provisions of IFRS 9. Vonovia applies this accounting method to all hedge relationships.

Contracts concluded for the purpose of receiving or supplying non-financial items in accordance with the company's expected purchase, sale, or use requirements (own-use contracts) are not recognized as derivative financial instruments, but rather as pending transactions under IAS 37.

With derivatives designated as hedging instruments, the recognition of changes in the fair value depends on the type of hedge:

> With a fair value hedge, the changes in the fair value of the derivative financial instruments and of the underlying hedged items attributable to the hedged risk are recognized affecting net income.
> With a cash flow hedge, the unrealized gains and losses are initially recognized in other comprehensive income to the extent that the hedge is effective. Amounts accumulated in other comprehensive income are reclassified to the income statement at the same time the underlying hedged item affects net income. To the extent that the hedge is ineffective, the change in fair value is immediately recognized in net interest.

Embedded derivative financial instruments that are combined with a non-derivative financial instrument (host contract) to form a hybrid financial instrument are to be separated from the underlying contract pursuant to IFRS 9 as a general rule and accounted for separately if (i) its economic risks and characteristics are not closely related to those of the host contract, (ii) a separate instrument with the same terms as the embedded derivative would meet the definition of a derivative, and (iii) the hybrid instrument is not measured at fair value affecting net income with changes in fair value recognized in the income statement. As soon as the derivative is to be separated from its host contract, the individual components of the hybrid financial instrument are to be accounted for based on the provisions that apply to the individual financial instruments.

In order to measure interest rate swaps, future cash flows are calculated and then discounted. The calculated cash flows result from the contract conditions. The contract conditions regularly refer to the EURIBOR/STIBOR reference rates (3M and 6M EURIBOR/STIBOR). Discounting is based on market interest rate data as of the reporting date for comparable instruments (EURIBOR/STIBOR rate of the same tenor). The fair value contains the credit risk of the interest rate swaps and therefore allows for adjustments for the company's own credit risk or for the counterparty credit risk.

To measure the cross currency swaps, future cash flows are calculated and then discounted. The calculated cash flows result from the contract conditions and the USD forward rates (development of exchange rates expected by the market). Discounting is based on market interest rate data as of the reporting date for comparable instruments (EURIBOR rate of the same tenor). The fair value contains the credit risk of the cross currency swaps and therefore allows for adjustments for the company's own credit risk or for the counterparty credit risk.

Equity Instruments to Be Recognized at Fair Value in Other Comprehensive Income

In general, the equity instruments to be recognized at fair value in other comprehensive income are shares in companies that were acquired with long-term strategic intentions.

These equity instruments to be recognized at fair value in other comprehensive income are initially stated at their fair value, plus the directly attributable transaction costs. Subsequent measurement is at fair value as a general rule. Changes in the fair value are recognized in other comprehensive income.

The fair value of equity instruments to be recognized at fair value in other comprehensive income is based on quoted market prices as of the reporting date. If these equity instruments are derecognized, the cumulative gain or loss recognized in other comprehensive income is transferred to retained earnings, not affecting net income. Interest on interest-bearing financial instruments of this category is calculated using the effective interest method. Dividends on equity instruments in this category are shown in the income statement.

6 Currency Translation

Accounting Policies

Foreign currency transactions involving Group companies are converted into the functional currency, in accordance with the temporal method, at the exchange rate that applies on the day of the transaction. Monetary balance sheet items denominated in a foreign currency are converted at the exchange rate that applies on each reporting date. Any exchange differences are recognized affecting net income. Non-monetary items that are measured in terms of historical cost are recorded on the reporting date at the exchange rate on the date they were first recognized. Non-monetary items that are measured at fair value are translated on the reporting date using the exchange rate on the date the fair value was determined. Exchange differences relating to non-monetary items are recognized affecting net income insofar as a profit or loss on the corresponding line item is also recognized affecting net income. Otherwise, they are disclosed in other comprehensive income.

The main foreign subsidiaries included in the consolidated financial statements operate their business independently in line with functional theory. The annual financial statements of those subsidiaries whose functional currency is not the euro are converted into the reporting currency using the modified closing rate method. The functional currency of individual foreign units is always the respective local currency. Any resulting exchange differences are disclosed as a separate item in other comprehensive income. When a foreign subsidiary leaves the scope of consolidation, the cumulative exchange differences are reversed and recognized in profit or loss.

Vonovia applies the concept of functional currency translation in accordance with IAS 21 "Effects of Changes in Foreign Exchange Rates" to its consolidated financial statements. The functional currency of Vonovia SE and the reporting currency of the Vonovia Group is the euro.

The exchange rates of the currencies relevant to the Vonovia Group have developed as follows:

	Closing rate		Average for period	
Basis: € 1	Dec. 31, 2021	Dec. 31, 2022	2021	2022
SEK – Swedish krona	10.25	11.12	10.15	10.63
USD – US dollar	1.13	1.07	1.18	1.05

7 Government Grants

Accounting Policies

Government grants are recognized when there is reasonable assurance that the relevant conditions will be fulfilled and that the grants will be awarded.

Government grants that do not relate to investments are regularly recognized as income in the periods in which the relevant expenses are incurred.

Expenses subsidies granted in the form of rent, interest and other expenses subsidies are recorded as income in the periods in which the expenses are incurred and shown within other revenue from property management.

The low-interest loans are grants from public authorities that – insofar as the company received them as part of a business combination – are recorded at present value. The difference between face value and present value is recognized with an effect on net income over the maturity term of the corresponding loans.

New expenses loans or low-interest loans are initially recognized at their present value within the non-derivative financial liabilities on the basis of the market interest rate at the time the loans are taken out. The difference between the face value and the present value of the loan is recognized as deferred income. Reversal occurs, in principle, with an effect on net income in line with the length of the fixed-interest-rate period of the relevant loans. In cases where the low-interest loans are issued as part of capitalized modernization measures, the difference between the face value and the present value of the loan is deducted from the capitalized acquisition cost. In subsequent measurements, the loans are measured at amortized cost.

The companies that belong to the Group receive government grants in the form of construction subsidies, expenses subsidies, expenses loans and low-interest loans. In the 2022 fiscal year, Vonovia was granted low-interest loans of € 109.7 million (2021: € 130.4 million).

8 Changes in Accounting Policies, Estimates, Assumptions, Options and Judgments

Changes to Key Accounting Methods

As of January 1, 2022, the Group did not have to apply any interest rate benchmark reform.

Approach to the Interest Rate Benchmark Reform and Associated Risks

General Information

A fundamental reform of the main interest rate benchmarks is under way across the globe, including the replacement of some "Interbank Offered Rates" (IBORs) with alternative, almost risk-free interest rates (referred to as the "IBOR reform").

Group financial instruments are exposed to IBORs that are not being replaced or reformed as part of these market-wide initiatives. The biggest risk for the Group in connection with the IBOR as of December 31, 2022 was the link to the EURIBOR and STIBOR. As these are expected to remain valid until 2025, no changes had to be made to the financial instruments in the period leading up to December 31, 2022, meaning that no new interest rate benchmarks have to be reflected here.

The LIBOR administrator regulated and licensed by the UK Financial Conduct Authority (FCA), the ICE Benchmark Administration (IBA), announced in November 2020 that it had launched talks on ceasing the publication of certain USD LIBORs after June 2023. As of December 31, 2022, it remains unclear when the date on which publication of the USD LIBOR will cease will be announced. The Group does not hold any financial instruments that are subject to the USD LIBOR.

The IBOR risks to which the Group was exposed as of December 31, 2022 relate to corporate bonds linked to the EURIBOR. As explained above, the Group has not had to make any changes to the contractual terms for any risks resulting from a link to the EURIBOR.

The EURIBOR calculation method changed in the course of 2019.

In July 2019, the Belgian Financial Services and Markets Authority approved the EURIBOR in accordance with the European Union Benchmarks Regulation. This allows market participants to keep using the EURIBOR for both existing and new contracts, and the Group expects the EURIBOR to remain in force as the interest rate benchmark for the foreseeable future.

Derivatives

The Group holds interest rate swaps designated in hedging relationships to hedge cash flows for risk management purposes. The variable amounts of the interest rate swaps are linked to the EURIBOR.

Hedge Accounting

The Group's hedged items and hedging instruments are linked to the EURIBOR as of the reporting date. These reference rates are quoted daily and the IBOR cash flows are exchanged with the counterparties as usual.

Changes in Accounting Policies Due to New Standards and Interpretations

The following new or amended standards and interpretations became mandatory for the first time in the 2022 fiscal year. They did not have any material effects on Vonovia's consolidated financial statements.

> IFRS 1 “First-time Adoption of International Financial Reporting Standards”
> IFRS 3 “Business Combinations”
> IFRS 9 “Financial Instruments”
> IFRS 16 “Leases”
> IAS 16 “Property, Plant and Equipment”
> IAS 37 “Provisions, Contingent Liabilities and Contingent Assets”
> IAS 41 “Agriculture”

IFRS 16

Due to the rent concessions (deferrals, waivers) granted in a large number of countries as a result of the coronavirus pandemic, IFRS 16 was amended to provide companies with an exemption from assessing whether a COVID-19-related rent concession is a lease modification within the meaning of IFRS 16. Instead, they can opt to account for COVID-19-related rent concessions as if they were not lease modifications. This would spare them the work involved in evaluating the lease contracts to check for possible contractually defined rent concessions as well as the work involved in reassessing these contracts applying a new discount rate (which is always required for lease modifications). This relief was initially limited until June 30, 2021, but was extended until June 30, 2022, in April 2021.

No rent concessions were granted by the lessor within the Vonovia Group. This is due primarily to the Group’s encouraging and robust financial position, even in times dominated by the COVID-19 pandemic. As a result, the Group is not exercising this option as it is not relevant. These amendments to IFRS 16 do not have any material effects on the consolidated financial statements.

New Standards and Interpretations Not Yet Applied

Application of the following standards, interpretations and amendments to existing standards was not yet mandatory for the 2022 fiscal year. Vonovia also did not choose to apply them in advance. It is expected that the application of the new or amended standards and interpretations will have no material effects on Vonovia’s consolidated financial statements. Their application will be mandatory for the fiscal years following the dates stated in the following table:

Relevant New Standards, Interpretations and Amendments to Existing Standards and Interpretations		Effective Date for Vonovia
Amendments to Standards		
IFRS 9	“Financial Instruments”	Jan. 1, 2023
IFRS 16	“Leases”	Jan. 1, 2024*
IAS 1	“Presentation of Financial Statements”	Jan. 1, 2023
IAS 1	“Presentation of Financial Statements”	Jan. 1, 2024*
IAS 8	“Accounting Policies, Changes in Accounting Estimates and Errors”	Jan. 1, 2023
IAS 12	“Income Taxes”	Jan. 1, 2023
New Standards		
IFRS 17	“Insurance Contracts”	Jan. 1, 2023

* Not yet endorsed.

Estimates and Assumptions

To a certain extent, the preparation of the consolidated financial statements requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities as of the reporting date as well as reported amounts of income and expenses during the reporting year. The actual amounts may differ from the estimates as the business environment may develop differently than assumed. In this case, the assumptions and, where necessary, the carrying amounts of the assets or liabilities affected are prospectively adjusted accordingly. Specific estimates and assumptions relating to individual elements of financial statements are also explained in the corresponding notes to the consolidated financial statements.

Assumptions and estimates are reviewed on an ongoing basis and are based on experience and other factors, including expectations regarding future events that appear reasonable under the given circumstances.

The estimates and assumptions that may have a material risk of causing an adjustment to the carrying amounts of assets and liabilities mainly relate to the determination of the fair value of investment properties.

The best evidence of fair value of investment properties is current prices in an active market for comparable residential properties. As such information is not completely available, however, Vonovia uses standard valuation techniques.

A detailed description of the discounted cash flow (DCF) method used can be found in chapter → **[D28] Investment Properties**.

In accordance with IAS 40 in conjunction with IFRS 13, the respective market values of the investment properties owned by Vonovia are determined. Changes in certain market conditions such as prevailing rent levels and vacancy rates may affect the valuation of investment properties. Any changes in the fair value of the investment portfolio are recognized as part of the profit for the period in the income statement and can thus substantially affect Vonovia's results of operations.

The statement of financial liabilities at amortized cost using the effective interest method takes the expected contractual cash flows into account. In some cases, the agreements do not have any fixed maturity terms. As a result, the cash flows included in the valuation are subject to management assumptions in terms of amount and term.

As explained in chapter → **[D26] Intangible Assets**, Vonovia checks for goodwill impairments on an annual basis, or if there is any reason to suspect such impairments. The next step involves determining the recoverable amount of the group of cash-generating units (CGU). This corresponds to either the fair value less costs of sale or the value in use, whichever is higher. Determining the value in use includes adjustments and estimates regarding the forecast and discounting of the future cash flow. Although the management believes that the assumptions used to determine the recoverable amount are appropriate, any unforeseeable changes in these assumptions could result in impairment losses, with a detrimental impact on the net assets, financial position and results of operations.

When determining the volume of current and deferred taxes, the Group takes into account the effects of uncertain tax items and whether additional taxes and interest may be due. This assessment is made on the basis of estimates and assumptions about future events. New information may become available that causes the Group to change its discretionary decisions regarding the appropriateness of existing tax liabilities; such changes to tax liabilities will affect the tax expense in the period in which such a change is made.

Deferred tax assets are recognized to the extent that it can be demonstrated that it is probable that future taxable profits will be available against which the temporary difference can be utilized. Deferred tax assets are reviewed at each reporting date and are reduced to the extent that it is no longer probable that there will be sufficient future taxable profits to realize the tax benefit in the future.

In connection with the application of IFRS 15, it is assumed with respect to determining progress in relation to revenue recognition over time that the costs incurred appropriately reflect the progress as a share of total costs.

Additional estimates and assumptions mainly relate to the uniform definition of useful lives, the assumptions made on the value of land and buildings, the recognition and measurement of provisions as well as the realization of future tax benefits.

Climate risks have an impact on Vonovia's business model and strategy. They are addressed in particular by the climate path that the company has mapped out, but also by appropriate estimates and assumptions in key items of the company's net assets, financial position and results of operations. Climate risks can have a potentially negative impact and result in increased estimation uncertainties.

Physical climate risks refer to longer-term shifts in general climatic conditions. Climate events such as floods, earthquakes, extreme weather events, etc. could have an impact on our real estate portfolio and require specific crisis management measures. Climate transition risks describe the effects that can arise for companies due to the process of transformation towards a more sustainable economic system.

As part of its sustainability strategy, Vonovia has made a clear and explicit commitment to climate protection targets and a virtually carbon-neutral housing stock by 2045. Based on our current knowledge and expectations regarding future developments, this will not have any impact on Vonovia's balance sheet. This relates, among other things, to the fair values of investment properties, specific useful lives and the value of assets, as well as provisions for environmental risks, for which no significant need for adjustment emerges.

Options and Judgments

Options exercised and judgments made by Vonovia's management in the process of applying the entity's accounting policies that may have a significant effect on the amounts recognized in the consolidated financial statements include the following:

> The group of investments accounted for using the equity method is determined by assessing significant influence.
> Determining whether the acquisition of investment properties as part of a business combination constitutes the acquisition of a "business" or the acquisition of an individual asset or group of assets can involve discretionary judgments.
> Vonovia measures investment properties at fair value. If management had opted to use the acquisition costs model as permitted under IAS 40, the carrying amounts of the investment properties as well as the corresponding income and expense items in the income statement would differ significantly.
> The criteria for assessing in which category a financial asset is to be classified may involve discretionary judgments.
> Within the scope of revenue recognition in accordance with IFRS 15, discretionary decisions relating to the expected revenue, the total costs of a project and the degree of completion may be necessary. These have an impact on the amount and timing of revenue.
> When accounting for leases in accordance with IFRS 16, the assessment of the exercise or non-exercise of unilaterally granted termination or renewal options may involve discretionary judgment, particularly if there is no economic incentive for the exercise or non-exercise of options.
> The need to include information concerning the future in the valuation of expected defaults results in discretionary decisions regarding the impact that changes in economic factors will have on the expected defaults.
> The decision on how to define a group of cash-generating units to which goodwill is allocated may involve discretionary judgments.
> Allocating the goodwill to the group of individual cash-generating units may also involve discretionary judgments. The parameters used in the impairment test, such as the determination of undiscounted cash flows, the weighted average cost of capital and the growth rate, may also involve discretionary judgments. Due to a lack of any detailed definition of the term "operation" (IAS 36.86), the disposal of goodwill within the context of real estate sales may involve discretionary decisions.
> Due to a lack of any detailed definition of the term "a separate major line of business or geographical area of operations" (IFRS 5), a disposal group within the context of real estate sales may involve discretionary decisions.
> At the moment, there are no definitive provisions on how to reflect a mandatory acquisition of non-controlling interests following the acquisition of control as part of a voluntary public takeover offer. In general, the acquisition of shares as part of a public offer during the second offer period is based on exactly the same conditions as those that applied in the first offer period, and the two acquisitions are closely related in terms of content and timing. This means that, even if it is executed in two offer periods, the acquisition constitutes one and the same transaction (linked transaction). Following the completion of the later acquisition, the original purchase price allocation is to be adjusted with retroactive effect from the acquisition date, resulting in a change in the consideration transferred, the fair value of net assets transferred and, consequently, the resulting goodwill.

9 Subsequent Events

On March 7, 2023, Vonovia SE received information from the Bochum public prosecutor's office regarding investigations against current and former members on the basis of a search warrant issued by the Local Court of Bochum. According to the information provided, Vonovia SE or selected affiliated companies are suspected of having suffered damage due to fraud, breaches of trust in the form of anticompetitive agreements in connection with tenders and particularly serious cases of passive and active corruption in business transactions. The extent to which the actual damage has not yet been clarified with definitive effect. Measures have been taken to clarify the incidents in full. The auditing firm Deloitte has also been engaged to conduct an independent investigation.

Based on the information currently available, this does not result in any material impact on the net assets, financial position and results of operations of the Vonovia Group.

Section (B): Profit for the Period

The figures from the previous year are only comparable to a limited extent due to the acquisition of Deutsche Wohnen made in the previous year.

Accounting Policies

Revenue from property management includes income from the rental of investment properties and assets held for sale which is recognized, net of discounts, over the duration of the contracts when the remuneration is contractually fixed or can be reliably determined and collection of the related receivable is probable.

In Vonovia's financial statements, the corresponding income for all the services for **ancillary costs** performed by the end of the year is also recognized in the year in which the service is performed. This amount is recognized on a non-netted basis using the principal method, in particular due to Vonovia's business model, which provides for a large proportion of services relevant to ancillary costs being performed by Vonovia itself as Vonovia is considered by the tenant to be the primary party responsible for providing the service. For all services that it does not perform itself, Vonovia also bears an inventory risk due to the settlement method (based on rentable area), as is standard practice in the real estate sector.

Income from **real estate sales** is recognized as soon as the material risks and rewards of ownership have been transferred to the buyer and Vonovia has no substantial further obligations. As far as any remaining obligations are concerned, a provision is recognized for the probable risk.

Expenses are recognized when they arise or at the time they are incurred. Interest is recognized as income or expense in the period in which it is incurred using the effective interest method.

10 Revenue from Property Management

in € million	2021	2022
Rental income	2,571.9	3,168.1
Ancillary costs	893.1	1,556.5
Revenue from property letting	**3,465.0**	**4,724.6**
Other revenue from property management	158.9	427.2
	3,623.9	**5,151.8**

Other revenue from property management includes income of € 280.1 million (Q4 2021: € 68.8 million) from the nursing and assisted living business area.

11 Profit on the Disposal of Properties

in € million	2021	2022
Income from the disposal of properties	239.2	195.4
Carrying amount of properties sold	-161.6	-126.2
Profit from the disposal of investment properties	**77.6**	**69.2**
Income from the sale of assets held for sale	883.0	3,047.0
Retirement carrying amount of assets held for sale	-883.0	-3,045.8
Change in value from properties sold	87.4	68.0
Profit from the disposal of assets held for sale	**87.4**	**69.2**
	165.0	**138.4**

The fair value adjustment of residential properties held for sale, for which a purchase contract had been signed but for which transfer of title had not yet taken place as of December 31, 2022, led to a gain of € 68.0 million (2021: € 87.4 million).

The year-on-year increase in the profit on, and retirement carrying amount from, the disposal of assets held for sale is due primarily to the disposal of properties as part of what is known as the Berlin Deal in the first and third quarter of 2022 (see further information in chapter → **[D28] Investment Properties**).

12 Profit on Disposal of Real Estate Inventories

Accounting Policies

Revenue from disposal of real estate inventories is realized either over time or at a specific point in time as soon as the customer obtains control over the asset in question. If, upon conclusion of the certified purchase agreement, control within the meaning of IFRS 15.35 (c) passes to the customer before or during the construction phase, the revenue is to be recognized as of this point in time based on the degree of completion of the construction project. Disclosure of the contract assets that fall within the scope of IFRS 15 occurs on a net basis with the corresponding advance payments received under trade receivables.

Contractual balances with an expected term of less than one year are not adjusted to reflect the time value of money.

No separate agreements are reached, in the contracts on the sale of apartments as part of the development business, on extraordinary rights of return or rescission, meaning that such rights are based on the relevant legal provisions. The same applies to warranty commitments, which are not to be treated as a separate contractual component within the meaning of IFRS 15 as a result. Existing warranty claims are always accounted for in line with the provisions of IAS 37.

In accordance with IFRS 15.94, costs for the initiation of the contracts with customers are recognized as an expense as soon as they are incurred, as the depreciation period generally would not amount to more than a year. The costs relate primarily to brokerage commission.

In cases involving **revenue recognition over time, the percentage of completion/progress made has to be assessed.** Vonovia uses the cost-to-cost method, as an input-based procedure, for this purpose. The progress made is determined based on the ratio of the capitalized contract costs incurred up until the reporting date to the estimated total contract costs that can be capitalized.

Revenue from the disposal of real estate inventories amounting to € 588.4 million (2021: € 519.6 million) comprises € 407.6 million (2021: € 420.1 million) in period-related revenue from the disposal of real estate inventories together with € 180.8 million (2021: € 99.5 million) in time-related revenue from the disposal of real estate inventories. As of the reporting date, contract assets of € 169.2 million (2021: € 247.0 million) are recognized within trade receivables in connection with the period-related revenue recognition. As of the reporting date, this amount includes advance payments received of € 172.6 million (2021: € 236.2 million). The increase in revenue as against the previous year is due to the larger project volume overall, as well as to the transfer of benefits and encumbrances for a project in Berlin in connection with the sale to an individual investor (global exit).

A transaction price of € 93.3 million (2021: € 197.9 million) has been allocated to the remaining performance obligations that had not yet been satisfied (in full) at the end of the current reporting period. These amounts are expected to be recognized, affecting net income, within the next three fiscal years, with an amount of € 76.4 million attributable to 2023, an amount of € 14.8 million to 2024 and an amount of € 2.1 million to 2025.

13 Net Income from Fair Value Adjustment of Investment Properties

Investment properties are generally measured by the in-house valuation department according to the fair value model. The fair value for the nursing care properties and undeveloped land are calculated by independent experts using a DCF method and are adjusted, where appropriate, based on findings from market observation and transactions. Any gains or losses from a change in fair value are recognized in the income statement affecting net income.

The measurement of the investment properties led to a valuation loss of € -1,269.8 million in the 2022 fiscal year (2021: gain of € 7,393.8 million) (see → **[D28] Investment Properties**). This includes € 22.6 million (2021: € -12.1 million) for the measurement of right-of-use assets (IFRS 16).

The figure also includes the valuation result from buildings under construction (new construction/development to hold) that were completed during the reporting period and were moved to the Rental portfolio. A fair value measurement is performed for the first time when the properties are completed. This resulted in a valuation effect of € 90.8 million in the 2022 fiscal year (2021: € 83.9 million).

As a result of Management Board resolutions passed in the fourth quarter of 2022 to sell project developments that had originally been intended for the company's own portfolio, an impairment loss on capitalized costs in the amount of € 206.8 million, which is part of the net income from fair value adjustments of investment properties, was calculated prior to the transfer to real estate inventories.

In the valuation result for 2022, the effects of investing activities and the positive development of Vonovia's operating business were overshadowed by rising return expectations on the part of investors, which explains the negative performance overall.

14 Capitalized Internal Expenses

Capitalized internal expenses in the fiscal year amount to € 673.3 million (2021: € 662.6 million) and mainly relate to the expenses of the Group's own craftsmen's organization contained in the capitalized modernization costs as well as the management costs for major modernization projects.

15 Cost of Materials

in € million	2021	2022
Expenses for ancillary costs	898.1	1,579.5
Expenses for maintenance and modernization	635.9	729.4
Other cost of purchased goods and services	137.1	192.6
	1,671.1	**2,501.5**

16 Personnel Expenses

in € million	2021	2022
Wages and salaries	558.3	714.9
Social security, pensions and other employee benefits	124.0	148.9
	682.3	**863.8**

The personnel expenses include expenses for severance payments in the amount of € 11.5 million (2021: € 17.8 million), allocations to the provisions for pre-retirement part-time work arrangements in the amount of€ 3.3 million (2021: € 0.0 million) and expenses for the long-term incentive plan (LTIP) at € -1.1 million (2021: € 6.2 million) (see → **[E39] Provisions**).

In the fiscal year under review, employers' contributions to statutory pension insurance amounted to € 62.1 million (2021: € 49.2 million).

As of December 31, 2022, Vonovia had a workforce of 15,915 employees (December 31, 2021: 15,871). 6,154 employees were female as of December 31, 2022 (December 31, 2021: 6,349) and 9,761 were male (December 31, 2021: 9,522). The average figure for the year was 15,878 employees (2021: 13,351). Vonovia also employed 922 apprentices as of December 31, 2022 (December 31, 2021: 857).

17 Other Operating Income

in € million	2021	2022
Compensation paid by insurance companies	65.3	87.8
Reversal of provisions	45.2	25.6
Compensation for damages and cost reimbursements	16.3	15.8
Dunning and debt collection fees	5.3	4.3
Reversal of impairment losses	5.4	2.7
Miscellaneous	139.4	82.6
	276.9	**218.8**

The drop in miscellaneous other operating income results from the increase in the value, recognized in the previous year, of the Deutsche Wohnen shares purchased prior to September 30, 2021 in the amount of € 87.5 million.

18 Other Operating Expenses

in € million	2021	2022
Consultants' and auditors' fees	136.8	86.2
Vehicle and traveling costs	30.2	38.5
Advertising costs	26.6	33.1
Communication costs and work equipment	26.8	28.5
Rents, leases and ground rents	17.7	19.3
Administrative services	17.8	18.0
Non-capitalizable expenses from real estate development	8.7	13.2
Insured losses	9.8	10.5
Additions to provisions	20.0	7.8
Costs of sale associated with real estate inventories	7.3	4.8
Sales incidentals	10.9	4.0
Impairment losses	2.9	3.2
Legal and notary costs	2.2	2.4
Dunning and debt collection fees	2.6	1.1
Miscellaneous	68.6	126.9
	388.9	**397.5**

Miscellaneous includes, as the biggest item, expenses for process adjustments and standardization as part of the integration of Deutsche Wohnen in the amount of € 37.8 million (2021: € 0.0 million).

19 Interest Income

in € million	2021	2022
Income from non-current securities and non-current loans	13.1	50.1
Other interest and similar income	8.4	65.4
	21.5	**115.5**

The income from non-current securities and non-current loans relates primarily to income from loans extended to the QUARTERBACK Immobilien Group.

Other interest and similar income in the reporting year includes income of € 32.9 million from a partial buyback (€ 1,044.7 million) of eight bonds maturing in 2023 and 2024. In addition, secured financing in the amount of € 284.2 million was repaid pro rata and ahead of schedule in 2022, resulting in interest income of € 11.3 million. The item also includes € 4.8 million in income from the discounting of provisions (2021: € 0.4 million).

20 Interest Expenses

The interest expenses mainly relate to interest expense on financial liabilities measured at amortized cost.

in € million	2021	2022
Interest expense from non-derivative financial liabilities	409.5	570.5
Swaps (current interest expense for the period)	20.6	10.7
Effects from the valuation of non-derivative financial instruments	-43.3	-77.4
Effects from the valuation of swaps	-20.4	-152.5
Prepayment penalties and commitment interest	22.7	12.6
Interest accretion to provisions	10.2	11.7
Interest from leases	15.8	17.6
Other financial expenses	-3.5	-25.6
	411.6	**367.6**

The prepayment penalties include the fees for the unscheduled repayment of loans during the fixed interest period; in the previous year, this applied in particular to the sale of unencumbered portfolios to the State of Berlin (Berlin Deal). The current interest rate environment and the resulting positive fair values is having a significant impact resulting from the valuation of swaps.

A reconciliation of net interest to net interest to be classified in accordance with IFRS 9 is shown in the following table:

in € million	2021	2022
Interest income	21.5	115.5
Interest expense	-411.6	-367.6
Net interest	**-390.1**	**-252.1**
Less:		
Net interest from provisions for pensions in acc. with IAS 19	4.5	7.4
Net interest from other provisions in acc. with IAS 37	5.3	-0.5
Net interest from leases	15.8	17.6
Net interest to be classified	**-364.5**	**-227.6**

The net interest classified pursuant to IFRS 9 is as follows:

in € million	2021	2022
Financial assets measured at (amortized) cost	21.1	110.7
Derivatives measured at FV through P&L	-0.2	141.8
Financial liabilities measured at (amortized) cost	-385.4	-480.1
Classification of net interest	**-364.5**	**-227.6**

21 Other Financial Result

in € million	2021	2022
Income from other investments	27.7	21.2
Transaction costs	-119.2	-1.4
Purchase price liabilities from put options/rights to reimbursement	-40.6	-9.3
Miscellaneous other financial result	-5.0	-0.2
	-137.1	**10.3**

The income from investments includes financial income resulting from the collection of profits from the investment in AVW GmbH & Co. KG, Hamburg, in the amount of € 11.7 million (2021: € 10.5 million) for the previous fiscal year in each case.

It also comprises financial income from investments in other residential real estate companies in the amount of € 7.9 million (2021: € 15.7 million).

The transaction costs in the previous year mainly related to expenses in connection with the voluntary public takeover offers to the shareholders of Deutsche Wohnen SE, Berlin.

22 Income Taxes

Accounting Policies

Income taxes for the current and prior fiscal years are recognized as current income tax liabilities to the extent that they have not yet been paid.

Deferred tax assets and liabilities are recognized using the liability method under the temporary concept, providing for all temporary differences arising between the tax bases of assets and liabilities and their carrying amounts in the consolidated financial statements. Deferred tax assets are only recognized for temporary differences and on loss carryforwards to the extent that there are deferred tax liabilities that can be netted against them – regarding deferred tax assets on loss carryforwards taking the minimum taxation into account – or, based on the predictable profits in the foreseeable future, it can be verified that they will be realized.

Deferred tax assets and liabilities are not recognized where the temporary difference arises from initial recognition of goodwill in connection with a business combination or the initial recognition (other than a business combination) of other assets and liabilities in a transaction that neither affects taxable income nor net income.

The carrying amount of a deferred tax asset is reviewed at each reporting date. If necessary, the carrying amount of the deferred tax asset is reduced to the extent that it is no longer offset by deferred tax liabilities that can be netted against it or that it is no longer probable that sufficient taxable profit will be available in the future.

Deferred taxes are measured at the tax rates that apply, or are expected to apply, to the period when the tax asset is realized or the liability is settled based on the current legislation in the countries in question. As in 2021, the combined tax rate of corporate income tax and trade tax of 33.1% was used to calculate domestic deferred taxes for 2022. The corporate income tax rate for the companies based in Austria is 23.0% based on the expectation announced for 2024, while the rate for companies based in Sweden is 20.6%.

Deferred tax assets and liabilities are netted against each other only if Vonovia has a legally enforceable right to set off the recognized amounts, when the same tax authority is involved and when the realization period is the same. In accordance with the regulations of IAS 12 "Income Taxes," deferred tax assets and liabilities are not discounted.

in € million	2021	2022
Current income tax	102.1	203.6
Prior-year current income tax	19.2	-14.1
Deferred tax – temporary differences	2,523.6	-329.3
Deferred tax – unutilized loss carryforwards	6.6	76.5
	2,651.5	**-63.3**

The current tax expense is determined on the basis of the taxable income for the fiscal year. For the 2022 fiscal year, the combined tax rate of corporate income tax and solidarity surcharge for domestic companies is 15.8% (2021: 15.8%). Including trade tax at a rate of about 17.3% (2021: 17.3%), the combined domestic tax rate is 33.1% in 2022 (2021: 33.1%). The corporate income tax rate for the companies based in Austria is 25.0% (2021: 25.0%), while the rate for companies based in Sweden is 20.6% (2021:20.6%). The income generated by Vonovia Finance B.V. is subject to Dutch tax law; current taxes of € 2.4 million (2021: € 2.8 million) were incurred there. The other companies that hold properties and are based in the Netherlands have limited corporation tax liability in Germany. These companies, together with the other foreign companies, pay tax that is of a negligible amount from the Group's perspective in the countries in which they are domiciled.

For deductible temporary differences (excl. loss carryforwards) in the amount of € 88.2 million (December 31, 2021: € 44.4 million), no deferred corporate income taxes or deferred trade taxes were recognized, because they are not likely to be used in the future.

As of December 31, 2022, there were corporate income tax loss carryforwards amounting to € 4,549.9 million (December 31, 2021: € 4,756.3 million), as well as trade tax loss carryforwards amounting to € 2,850.2 million (December 31, 2021: € 2,992.0 million), for which deferred tax assets have been recognized to the extent that their realization is sufficiently probable. As of December 31, 2022, there were corporate income tax loss carryforwards abroad amounting to € 435.6 million (December 31, 2021: € 536.0 million), as well as trade tax loss carryforwards amounting to € 15.3 million (2021: € 17.5 million), for which deferred tax assets have been recognized to the extent that their realization is sufficiently probable. The drop in tax loss carryforwards resulted from current tax gains at individual companies and the associated utilization of the loss carryforwards.

No deferred taxes were recognized in the balance sheet for domestic and foreign corporate income tax loss carryforwards amounting to € 1,342.7 million (December 31, 2021: € 1,339.4 million). Of this amount, € 23.4 million arose for the first time in the 2022 fiscal year (2021: € 9.0 million). Under current tax law, these loss carryforwards are not subject to restrictions either with regard to time or the amount of the loss carryforward. The fact that no deferred tax assets were recognized on the new corporate income tax loss carryforwards results in a tax effect of € 3.7 million (2021: € 1.5 million). In addition, there are further trade tax loss carryforwards subject to no restrictions with regard to how they can be carried forward in the amount of € 624.4 million in total (December 31, 2021: € 606.0 million). These did not give rise to any deferred tax assets. Of this amount, € 22.2 million arose for the first time in the 2022 fiscal year (2021: € 9.8 million) and the resulting tax effect is € 3.7 million (2021: € 1.5 million).

The remeasurement of deferred tax assets on temporary differences and loss carryforwards from the previous year led to income amounting to € 8.2 million in the 2022 fiscal year (2021: expenses of € 82.5 million). The high prior-year value is mainly due to the remeasurement of the tax loss carryforward of two companies that were included in a tax group for income tax purposes in 2021.

Deferred taxes on interest carryforwards are recognized if the interest carryforward is likely to be able to be used in the future. Due to the Group's capital structure, no interest carryforwards are likely to be able to be used in the future. As a result, no deferred tax assets have been recognized on interest carryforwards in the amount of € 1,340.7 million (December 31, 2021: € 1,325.6 million). € 223.9 million of this amount arose for the first time in the reporting year (2021: € 259.3 million). The fact that no deferred tax assets were recognized on the new interest carryforward generated a tax effect of € 71.4 million in Germany (2021: € 83.3 million). In the 2022 fiscal year, however, the interest carryforwards could be used for deduction for the first time at four companies. The resulting tax income came to € 63.2 million. Sweden has had a regulation similar to the German interest threshold since 2019. As a result, no deferred tax assets have been recognized on interest carryforwards in the amount of € 144.7 million in Sweden (2021: € 119.3 million). Of this amount, € 32.7 million (2021: € 22.1 million) arose for the first time in the reporting year. The fact that no deferred taxes were recognized generated a tax effect of € 6.7 million in Sweden (2021: € 4.5 million).

A reconciliation between disclosed effective income taxes and expected tax expense, which is the product of the accounting profit for the period multiplied by the average tax rate applicable in Germany, is shown in the table below.

in € million	2021	2022
Earnings before tax	**5,482.4**	**-732.7**
Income tax rate in %	33.1	33.1
Expected tax expense	**1,814.7**	**-242.9**
Trade tax effects	-215.6	-1.6
Non-deductible operating expenses	70.2	149.6
Tax-free income	-59.5	-42.4
Change in the deferred tax assets on loss carryforwards and temporary differences	82.5	-8.2
New loss and interest carryforwards not recognized and utilization of interest carryforwards	90.8	22.3
Prior-year income tax and taxes on guaranteed dividends	-78.5	-224.6
Tax effect from goodwill impairment	1,120.1	316.3
Differing foreign tax rates	-186.3	-38.4
Other tax effects (net)	13.1	6.6
Effective income taxes	**2,651.5**	**-63.3**
Effective income tax rate in %	**48.4**	**8.6**

The deferred taxes refer to temporary differences in balance sheet items and unutilized loss carryforwards as follows:

in € million	Dec. 31, 2021	Dec. 31, 2022
Intangible assets	6.8	6.2
Investment properties	37.0	75.7
Inventories	234.5	142.0
Property, plant and equipment	41.3	42.3
Financial assets	6.8	6.0
Other assets	36.5	55.3
Provisions for pensions	118.9	65.4
Other provisions	44.5	45.3
Liabilities	293.3	242.4
Loss carryforwards	1,119.5	1,042.9
Deferred tax assets	**1,939.1**	**1,723.5**

in € million	Dec. 31, 2021	Dec. 31, 2022
Intangible assets	61.1	32.8
Investment properties	20,090.2	19,795.5
Inventories	7.7	61.1
Assets held for sale	71.6	34.9
Property, plant and equipment	49.3	48.1
Financial assets	13.2	5.1
Other assets	221.8	188.4
Provisions for pensions	0.5	2.9
Other provisions	79.0	78.0
Liabilities	18.8	49.5
Deferred tax liabilities	**20,613.2**	**20,296.3**
Excess deferred tax liabilities	**18,674.1**	**18,572.8**

Deferred tax assets and liabilities are netted against each other when the same company and the same tax authority are involved and the realization period is the same. As a result, the following deferred tax assets and liabilities are stated:

in € million	Dec. 31, 2021	Dec. 31, 2022
Deferred tax assets	19.8	39.6
Deferred tax liabilities	18,693.9	18,612.4
Excess deferred tax liabilities	**18,674.1**	**18,572.8**

The drop in deferred tax liabilities can be attributed primarily to investment properties.

The change in deferred taxes is as follows:

in € million	2021	2022
Excess deferred tax liabilities as of Jan. 1	10,943.2	18,674.1
Deferred tax expense in income statement	2,530.2	-252.8
Deferred tax due to first-time consolidation and deconsolidation	5,411.7	156.5
Change in deferred taxes recognized in other comprehensive income due to equity instruments measured at fair value	0.4	-0.6
Change in deferred taxes recognized in other comprehensive income on actuarial gains and losses from pensions and similar obligations	12.7	52.2
Change in deferred taxes recognized in other comprehensive income on derivative financial instruments	5.1	19.8
Deferred taxes recognized in equity on accrued capital procurement costs resulting from the issuance of a hybrid bond with an indefinite term	0.5	-
Deferred taxes recognized in the capital reserve on capital procure-ment costs of capital increases	-44.1	0.1
Currency translation differences	-28.5	-77.1
Disposal group share deal Berlin	-157.5	
Other	0.4	0.6
Excess deferred tax liabilities as of Dec. 31	**18,674.1**	**18,572.8**

No deferred tax liabilities are recognized for profits accumulated at subsidiaries of € 57,216.9 million (December 31, 2021: € 55,312.7 million), as these profits are to remain invested for an indefinite period or are not subject to taxation. In the event of distribution or disposal of the subsidiaries, 5% of the distributed amounts or the capital gains would be subject to German taxation so that there would normally be an additional tax obligation.

Section (C): Other Disclosures on the Results of Operations

23 Segment Reporting

Vonovia is an integrated residential real estate company with operations across Europe. The company's strategy is focused on sustainably increasing the value of the company. This is achieved by managing the company's own portfolio sustainably and with a view to enhancing its value, investing in existing residential properties in order to create value, building new residential buildings and selling individual apartments as well as by engaging in active portfolio management and offering property-related services. For the purposes of managing the company, we make a distinction between five segments: **Rental, Value-add, Recurring Sales, Development** and **Care**. Explanatory information on the changes in the segment structure are set out in → **[A2] Adjustment to Prior-year Figures**. We also report the **Other segment,**which is not relevant from a corporate management perspective, in our segment reporting. This includes the sale, only as and when the right opportunities present themselves, of entire buildings or land (Non Core/Other) that are likely to have below-average development potential in terms of rent growth in the medium term and are located in areas that can be described as peripheral compared with Vonovia's overall portfolio and in view of future acquisitions. Ancillary costs are also reported under "Other."

The **Rental** segment combines all of the business activities that are aimed at the value-enhancing management of our own residential real estate. It includes our property management activities in Germany, Austria and Sweden. The consolidation of our property management activities in Germany, Austria and Sweden to form one single reporting segment is based on the similarities that we see in the property management business in these three countries. This applies to the way in which services are provided and the individual service processes that form part of the property management business as well as to the customers in the residential rental market and the type of customer acquisition used. Overall, the residential rental market in all three countries is characterized by a shortage of housing and is regulated by statutory requirements, resulting in return expectations that are similar in the long term.

The **Value-add** segment bundles all of the housing-related services that we have expanded our core rental business to include. These services include both the maintenance and modernization work on our residential properties and services that are closely related to the rental business. We allocate the activities relating to the craftsmen's and residential environment organization, the condominium administration business, the cable TV business, metering services, energy supplies and our insurance services to the Value-add segment.

The **Recurring Sales** segment includes the regular and sustainable disposals of individual condominiums and single-family houses from our portfolio. The consolidation of our sales activities in Germany and Austria to form one single reporting segment is based on the similarities that we see in the property management business in these two countries. It does not include the sale of entire buildings or land (Non Core/Other). These properties are only sold as and when the right opportunities present themselves, meaning that the sales do not form part of the Recurring Sales segment. We report these opportunistic sales in the **Other** column of the segment report.

The **Development** segment combines cross-country development activities and includes the project development of new residential buildings. The consolidation of our development activities in Germany, Austria and Sweden to form one single reporting segment is based on the similarities that we see in the business in these three countries. The business covers the value chain starting with the purchase of land without any development plan/dedicated purpose and ending with the completion of new buildings and new construction measures on our own properties. These properties are either incorporated into our own portfolio or sold to third parties. The Development segment deals with projects in selected attractive locations. Project development work is currently focusing on Berlin, Hamburg and Vienna. The adjusted EBITDA of the Development segment includes the fair value step-up for properties that were completed in the reporting period and have been added to our own portfolio.

The **Care segment** includes all activities relating to the management of the Group's own nursing care businesses and the leasing of nursing care properties.

Planning and controlling systems ensure that resources are efficiently allocated and their successful use is monitored on a regular basis. Reporting to the chief decision-makers and thus the assessment of business performance as well as the allocation of resources are performed on the basis of this segmentation. Asset and liability items are not reported separately by segment. Internal reporting is based on the IFRS reporting standards in general.

The Management Board as chief decision-makers of Vonovia monitor the contribution made by the segments to the company's performance on the basis of the segment revenue as well as the Adjusted EBITDA.

The following table shows the segment information for the reporting period:

in € million	Rental	Value-add	Recurring Sales	Development	Care	Segments total	Other*	Consolidation*	Group
Jan. 1–Dec. 31, 2022									
Segment revenue	**3,163.4**	**1,272.0**	**543.4**	**998.0**	**280.1**	**6,256.9**	**4,283.3**	**-1,557.6**	**8,982.6**
thereof external revenue	3,163.4	119.6	543.4	564.1	280.1	4,670.6	4,283.3	28.7	8,982.6
thereof internal revenue		1,152.4		433.9		1,586.3		-1,586.3	
Carrying amount of assets sold			-471.1			-471.1	-2,700.9		
Revaluation from disposal of assets held for sale			79.5			79.5	40.8		
Expenses for maintenance	-443.6				-7.0	-450.6			
Cost of development to sell				-440.4		-440.4			
Cost of development to hold**				-340.6		-340.6		340.6	
Operating expenses	-486.3	-1,145.3	-16.7	-33.8	-188.5	-1,870.6	-6.5	1,128.4	
Ancillary costs							-1,579.5		
Adjusted EBITDA Total	**2,233.5**	**126.7**	**135.1**	**183.2**	**84.6**	**2,763.1**	**37.2**	**-88.6**	**2,711.7**
Non-recurring items									-127.5
Period adjustments from assets held for sale									-52.3
Income from investments/amortization in other real estate companies									7.9
Net income from fair value adjustments of investment properties									-1,269.8
Depreciation and amortization (incl. depreciation on financial assets)									-1,303.1
Net income from investments accounted for using the equity method									-436.6
Income from other investments									-21.2
Interest income									115.5
Interest expenses									-367.6
Other financial result									10.3
EBT									**-732.7**
Income taxes									**63.3**
Profit for the period									**-669.4**

* The revenue for the Rental, Value-add, Recurring Sales, Development and Care segments constitutes income that is regularly reported to the Management Board as the chief operating decision-maker and that reflects Vonovia's sustainable business. The revenue/costs in the "Other" and "Consolidation" columns are not part of the Management Board's segment management.
** Excluding capitalized interest on borrowed capital of € 2.5 million.

in € million	Rental	Value-add	Recurring Sales	Develop-ment	Care	Segments total	Other*	Consolida-tion*	Group
Jan. 1–Dec. 31, 2021									
Segment revenue	**2,568.5**	**1,176.3**	**491.2**	**911.8**	**68.8**	**5,216.6**	**1,538.2**	**-1,489.1**	**5,265.7**
thereof external revenue	2,568.5	67.7	491.2	507.7	68.8	3,703.9	1,538.2	23.6	5,265.7
thereof internal revenue		1,108.6		404.1		1,512.7	–	-1,512.7	
Carrying amount of assets sold			-421.9			-421.9	-622.7		
Revaluation from disposal of assets held for sale			66.4			66.4	14.9		
Expenses for maintenance	-377.7				-2.4	-380.1			
Cost of development to sell				-370.1		-370.1			
Cost of development to hold**				-319.2		-319.2		319.2	
Operating expenses***	-412.3	-1,022.5	-22.5	-37.1	-42.9	-1,537.3	-22.6	1,031.2	
Ancillary costs							-898.1		
Adjusted EBITDA Total* **	**1,778.5**	**153.8**	**113.2**	**185.4**	**23.5**	**2,254.4**	**9.7**	**-138.7**	**2,125.4**
Non-recurring items									-37.1
Period adjustments from assets held for sale									6.0
Income from investments in other real estate companies									15.7
Net income from fair value adjustments of investment properties									7,393.8
Depreciation and amortization									-3,872.6
Net income from investments accounted for using the equity method									15.7
Income from other investments									-27.7
Interest income									21.5
Interest expenses									-411.6
Other financial result									-137.1
EBT									**5,092.0**
Income taxes									**-2,651.5**
Profit for the period									**2,440.5**

* The revenue for the Rental, Value-add, Recurring Sales, Development and Care segments constitutes income that is regularly reported to the Management Board as the chief operating decision-maker and that reflects Vonovia's sustainable business. The revenue/costs in the "Other" and "Consolidation" columns are not part of the Management Board's segment management.
** Excluding capitalized interest on borrowed capital of € 0.9 million.
*** Prior-year figures adjusted to new adjusted EBITDA definition (excluding results from at-equity investments), adjustments to adjusted EBITDA Rental: € -14.9 million thereof formerly Deutsche Wohnen € -6.3 million, Adjusted EBITDA Other: € -0.8 million.

To show the development of operating performance and to ensure comparability with previous periods, we calculate Adjusted EBITDA for each of our segments: Rental, Value-add, Recurring Sales, Development and Care. The sum of these key figures produces the Group's Adjusted EBITDA Total.

The breakdown of the business figures of the Deutsche Wohnen segment that was reported in the previous year into the five segments that are now relevant is set out in greater detail in the Notes under → **[A2] Adjustment to Prior-year Figures**.

The adjustments made include items that are not related to the period, items that recur irregularly and items that are atypical for business operation. The non-recurring items include the expenses for pre-retirement part-time work arrangements and severance payments, the development of new fields of business and business processes, acquisition projects including integration costs, research and development and expenses for refinancing and equity increases (where not treated as capital procurement costs).

In the 2022 fiscal year, the **non-recurring items** eliminated in the Adjusted EBITDA Total came to € 127.5 million (2021: € 37.1 million). This was largely due to costs associated with the integration of Deutsche Wohnen. The following table gives a detailed list of the non-recurring items:

in € million	Jan. 1–Dec. 31, 2021	Jan. 1–Dec. 31, 2022
Transactions*	14.1	113.2
Personnel matters	1.6	-3.1
Business model optimization	24.2	12.2
Research and development	3.6	4.2
Refinancing and equity measures	-6.4	1.0
Total non-recurring items	**37.1**	**127.5**

* Including one-time expenses in connection with acquisitions, such as HR measures relating to the integration process and other follow-up costs. In 2022 mainly integration costs of €79.4 million and restructuring costs of €22.6 million. In 2021 costs for transactions were offset by income resulting from the valuation of shares in Deutsche Wohnen amounting to € 87.5 million.

The breakdown of non-Group revenue from contracts with customers (pursuant to IFRS 15.114f.) and its allocation to the segments referred to above is as follows:

in € million	Rental	Value-add	Recurring Sales	Development	Care	Other	Consolida-tion	Total
Jan. 1–Dec. 31, 2022								
Revenue from ancillary costs (IFRS 15)	–	–	–	–	–	1,334.9	–	1,334.9
Income from the disposal of real estate inventories	–	–	27.8	560.6	–	–	–	588.4
Other revenue from contracts with customers	–	118.4	–	–	280.1	–	28.6	427.1
Revenue from contracts with customers	**–**	**118.4**	**27.8**	**560.6**	**280.1**	**1,334.9**	**28.6**	**2,350.4**
thereof period-related	–	–	–	407.6			–	407.6
thereof time-related	–	118.4	27.8	153.0	280.1	1,334.9	28.6	1,942.8
Revenue from rental income (IFRS 16)	3,163.4	1.2	–	3.5		–	–	3,168.1
Revenue from ancillary costs (IFRS 16)*	–	–	–	–	–	221.6	–	221.6
Other revenue	**3,163.4**	**1.2**	**–**	**3.5**	**–**	**221.6**	**–**	**3,389.7**
Revenue	**3,163.4**	**119.6**	**27.8**	**564.1**	**280.1**	**1,556.5**	**28.6**	**5,740.1**
Jan. 1–Dec. 31, 2021								
Revenue from ancillary costs (IFRS 15)	–	–	–	–	–	749.5	–	749.5
Income from the disposal of real estate inventories	–	–	14.0	505.6	–	–	–	519.6
Other revenue from contracts with customers	–	66.4	–	–	68.8	–	23.6	158.8
Revenue from contracts with customers	**–**	**66.4**	**14.0**	**505.6**	**68.8**	**749.5**	**23.6**	**1,427.9**
thereof period-related	–	–	–	420.1	–		–	420.1
thereof time-related	–	66.4	14.0	85.5	68.8	749.5	23.6	1,007.8
Revenue from rental income (IFRS 16)	2,568.5	1.3	–	2.1		–	–	2,571.9
Revenue from ancillary costs (IFRS 16)*	–	–	–	–	–	143.7	–	143.7
Other revenue	**2,568.5**	**1.3**	**–**	**2.1**	**–**	**143.7**	**–**	**2,715.6**
Revenue	**2,568.5**	**67.7**	**14.0**	**507.7**	**68.8**	**893.2**	**23.6**	**4,143.5**

* Includes land tax and buildings insurance.

External revenue and non-current assets, excluding financial instruments, deferred taxes, post-employment benefits and rights under insurance contracts, are distributed among Vonovia's country of origin and other countries as follows. The revenue and the assets are allocated based on the registered office of the unit providing the service.

in € million	Revenue		Assets	
	Jan. 1–Dec. 31, 2021	Jan. 1–Dec. 31, 2022	Dec. 31, 2021	Dec. 31, 2022
Germany	3,353.1	4,901.4	87,100.6	84,885.3
Austria	427.0	474.4	3,382.7	3,581.6
Sweden	362.3	360.6	7,588.9	7,098.5
France	0.0	0.0	109.7	95.7
Other countries	1.1	3.7	387.9	97.2
Total	**4,143.5**	**5,740.1**	**98,569.8**	**95,758.3**

24 Earnings per Share

Accounting Policies

The basic **earnings per share** are calculated by dividing the profit for the period attributable to the shareholders by the weighted average number of ordinary shares in circulation during the reporting period. The diluted earnings per share are obtained by adjusting the profit for the period and the number of outstanding shares on the basis of the assumption that convertible instruments will be converted, options or warrants will be exercised or ordinary shares will be issued under certain conditions. Potential ordinary shares will only be included in the calculation if the conversion into ordinary shares would reduce the earnings per share.

	2021	2022
Profit for the period attributable to Vonovia shareholders (in € million)	2,251.5	-643.8
Weighted average number of shares	626,466,541	788,254,448
Earnings per share (basic and diluted) in €	**3.59**	**-0.82**

At the end of the reporting period, no diluting financial instruments were in circulation. The basic earnings per share correspond to the diluted earnings per share.

25 Management Board's Proposal for the Appropriation of Profit

The Management Board and the Supervisory Board propose to the Annual General Meeting that, of the profit of Vonovia SE for the 2022 fiscal year of € 700,000,000.00, an amount of € 676,472,497.45 on the 795,849,997 shares of the share capital as of December 31, 2022 (corresponding to € 0.85 per share) be paid as a dividend to the shareholders, and that the remaining amount of € 23,527,502.55 be carried forward to the new account or be used for other dividends on shares carrying dividend rights at the time of the Annual General Meeting and which go beyond those as of December 31, 2022.

As has been the case since the 2018 fiscal year, the dividend for the 2022 fiscal year, payable after the Annual General Meeting in May 2023, will again include the option of a non-cash dividend in shares, to the extent that the Management Board and the Supervisory Board consider this to be in the interests of the company and its shareholders.

Section (D): Assets

26 Intangible Assets

in € million	Concessions, industrial property rights, license and similar rights	Self-developed software	Customer relationships and non-competition clause	Trademark rights	Goodwill	Total
Cost						
As of Jan. 1, 2022*	143.5	8.1	57.5	152.6	9,372.1	9,733.8
Additions	12.9	2.9				15.8
Disposals	-20.0		-3.1			-23.1
Changes in value from currency translation		-0.1			-67.8	-67.9
Transfers	1.7					1.7
As of Dec. 31, 2022	138.1	10.9	54.4	152.6	9,304.3	9,660.3
Accumulated amortization						-
As of Jan. 1, 2022*	99.0	6.0	18.0	–	6,887.9	7,010.9
Amortization in reporting year	20.7	1.7	7.8	86.0		116.2
Impairment					954.3	954.3
Disposals	-13.0		-0.7			-13.7
Changes in value from currency translation					-67.8	-67.8
Transfers	0.9					0.9
As of Dec. 31, 2022	107.6	7.7	25.1	86.0	7,774.4	8,000.8
Carrying amounts						-
As of Dec. 31, 2022	30.5	3.2	29.3	66.6	1,529.9	1,659.5
Cost						
As of Jan. 1, 2021	107.7	7.1	13.8	66.6	4,616.8	4,812.0
Additions due to business combinations*	26.2	0.4	45.6	86.0	4,774.3	4,932.5
Additions	11.8	1.1	–	–	–	12.9
Disposals	-3.2	-0.4	-1.9	–	–	-5.5
Changes in value from currency translation	–	–	–	–	-19.0	-19.0
Transfers	1.0	-0.1	–	–	–	0.9
As of Dec. 31, 2021*	143.5	8.1	57.5	152.6	9,372.1	9,733.8
Accumulated amortization						-
As of Jan. 1, 2021	66.3	4.7	7.2	–	3,122.1	3,200.3
Additions due to business combinations	19.6	–	8.5	–	–	28.1
Amortization in reporting year	15.4	1.3	4.2	–	–	20.9
Impairment*	–	–	–	–	3,774.4	3,774.4
Disposals	-2.9	–	-1.9	–	–	-4.8
Changes in value from currency translation	–	–	–	–	-8.6	-8.6
Transfers	0.6	–	–	–	–	0.6
As of Dec. 31, 2021*	99.0	6.0	18.0	–	6,887.9	7,010.9
Carrying amounts						-
As of Dec. 31, 2021*	44.5	2.1	39.5	152.6	2,484.2	2,722.9

* Adjusted (see note [A2] Adjustment to Prior-year Figures).

Accounting Policies

Acquired other intangible assets are stated at amortized cost. **Internally generated other intangible assets** are stated at amortized cost provided that the requirements of IAS 38 for the capitalization of internally generated intangible assets are met. Acquired trademark rights that are identified have an indefinite useful life and are subject to regular impairment testing. All of Vonovia's miscellaneous other intangible assets have definite useful lives and are amortized on a straight-line basis over their estimated useful lives. Software and licenses are amortized on the basis of a useful life of three years.

In accordance with IAS 36 "Impairment of Assets," other intangible assets are tested for impairment whenever there is an indication of an impairment. Impairment testing is performed at least once a year. An impairment loss is recognized when an asset's recoverable amount is less than its carrying amount. If the recoverable amount cannot be determined for the individual asset, the impairment test is conducted on the cash-generating unit (CGU) to which the asset belongs. Impairment losses are recognized as expenses in the income statement affecting net income.

An impairment loss recognized for prior periods is reversed if there has been a change in the estimates used to determine the asset's (or the CGU's) recoverable amount since the last impairment loss was recognized. The carrying amount of the asset (or the CGU) is increased to the newly estimated recoverable amount. The carrying amount is limited to the amount that would have been determined if no impairment loss had been recognized in prior years for the asset (or the CGU).

Customer Relationships and Similar Values

The brand names "Pflegen & Wohnen Hamburg" and "Katharinenhof" were identified as material assets with indefinite useful lives in the context of the purchase price allocation for the Deutsche Wohnen Group and were recognized at a total value of € 86.0 million. In addition, customer relationships for these activities were identified and recognized as assets with definite useful lives of between five and six years in the amount of € 37.1 million. As part of the (ad hoc) impairment tests conducted in the second quarter of 2022, trademark rights in the Care segment in the amount of € 86.0 million were written off in full. Information on the approach to impairment testing can be found in the subchapter below entitled → **Goodwill**.

The "BUWOG" brand name, which had already been acquired in previous years, is still recognized with a value of € 66.6 million for the development business. There were no signs of impairment losses for this brand name or customer relationships.

Goodwill

Accounting Policies

Goodwill results from a business combination and is defined as the amount by which the total consideration for shares in a company or group of companies exceeds the pro rata net assets acquired. The net assets are the total of the identifiable assets acquired that are valued at fair value in accordance with IFRS 3 as well as the assumed liabilities and contingent liabilities.

Goodwill is not subject to amortization, but rather is subjected to impairment testing on an annual basis. It is also tested for impairment whenever events or circumstances indicating an impairment arise.

The impairment testing of goodwill is performed at the level of cash-generating units (CGUs) or a group of CGUs. A CGU is the smallest group of assets which generates cash inflows that are largely independent of the cash inflows generated by other assets or other groups of assets. Goodwill purchased as part of a business combination is allocated to the CGUs or groups of CGUs that are expected to produce benefits resulting from the synergy effects of the combination.

At Vonovia, each property meets the requirements for classification as a CGU as a general rule. As part of operational management, these properties are grouped first of all to form geographically structured business units and then to form regional business areas. Since the regional business areas are the lowest level within the company at which goodwill is monitored for internal management purposes, the impairment test is performed at business area level and, as a result, in accordance with IAS 36.80 for a group of CGUs. The acquired assets are allocated to the business areas based on the geographical location of the properties. A further group of CGUs for which goodwill is monitored for internal management purposes relates to the Value-add segment. The third group of CGUs, to which goodwill is allocated and for which goodwill is monitored for management purposes, relates to the Development segment. As a result of the acquisition of Deutsche Wohnen SE, the Care segment was added as a further CGU, which is also monitored for internal management purposes.

The group of CGUs to which goodwill has been allocated are tested for impairment on a regular basis. This involves comparing the recoverable amount with the carrying amount of the group of CGUs. The recoverable amount of the group of CGUs is either its value in use or fair value less costs of sale, whichever is higher. When calculating the value in use, the estimated future cash flows are discounted to their cash value. Discount rates before tax are used that reflect the current market assessment of the interest rate effect and the specific risks associated with the regional business areas and the Value-add, Development and Care segments.

If goodwill has been allocated to a group of CGUs and its carrying amount exceeds the recoverable amount, the goodwill is to be written down in the amount of the difference in the first instance. Any need for impairment in excess of this amount is distributed among the other assets in the group of CGUs in proportion to their carrying amount. The individual fair value less costs to sell, value in use or zero must not be undercut in this regard.

Impairment losses that have been realized as part of the valuation of goodwill are not reversed in the following years.

Groups of Cash-generating Units

in € million	Rental segment: Central area	Rental segment: Deutsche Wohnen	Value-add segment	Development segment	Care segment	Group
Goodwill as of Dec. 31, 2021*	21.4	896.9	1,391.7	138.2	36.0	2,484.2
Impairment	-21.4	-896.9	–	–	-36.0	-954.3
Goodwill as of Dec. 31, 2022	0.0	0.0	1,391.7	138.2	0.0	1,529.9
Trademark rights as of Dec. 31, 2021	–	–	–	66.6	86.0	152.6
Impairment	–	–	–	–	-86.0	-86.0
Trademark rights as of Dec. 31, 2022	–	–	–	66.6	0.0	66.6

* Adjusted (see note [A2] Adjustment to Prior-year Figures).

The carrying amount of goodwill came to € 1,529.9 million as of December 31, 2022. This means that goodwill has dropped by € 954.3 million compared with December 31, 2021. The change is due, first of all, to the impairment of € 918.3 million identified in the first quarter of 2022 as part of the (ad hoc) impairment test performed. Within the meaning of IAS 36, the triggering event related to further increases in the values of the real estate portfolio in the first quarter of the 2022 fiscal year in combination with the increased cost of capital of the Rental business areas in Germany.

Second, the change is due to the impairment identified in the second quarter of 2022 as part of the (ad hoc) impairment test performed. The increased cost of capital in the Care segment was classified as a triggering event within the meaning of IAS 36. The impairment test conducted as of June 30, 2022, resulted in the goodwill for the Care segment of € 36.0 million being written off in full. In addition, trademark rights in the Care segment classified as having an indefinite useful life in the amount of € 86.0 million were also written off in full. This led to an impairment of € 1,040.3 million in 2022 for goodwill and trademark rights.

The conclusion of the purchase price allocation in connection with the acquisition of the Deutsche Wohnen Group (see → **[A2] Adjustment to Prior-year Figures**) meant that goodwill had increased by € 108.0 million as against the provisional purchase price allocation. At the same time, the goodwill was finally allocated to the date of the first-time consolidation as of September 30, 2022.

As part of the provisional allocation of goodwill from the acquisition of Deutsche Wohnen, the acquired residential real estate was allocated to the existing business areas in the Rental segment. Goodwill was provisionally allocated to these CGUs.

As part of the final allocation, the CGUs were restructured, as part of the final breakdown of the expected synergies, to produce an independent CGU with Deutsche Wohnen's real estate portfolio. The final allocation of goodwill is accordingly made to the business areas in the Rental segment (North, East, South, West and Central) and to the new CGU with Deutsche Wohnen's real estate in the amount of € 1,342.8 million. In addition, the final allocation of goodwill was made to the Value-add and nursing and assisted living CGUs.

Overall, both the preliminary and the final allocation of goodwill to the business areas of the Rental, Value-add and Care segments were performed based on the two indicators that reflect the synergy effects expected to be generated as a result of the business combination: "direct planned synergies" and "fair values."

As a result of the final purchase price allocation, the impairment tests for the reporting dates December 31, 2021, March 31, 2022, and June 30, 2022, were then performed again. This resulted in an impairment loss that was € 390.4 million higher as of December 31, 2021, an impairment loss that was € 164.3 million lower as of March 31, 2022, and an impairment loss that was € 0.8 million higher as of June 30, 2022.

In accordance with IAS 36.19, first the value in use was calculated based on the Management Board-approved detailed plan with a planning period of five years. This was derived from the five-year plan at Group level approved by the Management Board and the Supervisory Board. With the exception of the WACC, the assumptions used to calculate the value in use during the year match the assumptions used for the purposes of the impairment test at the end of 2021. With regard to the regional business areas of the Rental segment, the main drivers behind the results of the five-year plan are the increase in gross rental income and the planned vacancy rate.

The growth rate for the cash-generating units of the Rental segment and the Deutsche Wohnen Rental business area was calculated regionally on the basis of in-place rents and limited to 1%. The growth rate for the Care segment was also restricted to 1%. The main parameters for calculating the value in use are the sustainable rate of increase, the weighted average cost of capital (WACC) and the expected cash flows. In the Development segment, a further normalized planning year was added to the five-year plan to reflect a "steady state."

The growth rate for the CGUs of the Rental segment in Germany was limited to 1%. With regard to the regional business areas of the Rental segment, the main drivers behind the results of the five-year plan are the increase in gross rental income by an average of 2.5% every year as well as the planned vacancy rate of 2.5% at the end of the detailed planning period. The average gross rental increase within the five-year plan is 3.1% with an assumed vacancy rate of 2% at the end of the detailed planning period.

A constant growth rate of 1.0% was assumed for the Value-add, Development and Care CGUs.

Parameters for WACC Calculation for the Rental Segment

	Dec. 31, 2021	Mar. 31, 2022
Risk-free interest rate in %	0.08	0.40
Market risk premium in %	7.75	7.75
Levered beta	0.67	0.77
WACC (before tax) in %	4.00	4.30

Parameters for WACC Calculation for the Care Segment

	Dec. 31, 2021	June 30, 2022
Risk-free interest rate in %	0.08	1.24
Market risk premium in %	7.75	8.00
Levered beta	0.79	0.83
WACC (before tax) in %	4.30	6.00

For the purposes of the regular annual impairment test on goodwill as of December 31, 2022, the five-year plan for the Value-add and Development segments for the fiscal years from 2023 to 2027 was taken as a basis. This also forms part of the five-year plan for the Group as a whole as approved by the Management Board and acknowledged by the Supervisory Board. The plan is based on assessments regarding the development of the operating business areas in terms of future revenue, expenses and margins, and taking current market developments into account.

The regular annual impairment test was performed for the CGUs attributable to the Value-add and Development segments as of December 31, 2022. The value of the goodwill for the Value-add and Development CGUs and the trademark rights for the Development CGU was ultimately confirmed. Developments in the Value-add segment are characterized primarily by the extension of existing business areas (craftsmen's organization, multimedia, management of residential property, smart metering, energy service, etc.). On the other hand, there is an increase in operating expenses, taking into account the rate of inflation. The development in these values is in line with past experiences of business model development.

The Development segment is characterized by the construction of new buildings for Vonovia's own portfolio and the sale of properties to third parties. The main drivers of the results in the Development segment are the investment costs, the number of units sold and completed and the sales margin that can be generated.

The cash flows from the last detailed planning year were derived to calculate the perpetual annuity.

A constant growth rate of 1.0% was assumed for the Value-add and Development CGUs.

The weighted average cost of capital before tax is based on the risk-free interest rate calculated as a three-month average using the Svensson method, a market risk premium and a levered beta. The levered beta and the equity ratios used are determined on the basis of a peer comparison. In addition, a country-specific cost surcharge was also calculated for the Development segment. The main parameters are shown in the following table:

Parameters for WACC Calculation

	Value-add segment	Development segment
Dec. 31, 2022		
Risk-free interest rate in %	2.00	2.00
Market risk premium in %	7.00	7.00
Levered beta	0.76	0.92
Country-specific premium in %		0.12
WACC (before tax) in %	6.10	8.13
Dec. 31, 2021		
Risk-free interest rate in %	0.08	0.08
Market risk premium in %	7.75	7.75
Levered beta	0.68	0.91
Country-specific premium in %		0.08
WACC (before tax) in %	4.1	6.33

Impairment losses are recognized in the consolidated income statement under depreciation, amortization and impairment losses. The value in use for the Deutsche Wohnen Rental business area amounts to € 17.0 billion, with a value of € 0.3 billion for the central business area and € 1.3 billion for the Care segment.

A increase in the cost of capital would result in the following need for impairment:

	Value-add segment	Development segment
Goodwill and trading rights as of Dec. 31, 2022 in € million	1,391.7	204.8
Headroom in € million	830.6	62.0
Impairment starts with an increase of the WACC in percentage points	1.19	0.14
Full impairment in the event of an increase in the WACC in percentage points	10.18	0.67
Goodwill and trading rights as of Dec. 31, 2021 in € million*	1,391.7	204.8
Headroom in € million	3,082.9	1,045.0
Impairment starts with an increase of the WACC in percentage points	3.19	1.96
Full impairment in the event of an increase in the WACC in percentage points	21.65	2.61

* Adjusted (see chapter [A2] Adjustment to Prior-year Figures).

In the event of a drop in the planned sustainable rate of increase by 0.25 percentage points, there would only be impairment losses in the Development segment. Goodwill and trademark rights would only be written off in full if no growth were achieved.

In the Value-add and Development segments, a 0.25 percentage point drop in the sustainable rate of increase would not have resulted in any goodwill impairment in the previous year.

27 Property, Plant and Equipment

in € million	Owner-occupied properties	Technical equipment, plant and machinery	Other equipment, fixtures, furniture and office equipment	Total
Cost				
As of Jan. 1, 2022	273.3	83.7	590.9	947.9
Additions	4.1	23.1	113.0	140.2
Capitalized modernization costs	4.9	5.4	1.0	11.3
Disposals	-0.6	-2.6	-80.9	-84.1
Transfer from investment properties	31.5	–	–	31.5
Transfer to investment properties	-29.4	–	–	-29.4
Other transfers	–	61.7	-50.2	11.5
Revaluation from currency effects	–	-0.2	-0.6	-0.8
As of Dec. 31, 2022	283.8	171.1	573.2	1,028.1
Accumulated depreciation				
As of Jan. 1, 2022	21.9	39.5	232.4	293.8
Depreciation in reporting year	4.5	13.5	87.1	105.1
Impairment	1.6	–	–	1.6
Reversal of impairments	-0.2	–	–	-0.2
Disposals	-0.6	-0.9	-55.7	-57.2
Other transfers	–	14.7	-2.8	11.9
Revaluation from currency effects	0.1	-0.1	-0.3	-0.3
As of Dec. 31, 2022	27.3	66.7	260.7	354.7
Carrying amounts				
As of Dec. 31, 2022	256.5	104.4	312.5	673.4
Cost				
As of Jan. 1, 2021	201.3	65.2	284.2	550.7
Additions due to business combinations	64.6	9.8	251.7	326.1
Additions	3.1	13.9	105.6	122.6
Capitalized modernization costs	2.3	0.4	0.1	2.8
Disposals	-0.4	-5.5	-52.8	-58.7
Transfer from investment properties	12.6	–	–	12.6
Transfer to investment properties	-11.6	–	–	-11.6
Transfer to assets held for sale	-0.7	–	1.6	0.9
Other transfers	2.1	-0.2	0.7	2.6
Revaluation from currency effects	–	0.1	-0.2	-0.1
As of Dec. 31, 2021	273.3	83.7	590.9	947.9
Accumulated depreciation				
As of Jan. 1, 2021	10.0	37.0	116.1	163.1
Additions due to business combinations	7.6	–	97.7	105.3
Depreciation in reporting year	3.8	8.7	64.0	76.5
Impairment	0.5	–	–	0.5
Reversal of impairments	-0.4	–	–	-0.4
Disposals	-0.4	-5.4	-48.6	-54.4
Transfer to assets held for sale	-0.1	–	1.8	1.7
Other transfers	0.9	-0.8	1.4	1.5
Revaluation from currency effects	–	0.0	–	–
As of Dec. 31, 2021	21.9	39.5	232.4	293.8
Carrying amounts				
As of Dec. 31, 2021	251.4	44.2	358.5	654.1

Accounting Policies

Items of property, plant and equipment are carried at amortized cost less accumulated depreciation and are depreciated over their respective estimated useful lives on a straight-line basis. In accordance with IAS 36 "Impairment of Assets," impairment tests are performed whenever there is an indication of an impairment.

Subsequent costs of replacing part of an item of property, plant and equipment are capitalized provided it is probable that future economic benefits associated with the item will flow to Vonovia and the cost can be estimated reliably.

The properties used by the company itself are subject to depreciation over a term of 50 years, with fixtures, furniture and office equipment subject to depreciation over a period of 3–13 years and technical equipment, plant and machinery over a period of 5–20 years.

Carrying amounts of owner-occupied properties amounting to € 79.5 million as of December 31, 2022 (Dec. 31, 2021: € 79.9 million) are encumbered with land charges in favor of various lenders.

28 Investment Properties

in € million	
As of Jan. 1, 2022	**94,100.1**
Additions	961.8
Capitalized modernization costs	1,248.9
Grants received	-12.1
Transfer to property, plant and equipment	-31.5
Transfer from property, plant and equipment	29.4
Transfer to down payments made	-417.2
Transfer from down payments made	105.0
Transfer from real estate inventories	143.3
Transfer to real estate inventories	-1,450.1
Transfer to assets held for sale	-416.5
Other transfers	-8.4
Disposals	-153.7
Net income from fair value adjustments of investment properties	-1,269.8
Revaluation of assets held for sale	68.0
Revaluation from currency effects	-597.1
As of Dec. 31, 2022	**92,300.1**
As of Jan. 1, 2021	**58,071.8**
Additions due to business combinations	28,181.7
Additions	792.3
Capitalized modernization costs	1,124.2
Grants received	-2.7
Transfer to property, plant and equipment	-12.6
Transfer from property, plant and equipment	11.6
Transfer from real estate inventories	20.0
Transfer to real estate inventories	-27.4
Transfer to assets held for sale	-1,221.6
Other transfers	-0.5
Disposals	-167.7
Net income from fair value adjustments of investment properties	7,393.8
Revaluation of assets held for sale	87.4
Revaluation from currency effects	-150.2
As of Dec. 31, 2021	**94,100.1**

Accounting Policies

When Vonovia acquires properties, whether through a business combination or as part of a separate transaction, the intended use determines whether such properties are classified as investment properties or as owner-occupied properties.

Investment properties are properties that are held for the purpose of earning rental income or for capital appreciation or both and are not owner-occupied or held for sale in the ordinary course of business. Investment properties include undeveloped land, land and land rights including buildings and land with hereditary building rights of third parties. Investment properties also include right-of-use assets from rented, developed and undeveloped land (hereditary building rights) and from rented residential and commercial properties (interim leasing) within the meaning of IFRS 16 that are classified as investment properties.

Investment properties are initially measured at cost. Related transaction costs, such as fees for legal services or real estate transfer taxes, are included in the initial measurement. If properties are purchased as part of a business combination and if the transaction relates to a "business," then IFRS 3 applies as far as recognition is concerned. Transaction costs are recognized as an expense.

Following initial recognition, investment properties are measured at fair value. Any change therein is recognized as affecting net income in the income statement. If, during the land or project development phase, reliable measurement at fair value is not possible due to the lack of marketability and the lack of comparable transactions, recognition is at acquisition cost. In such cases, the cost model is continued until a reliable measurement can be carried out, but at the latest until the property in question is completed.

Investment properties are transferred to property, plant and equipment when there is a change in use evidenced by the commencement of owner-occupation. The properties' deemed cost for subsequent measurement corresponds to the fair value at the date of reclassification.

The values as of December 31, 2022 include assets of € 663.7 million (December 31, 2021: € 2,180.9 million) that are measured at cost, as their fair value cannot be reliably calculated on a continuing basis. These relate to project developments for the company's own portfolio, assets under construction, pre-construction expenses and land without buildings that may be intended for future sale. In particular in the current market environment, which is dominated by inflation and supply chain problems and, as a result, by very volatile costs for construction materials, as well as by a marked increase in interest rates and insignificant transaction activity, neither construction costs nor income from project developments can be reliably calculated on a continuing basis. Due to the existing inherent risks during the construction phase, development projects are generally recognized at cost until they are completed. In the context of business combinations, no assets measured at cost (December 31, 2021: € 1,439.3 million) were added in the 2022 fiscal year. There were further additions of € 386.7 million (December 31, 2021: € 372.4 million). In the fiscal year under review, impairment tests on the capitalized cost of project developments were performed throughout the year due to the tense market situation. These resulted in impairment losses of € 450.4 million which are part of net income from fair value adjustments of investment properties. As a result of resolutions passed by the Management Board in the fourth quarter of 2022 to now sell project developments that were originally intended for Vonovia's own portfolio, € 1,450.1 million was reclassified to real estate inventories in the 2022 fiscal year.

The additions in the 2022 reporting year include € 607.1 million (2021: € 639.9 million) in production costs for new construction activities.

The total amount reported for investment properties as of December 31, 2022, includes right-of-use assets from recognized hereditary building rights (including right-of-use assets arising from leased and sublet care homes since first-time consolidation of Deutsche Wohnen as of September 30, 2021) in the amount of € 2,019.8 million (December 31, 2021: € 1,689.1 million). In this respect, we also refer to chapter → **[E43] Leases**.

The majority of € 2,016.8 million is attributable to right-of-use assets from hereditary building rights (December 31, 2021: € 1,685.3 million). This includes right-of-use assets amounting to € 97.3 million (December 31, 2021: € 80.9 million) relating to the Spree-Bellevue (Spree-Schlange) property in Berlin, which comprises the leasehold land and the rented properties. The properties have been leased from the fund company DB Immobilienfonds 11 Spree-Schlange von Quistorp KG until 2044. The lease agreement includes an obligation to pay compensation for loss of use as agreed by contract. At the end of 2028, each fund subscriber is entitled to return his share to the property fund at a fixed redemption price. If all of the fund investors make use of this option, Vonovia is obliged to acquire the properties at a fixed purchase price after deduction of borrowings. If more than 75% of the shares are returned in this way, Vonovia has a call option for the purchase of all fund shares.

For the investment properties encumbered with land charges in favor of various lenders, see chapter → **[E41] Non-derivative Financial Liabilities**.

Directly Attributable Operating Expenses

Rental income from investment properties amounted to € 3,168.1 million during the fiscal year (2021: € 2,571.9 million). Operating expenses directly relating to these properties amounted to € 433.3 million during the fiscal year (2021: € 317.6 million). These include expenses for maintenance, ancillary costs that cannot be passed on to the tenants, personnel expenses from the caretaker and craftsmen's organizations, and income from the capitalized internal expenses. The capitalized internal expenses relate to the work performed by the Group's own craftsmen's organization and the management costs for major modernization projects.

Long-term Leases

Vonovia as a lessor has concluded long-term leases on commercial properties. These are non-cancelable leases. The minimum future lease receipts from these leases are due as follows:

in € million	Dec. 31, 2021	Dec. 31, 2022
Total minimum lease payments	85.2	95.6
Due within 1 year	27.0	29.3
Due in 1 to 5 years	49.2	59.9
Due after 5 years	9.0	6.4

Fair Values

The value of the entire portfolio of residential properties was determined on the basis of the International Valuation Standard Committee's definition of market value. Portfolio premiums and discounts, which can be observed when portfolios are sold in market transactions, were not included. Nor were time restrictions in the marketing of individual properties. Vonovia determines fair value in accordance with the requirements of IAS 40 in conjunction with IFRS 13.

Vonovia, in principle, measures its portfolio on the basis of the discounted cash flow (DCF) method. Under the DCF methodology, the expected future income and costs of a property are forecast over a detailed period of ten years and discounted to the date of valuation as the net present value. Due to the particular market situation in Austria and in order to reflect the extensive Austrian rent restrictions, a sales scenario involving the recurring sales of apartments is assumed for a subportfolio. In order to present these sales in the correct accounting period, the detailed period for the Austrian DCF model has been extended to 100 years.

The income in the DCF model mainly comprises expected rental income (current net rent excl. ancillary costs, current inclusive rent in Sweden, market rents as well as their development) taking vacancy losses and also sales revenues for an Austrian subportfolio into account. The expected rental income is derived for each location from the latest rent indices and rent tables (including Value AG, IVD, the Austrian Economic Chambers [WKÖ]) as well as from studies on spatial prosperity (Federal Institute for Research on Building, Urban Affairs and Spatial Development [BBSR], Prognos, Value AG, the Federal Statistical Office of Germany, the Austrian statistical office, Statistik Austria, etc.). In Sweden, rents and rent increases are defined as part of negotiations with the Swedish tenants' association ("Hyresgästföreningen") and are reflected accordingly in the valuation model. The expected sales revenues in Austria are derived from historical sale prices as well as market data (e.g., WKÖ, EHL).

On the cost side, maintenance expenses and administrative costs are taken into account. In Germany, these are taken into account in accordance with the II. Berechnungsverordnung. The II. Berechnungsverordnung (BV) is the German Regulation on Calculations for Residential Buildings in accordance with the Second Housing Construction Law, which stipulates how economic viability calculations for homes are to be performed. These cost approaches are also transferred to the Austrian market. Further cost items are, for example, ground rents, non-allocable ancillary costs, rent losses and, in Austria, selling costs. In the Swedish valuation model, further expenses to be borne by the owner are also taken into account in the DCF model due to the inclusive rents that are a special feature of this market. All cost items are inflated in the reporting period. Modernization measures carried out in the housing stocks are factored in by decreasing the current maintenance expenses and adjusting market rents.

On this basis, the forecast cash flows are calculated on an annual basis and discounted to the date of valuation as the net present value. Furthermore, the terminal value of the property at the end of the ten-year period is determined using the expected stabilized net operating income and again discounted to the date of valuation as the net present value. The discount rate applied reflects the market situation, location, type of property, special property features (e.g., hereditary building rights, rent restrictions), the yield expectations of a potential investor and the risk associated with the forecast future cash flows of the property. The derived market value is therefore the result of this net present value and includes standard market transaction costs such as real estate transfer taxes, agent and notary costs. As the detailed period in the Austrian DCF model has been extended to 100 years in order to present the sales scenarios in the correct accounting period, no terminal value is applied here.

The commercial properties in the portfolio are mainly small commercial units for the supply of the local residential environment. Different cost approaches are used to those for residential properties, and discount rates were adjusted to reflect the market specifics.

The valuation is, in principle, performed on the basis of homogeneous valuation units. These meet the criteria of economically cohesive and comparable land and buildings. They include:

> Geographical location (identity of the microlocation and geographical proximity)
> Comparable types of use, building class, construction year class and condition of property
> Same property features such as rent restrictions, hereditary building rights and full or part ownership

The Vonovia portfolio also contains project developments, existing areas with construction potential and land areas with inheritable building rights granted, as well as nursing care facilities. Project developments for subsequent management within its own portfolio are measured using the cost approach until the construction work is complete – subject to a review of the values applied if triggering events occur. Once the construction work is complete, measurement is at fair value using the DCF procedure described above. Existing areas with construction potential are valued using a comparable method on the basis of the local standard land value evaluated. Deductions are taken into account in particular for the readiness for construction and potential use as well as for likelihood of development and the development situation. Inheritable building rights granted are valued in the same way as the property portfolio using a DCF method. The input parameters here are the duration and amount of ground rent and the value of the land. The right-of-use assets from leasehold contracts are recognized at their fair value. The fair value of the leasehold contracts corresponds to the present value of the standard market leasehold fee payments up until the end of the term of the hereditary building right in question. These are calculated based on the current amount of the ground rent. In order to calculate the present value, the leasehold fee payments are discounted using a property-specific interest rate.

Vonovia determined the fair values of its real estate portfolio in Germany, Sweden and Austria as of December 31, 2022, in its in-house valuation department on the basis of the methodology described above.

In addition to the internal valuation, Vonovia's real estate portfolio was also valued by the independent property appraisers CBRE GmbH, Jones Lang LaSalle SE and Savills Sweden AB. The market value resulting from the external report is consistent with the internal valuation result.

The fair value for the nursing care properties was calculated by the independent expert W&P Immobilienberatung GmbH using a DCF method and are adjusted, where appropriate, based on findings from market observation and transactions.

The contractually fixed remuneration for the valuation report is not linked to the valuation results.

The real estate portfolio of Vonovia is to be found in the items investment properties, property, plant and equipment (owner-occupied properties), real estate inventories, contract assets and assets held for sale. The fair value of the portfolio comprising residential buildings, commercial properties, garages and parking spaces, project developments and undeveloped land, inheritable building rights granted and nursing care facilities was € 94,694.5 million as of December 31, 2022 (December 31, 2021: € 97,845.3 million). This corresponds to a net initial yield for the real estate portfolio of 2.5% (total portfolio including Sweden and Austria; December 31, 2021: 2.5%). For Germany (Vonovia stand-alone and Deutsche Wohnen together), this results in an in-place rent multiplier of 29.2 (December 31, 2021: 29.7) and a fair value per m^2 of € 2,590 (December 31, 2021: € 2,547). The in-place rent multiplier and fair value for the Austrian portfolio come to 25.8 and € 1,742 per m^2 (December 31, 2021: 26.5 and € 1,674 per m^2), with the figures for Sweden coming to 20.1 and € 2,248 per m^2 (December 31, 2021: 20.6 and € 2,475 per m^2).

The material valuation parameters for the investment properties (Level 3) in the real estate portfolio are as follows as of December 31, 2022, broken down by regional markets:

Regional market	Valuation results* Fair value (in € million)	thereof investment properties (in € million)	thereof other asset classes (in € million)
Dec. 31, 2022			
Berlin	27,793.9	27,424.6	369.3
Rhine Main area	7,545.4	7,452.2	93.2
Dresden	5,769.2	5,730.4	38.9
Rhineland	5,631.7	5,624.8	6.9
Southern Ruhr area	5,509.3	5,499.1	10.1
Hamburg	3,653.7	3,648.7	5.0
Hanover	3,211.9	3,209.0	2.9
Kiel	3,137.3	3,132.0	5.3
Munich	3,062.1	3,047.6	14.5
Stuttgart	2,514.2	2,509.5	4.7
Northern Ruhr area	2,227.0	2,219.7	7.4
Leipzig	2,161.3	2,160.0	1.3
Bremen	1,559.5	1,557.0	2.5
Westphalia	1,235.8	1,234.5	1.3
Freiburg	802.1	800.5	1.6
Other strategic locations	3,750.2	3,740.5	9.7
Total strategic locations	79,564.5	78,990.1	574.4
Non-strategic locations	504.6	496.5	8.1
Vonovia Germany	**80,069.1**	**79,486.6**	**582.5**
Vonovia Sweden**	6,876.3	6,876.3	–
Vonovia Austria**	3,026.5	2,972.0	54.6

* Fair value of the developed land excl. € 4,722.5 million for development, undeveloped land, inheritable building rights granted and other; € 2,502.2 million of this amount relates to investment properties. The investment properties balance sheet item also includes the present value in connection with payments for right-of-use assets in the amount of € 463.0 million.
** The valuation methods used for the portfolio in Austria and Sweden use and provide valuation parameters that are only partially comparable.

Valuation parameters investment properties (Level 3)						
Management costs residential (€ per residential unit p. a.)	Maintenance costs total residential (€/m² p. a.)	Market rent residential (€/m² per month)	Market rent increase residential	Stabilized vacancy rate residential	Discount rate total	Capitalized interest rate total
287	15.92	8.24	2.0%	1.0%	4.1%	2.3%
311	15.74	9.92	1.9%	1.1%	4.4%	2.8%
276	15.29	6.93	1.8%	2.3%	4.3%	2.9%
308	15.21	8.89	1.8%	1.7%	4.5%	3.0%
305	13.74	7.43	1.6%	2.6%	4.2%	3.0%
297	15.45	8.95	1.7%	1.2%	4.2%	2.7%
296	15.27	7.87	1.7%	2.0%	4.4%	3.1%
299	15.92	8.06	1.7%	1.7%	4.5%	3.1%
298	15.63	12.45	2.0%	0.6%	4.4%	2.7%
312	16.03	9.67	1.9%	1.2%	4.6%	3.0%
307	14.35	6.73	1.3%	3.3%	4.4%	3.6%
292	16.26	7.07	1.7%	3.1%	4.1%	2.7%
304	14.38	7.42	1.8%	2.0%	4.3%	2.9%
303	14.31	7.72	1.7%	2.0%	4.5%	3.2%
309	16.58	9.03	1.7%	0.9%	4.2%	2.7%
303	15.44	7.91	1.7%	2.5%	4.5%	3.2%
296	**15.39**	**8.22**	**1.8%**	**1.7%**	**4.3%**	**2.7%**
323	16.11	7.64	1.6%	2.6%	5.0%	3.6%
296	**15.40**	**8.21**	**1.8%**	**1.7%**	**4.3%**	**2.7%**
379	12.83	9.78	2.1%	1.5%	5.6%	3.6%
n. a.	21.34	5.88	1.7%	2.6%	5.5%	n. a.

Regional market**	Valuation results* Fair value (in € million)	thereof investment properties (in € million)	thereof other asset classes (in € million)
Dec. 31, 2021			
Berlin	30,191.7	27,774.1	2,417.5
Rhine Main area	7,614.2	7,580.9	33.2
Dresden	5,847.5	5,839.6	7.9
Rhineland	5,734.1	5,557.1	177.0
Southern Ruhr area	5,267.0	5,247.9	19.1
Hamburg	3,611.8	3,604.1	7.8
Hanover	3,147.0	3,126.5	20.5
Kiel	3,005.5	2,998.8	6.7
Munich	2,966.1	2,951.9	14.2
Stuttgart	2,551.9	2,546.6	5.3
Northern Ruhr area	2,179.9	2,164.8	15.1
Leipzig	2,161.0	2,150.7	10.3
Bremen	1,484.2	1,481.3	2.9
Westphalia	1,173.3	1,170.4	3.0
Freiburg	788.7	786.3	2.4
Other strategic locations	3,928.6	3,919.0	9.6
Total strategic locations	**81,652.6**	**78,900.0**	**2,752.6**
Non-strategic locations	440.6	423.8	16.8
Vonovia Germany	**82,093.2**	**79,323.7**	**2,769.4**
Vonovia Sweden***	7,386.0	7,386.0	-
Vonovia Austria***	2,932.5	2,872.8	59.7

* Fair value of the developed land excl. € 5,433.6 million for development, undeveloped land, inheritable building rights granted and other; € 4,141.1 million of this amount relates to investment properties. The investment properties balance sheet item also includes the present value in connection with payments for right-of-use assets in the amount of € 376.5 million.
** In this table, the portfolio of Deutsche Wohnen, which was disclosed as a separate line in the 2021 Annual Report, has been transferred to the respective regional markets.
*** The valuation methods used for the portfolio in Austria and Sweden use and provide valuation parameters that are only partially comparable.

The inflation rate applied to the valuation procedure comes to 2.1%. For the Austrian portfolio, a sales strategy with an average selling price of € 2,417 per m² was assumed for 49.5% of the portfolio.

Net income from the valuation of investment properties amounted to € -1,269.8 million in the 2022 fiscal year (December 31, 2021: € 7,393.8 million). The main input factors used for the valuation of nursing care properties are average market rent (2022: € 9.37/sqm; 2021: € 9.04/sqm), discount rates (2022: 4.8%; 2021: 4.4%) and maintenance costs (2022: € 12.32/sqm; 2021: € 11.60/sqm). A 5% reduction in the average market rent results in a -5% adjustment to the carrying amount of the nursing care facilities (previous year: -5%), an increase in the discount rate by 0.1pp produces a value adjustment of -2% (previous year: -2%) and a 10% increase in maintenance costs results in a value adjustment of -1% (previous year: -1%).

Sensitivity Analyses

The sensitivity analyses performed on Vonovia's real estate portfolio show the impact of value drivers dependent upon market developments. Those influenced in particular are the market rents and their development, the amount of recognized administrative and maintenance expenses, cost increases, the vacancy rate and interest rates. The effect of possible fluctuations in these parameters is shown separately for each parameter according to regional market in the following.

Interactions between the parameters are possible but cannot be quantified owing to the complexity of the interrelationships. The vacancy and market rent parameters, for example, can influence each other. If rising demand for housing is not met by adequate supply developments, then this can result in lower vacancy rates and, at the same time, rising market rents. If, however, the rising demand is compensated for by a high vacancy reserve in the location in

Valuation parameters investment properties (Level 3)						
Management costs residential (€ per residential unit p. a.)	Maintenance costs total residential (€/m² p. a.)	Market rent residential (€/m² per month)	Market rent increase residential	Stabilized vacancy rate residential	Discount rate total	Capitalized interest rate total
289	13.68	9.04	1.4%	1.0%	3.9%	2.5%
289	14.10	10.08	1.7%	1.6%	4.4%	2.8%
258	13.75	6.94	1.6%	2.3%	4.4%	3.0%
285	13.83	8.71	1.6%	1.9%	4.4%	3.0%
279	12.78	7.27	1.5%	2.6%	4.3%	3.0%
271	14.49	8.78	1.6%	1.3%	4.1%	2.7%
280	14.03	7.99	1.6%	2.0%	4.6%	3.2%
273	14.93	7.75	1.6%	1.6%	4.5%	3.0%
277	14.04	12.11	1.8%	0.7%	4.4%	2.7%
286	14.73	9.50	1.8%	1.2%	4.5%	2.9%
281	13.29	6.56	1.1%	3.3%	4.6%	3.7%
277	14.15	7.01	1.5%	2.8%	4.3%	3.0%
278	13.32	7.21	1.6%	2.1%	4.4%	3.0%
277	13.32	7.48	1.5%	2.0%	4.6%	3.3%
282	15.45	8.84	1.6%	0.9%	4.2%	2.7%
284	14.05	7.72	1.5%	2.2%	4.7%	3.3%
281	**13.81**	**8.37**	**1.5%**	**1.7%**	**4.2%**	**2.8%**
308	14.92	7.47	1.4%	2.9%	5.2%	3.9%
281	**13.82**	**8.36**	**1.5%**	**1.8%**	**4.3%**	**2.8%**
n. a.	n. a.	10.59	2.0%	0.8%	5.3%	3.2%
n. a.	19.7	5.80	1.7%	2.4%	5.2%	n. a.

question, then the market rent level does not necessarily change.

Changes in the demand for housing can also impact the risk associated with the expected cash flows, which is then reflected in adjusted discounting and capitalized interest rates. The effects do not, however, necessarily have to have a favorable impact on each other, for example, if the changes in the demand for residential real estate are overshadowed by macroeconomic developments.

In addition, factors other than demand can have an impact on these parameters. Examples include changes in the portfolio, in seller and buyer behavior, political decisions and developments on the capital market. Due to the effect that changes in inflation will have on future rent increases in Sweden, it has been assumed, for the purposes of calculating sensitivities, that one-third of any change in inflation will spill over into rental growth.

The table below shows the percentage impact on values in the event of a change in the valuation parameters. The absolute impact on values is calculated by multiplying the percentage impact by the fair value of the investment properties.

	Change in value as a % under varying parameters		
	Management costs residential	Maintenance costs residential	Cost increase/inflation
Regional market	-10%/10%	-10%/10%	-0.5%/+0.5% points
Dec. 31, 2022			
Berlin	0.7/-0.7	2.2/-2.2	6.5/-6.4
Rhine Main area	0.6/-0.6	1.7/-1.7	4.1/-4.2
Dresden	0.9/-0.9	2.7/-2.7	6.4/-6.3
Rhineland	0.7/-0.7	2.0/-2.0	4.7/-4.8
Southern Ruhr area	1.0/-1.0	2.6/-2.6	6.2/-6.2
Hamburg	0.7/-0.7	2.1/-2.1	5.2/-5.3
Hanover	0.8/-0.8	2.4/-2.4	5.4/-5.4
Kiel	0.9/-0.9	2.5/-2.5	5.5/-5.5
Munich	0.4/-0.4	1.4/-1.4	3.9/-4.0
Stuttgart	0.6/-0.6	1.8/-1.8	4.1/-4.2
Northern Ruhr area	1.2/-1.2	3.4/-3.4	6.6/-6.6
Leipzig	0.9/-0.9	3.0/-3.0	7.4/-7.2
Bremen	0.9/-0.9	2.6/-2.6	6.6/-6.4
Westphalia	0.9/-0.9	2.6/-2.6	5.7/-5.8
Freiburg	0.7/-0.6	2.2/-2.2	5.1/-5.1
Other strategic locations	0.8/-0.8	2.5/-2.5	5.3/-5.3
Total strategic locations	0.7/-0.8	2.3/-2.3	5.7/-5.7
Non-strategic locations	0.8/-0.8	2.4/-2.4	4.7/-4.8
Vonovia Germany	**0.8/-0.8**	**2.3/-2.3**	**5.7/-5.7**
Vonovia Sweden*	0.7/-0.7	1.6/-1.7	4.7/-5.1
Vonovia Austria*	n. a.	0.4/-0.4	0.4/-0.5

* The valuation methods used for the portfolio in Austria and Sweden use and provide valuation parameters that are only partially comparable.

Change in value as a % under varying parameters			
Market rent residential	Market rent increase residential	Stabilized vacancy rate residential	Discounting and capitalized interest rates total
-2%/+2%	-0.2%/+0.2% points	-1%/+1% points	-0.25%/+0.25% points
-2.6/2.5	-10.3/12.7	1.6/-1.8	12.5/-10.1
-2.4/2.4	-8.0/9.5	1.0/-1.6	10.0/-8.3
-2.6/2.6	-8.6/10.2	1.9/-2.0	9.9/-8.3
-2.5/2.5	-8.1/9.5	1.7/-1.8	9.6/-8.1
-2.6/2.6	-8.6/10.2	2.1/-2.1	9.5/-8.0
-2.5/2.4	-8.7/10.6	1.3/-1.8	10.7/-8.8
-2.5/2.5	-8.0/9.4	1.9/-1.9	9.2/-7.8
-2.6/2.5	-7.9/9.3	1.9/-1.9	8.9/-7.6
-2.2/2.2	-8.4/10.1	0.8/-1.5	11.1/-9.1
-2.4/2.4	-7.8/9.1	1.5/-1.7	9.3/-7.9
-2.8/2.8	-7.7/8.9	2.3/-2.3	7.8/-6.7
-2.6/2.7	-9.1/11.1	2.0/-2.0	10.6/-8.8
-2.5/2.5	-8.7/10.4	2.0/-2.0	9.8/-8.2
-2.5/2.5	-7.9/9.3	1.9/-2.0	8.8/-7.5
-2.5/2.5	-8.6/10.3	1.2/-1.8	10.3/-8.5
-2.6/2.6	-7.8/9.1	1.9/-1.9	8.7/-7.5
-2.5/2.5	**-9.0/10.8**	**1.6/-1.9**	**10.7/-8.8**
-2.3/2.3	-6.7/7.8	1.7/-1.8	8.0/-6.9
-2.5/2.5	**-8.9/10.8**	**1.6/-1.9**	**10.6/-8.8**
-2.9/2.8	-8.8/10.2	0.6/-1.2	8.3/-7.1
-0.4/0.4	-1.0/1.1	0.9/-0.9	4.4/-4.0

	Change in value as a % under varying parameters		
	Management costs residential	Maintenance costs residential	Cost increase/inflation
Regional market*	-10%/10%	-10%/10%	-0.5%/+0.5% points
Dec. 31, 2021			
Berlin	0,6/-0,6	1,4/-1,4	4,7/-4,7
Rhine Main area	0,4/-0,4	1,2/-1,2	3,2/-3,3
Dresden	0,7/-0,7	1,9/-1,9	4,9/-4,9
Rhineland	0,5/-0,5	1,6/-1,5	4,2/-4,2
Southern Ruhr area	0,7/-0,7	2,0/-2,0	5,1/-5,1
Hamburg	0,5/-0,5	1,7/-1,7	4,5/-4,6
Hanover	0,6/-0,6	1,7/-1,7	3,9/-4,0
Kiel	0,7/-0,7	2,0/-2,0	4,8/-4,9
Munich	0,3/-0,3	1,0/-1,0	3,3/-3,5
Stuttgart	0,5/-0,5	1,4/-1,4	3,4/-3,6
Northern Ruhr area	1,0/-1,0	2,7/-2,7	5,3/-5,3
Leipzig	0,6/-0,6	1,9/-1,9	5,0/-5,1
Bremen	0,7/-0,7	2,0/-2,0	5,4/-5,4
Westphalia	0,7/-0,7	2,0/-2,0	4,6/-4,7
Freiburg	0,5/-0,5	1,7/-1,7	4,1/-4,3
Other strategic locations	0,6/-0,6	1,9/-1,9	4,1/-4,3
Total strategic locations	**0,6/-0,6**	**1,6/-1,6**	**4,4/-4,5**
Non-strategic locations	0,6/-0,6	1,7/-1,7	3,6/-3,8
Vonovia Germany	**0,6/-0,6**	**1,6/-1,6**	**4,4/-4,5**
Vonovia Sweden**	n. a.	n. a.	1.3/-1.3
Vonovia Austria**	n. a.	0.3/-0.3	0.4/-0.5

* In this table, the portfolio of Deutsche Wohnen, which was disclosed as a separate line in the 2021 Annual Report, has been transferred to the respective regional markets.
** The valuation methods used for the portfolio in Austria and Sweden use and provide valuation parameters that are only partially comparable.

Contractual Obligations

In connection with major acquisitions, Vonovia entered into contractual obligations or assumed such obligations indirectly via acquired companies, among other things in the form of Social Charters, which could limit its ability to freely sell parts of its portfolio, increase rents or terminate existing rent agreements for certain units and which, in the event of a breach, could give rise to substantial contractual penalties in some cases. Moreover, when acquiring and financing some of the properties in the portfolio, Vonovia also entered into an obligation to spend a certain average amount per square meter on maintenance and improvements.

After a certain period of time, these obligations often cease to apply either in full or in part. As of December 31, 2022, around 105,000 residential units in Vonovia's portfolio were subject to one or several contractual restrictions or other obligations.

> **Sale restrictions:** As of December 31, 2022, around 66,000 residential units were subject to sale restrictions (excl. occupancy rights). Around 18,000 of these units cannot be freely sold before a certain date. Sale restrictions like these include a full or partial ban on the sale of residential units and provisions requiring the consent of certain representatives of the original seller prior to sale.

> **Preemptive rights on preferential terms:** Around 6,000 residential units from the "Recurring Sales" subportfolio can only be sold if the tenants are offered preemptive rights on preferential terms. This means that Vonovia is obliged to offer these tenants the residential units at a price that is up to 15% below the price that could be achieved by selling the units in question to third parties.

Change in value as a % under varying parameters			
Market rent residential	Market rent increase residential	Stabilized vacancy rate residential	Discounting and capitalized interest rates total
-2%/+2%	-0.2%/+0.2% points	-1%/+1% points	-0.25%/+0.25% points
-1,6/1,6	-8,2/9,7	1,2/-1,6	11,5/-9,3
-2,1/2,1	-7,6/9,0	1,1/-1,5	10,0/-8,3
-2,3/2,3	-7,8/9,2	1,7/-1,8	9,5/-8,0
-2,4/2,4	-7,6/9,0	1,6/-1,6	9,6/-8,1
-2,5/2,5	-8,1/9,5	1,9/-1,8	9,3/-7,8
-2,4/2,3	-8,7/10,5	1,2/-1,6	11,0/-8,9
-2,2/2,2	-7,2/8,3	1,7/-1,7	8,9/-7,6
-2,4/2,4	-7,9/9,3	1,8/-1,8	9,2/-7,8
-2,0/2,0	-8,3/9,9	0,8/-1,4	11,2/-9,2
-2,3/2,3	-7,8/9,0	1,3/-1,6	9,6/-8,1
-2,6/2,6	-7,1/8,1	2,1/-2,1	7,5/-6,5
-2,1/2,1	-7,8/9,1	1,8/-1,8	9,7/-8,1
-2,4/2,4	-8,3/9,8	1,8/-1,8	9,7/-8,1
-2,4/2,3	-7,5/8,8	1,7/-1,8	8,6/-7,3
-2,4/2,3	-8,4/9,9	1,1/-1,6	10,2/-8,5
-2,3/2,4	-7,3/8,4	1,7/-1,7	8,6/-7,3
-2,0/2,0	**-7,9/9,4**	**1,4/-1,7**	**10,2/-8,5**
-1,6/1,7	-5,7/6,0	1,6/-1,6	7,6/-6,6
-2,0/2,0	**-7,9/9,3**	**1,4/-1,7**	**10,2/-8,5**
-3.0/3.0	-1.3/1.3	0.8/-1.3	7.8/-6.8
-0.4/0.4	-1.0/1.1	0.9/-0.9	4.9/-4.4

> **Restrictions on the termination of lease agreements:** Around 82,000 residential units are affected by restrictions on the termination of lease agreements. These restrictions include notice to vacate for personal use and notice to vacate for appropriate commercial utilization. In some cases, units are covered by a lifelong security of tenure.

> **Expenses for minimum maintenance and restrictions on maintenance and modernization measures:** No apartments are subject to minimum maintenance obligations anymore. Around 51,000 residential units are affected by restrictions relating to modernization and maintenance measures, which are designed to prevent changes in socio-economic tenant composition (i.e., to limit luxury modernization). Some of the restrictions to prevent luxury modernization have been agreed on a permanent basis.

> **Restrictions on rent increases:** Restrictions on rent increases (including provisions stating that "luxury modernization" measures are subject to approval) affect around 43,000 residential units. These restrictions could prevent Vonovia from realizing the rent that could potentially be generated from the units in question.

In many cases, in the event that all or part of a portfolio is transferred or individual residential units are sold, the aforementioned obligations are to be assumed by the buyers, who are in turn subject to the obligation to pass them on to any future buyers.

Under structured financing programs, Vonovia is subject to fundamental restrictions on the use of excess property disposal proceeds, such restrictions being particularly in the form of mandatory minimum capital repayments. Excess cash from property management is also restricted to a certain extent.

All contractual obligations that have a material impact on the valuation were taken into account accordingly.

29 Financial Assets

in € million	Dec. 31, 2021 non-current	Dec. 31, 2021 current	Dec. 31, 2022 non-current	Dec. 31, 2022 current
Non-consolidated subsidiaries	2.4	–	2.5	–
Other investments	374.6	–	396.1	–
Loans to other investments	33.2	–	33.1	–
Securities	5.2	–	5.5	–
Other non-current loans	511.8	563.1	121.2	716.2
Receivables from finance leases	23.7	–	21.1	2.6
Other current financial receivables from financial transactions	–	499.6	–	–
Derivatives	65.8	0.6	165.5	49.4
	1,016.7	**1,063.3**	**745.0**	**768.2**

Accounting Policies

Financial assets are recognized in the balance sheet when Vonovia becomes a contracting party of the financial instrument. A financial asset is derecognized when the contractual rights to the cash flows from a financial asset expire, or the financial asset is transferred and Vonovia neither retains control nor retains material risks and rewards associated with ownership of the financial asset.

In accordance with IFRS 9, the **classification of financial assets** takes into account both the business model in which financial assets are held and the characteristics of the cash flows of the assets in question. These criteria determine whether the assets are measured at amortized cost using the effective interest method or at fair value.

With regard to the business model criterion, all financial investments at Vonovia are to be assigned to the "hold to collect" model pursuant to IFRS 9.4.1.2(a). Whenever financial investments are categorized as equity instruments, Vonovia has exercised the irrevocable option to state future changes to the fair value in other comprehensive income in equity. Gains and losses recognized in other comprehensive income are never reclassified from total equity to the income statement on their disposal.

The carrying amount of financial assets corresponds to maximum risk of loss as of the reporting date.

Other investments comprise the Vesteda Residential Fund FGR, Amsterdam, in the amount of € 188.2 million (December 31, 2021: € 193.5 million) and OPPCI JUNO, Paris, in the amount of € 95.7 million (December 31, 2021: € 109.7 million).

In connection with the cooperation with Gropyus AG, Vienna, a non-current equity investment in the amount of € 32.1 million was added in the reporting year.

The loans to other investments not yet due relate to a loan to the property fund DB Immobilienfonds 11 Spree-Schlange von Quistorp KG.

The drop in other non-current loans is due primarily to the debt recovery action relating to a Lombard loan in the amount of around € 250.0 million (see → **[D30] Financial Assets Accounted for Using the Equity Method**).

The other non-current loans also largely include loan receivables with a nominal value of € 801.9 million (December 31, 2021: € 806.5 million) from the QUARTERBACK Immobilien Group granted in line with standard market conditions.

The expected credit losses for the loans granted to the QUARTERBACK Immobilien Group were calculated in accordance with the IFRS 9 general approach. The loans generally feature a risk concentration. As the credit risk had increased considerably as of the reporting date as against the prior period, the calculations were performed based on the lifetime expected probability of default pursuant to IFRS 7.35M, resulting in expected credit losses of € 20.1 million. The new loans taken out as of the reporting date are excluded from a significant increase in credit risk and are still calculated on the basis of a twelve-month probability of default.

The receivables from finance leases are mainly due to the rental of certain broadband cable networks. There were receivables of € 23.7 million (December 31, 2021: € 23.7 million) and interest income of € 1.1 million on the reporting date (December 31, 2021: € 1.3 million). The debt maturity profile of the receivables is as follows:

in € million	Dec. 31, 2021	Dec. 31, 2022
Nominal value of outstanding lease payments	28.2	28.2
thereof due within one year	–	3.5
thereof due between one and two years	3.5	3.6
thereof due between two and three years	3.6	3.0
thereof due between three and four years	3.0	3.0
thereof due between four and five years	3.0	3.0
thereof due after more than five years	15.1	12.1
plus unguaranteed residual values	0.2	0.2
less unrealized financial income	-4.7	-4.7
Present value of outstanding lease payments	**23.7**	**23.7**

Other current financial receivables from financial transactions include time deposits and short-term financial investments in highly liquid money market funds that have an original term of more than three months.

Non-current derivatives include positive market values from cross currency swaps in the amount of € 47.0 million (December 31, 2021: € 35.2 million) and positive market values of € 165.5 million (December 31, 2021: € 4.3 million) from other interest rate derivatives. The call option reported here in the previous year with a positive fair value of € 26.3 million is no longer recognized in connection with the debt recovery action relating to the shares in Adler Group S.A. (see → **[D30] Financial Assets Accounted for Using the Equity Method**).

30 Financial Assets Accounted for Using the Equity Method

As of the reporting date, Vonovia held interests in 26 joint ventures and eight associates (December 31, 2021: 26 joint ventures and seven associates).

The change is due to control of 20.5 % of the shares in Adler Group S.A., which were previously held by Aggregate Holdings Invest S.A., passing to Vonovia as part of a debt recovery action on February 22, 2022.

The shares had been pledged to secure a loan that Vonovia had granted on October 7, 2021, to replace a bank loan of Aggregate Holdings Invest S.A.

At the time of the debt recovery action, the shares in the Adler Group had been reported at their market value of € 251.4 million as investments in associates accounted for using the equity method.

As the value of the assets offered in the form of the call option of € 25.3 million and the other loan of € 215.3 million was lower than the value of the shares acquired, taking into account costs and interest this resulted in a negative difference of € 9.4 million, which was disclosed as other operating income in profit or loss.

As current information is not yet available, no adjustments were made in connection with the remeasurement of the assets and liabilities.

As of June 30, 2022, an impairment loss of € 160.6 million was recognized for the shares in the Adler Group as part of an ad hoc impairment test. The development of the Adler Group's share price was identified as a triggering event within the meaning of IAS 28.

The adjustment based on the equity method, taking into account the pro rata total comprehensive income of the Adler Group of € -152.7 million for the period from March 31, 2022, to September 30, 2022, was made as of December 31. Taking into account the existing investment carrying amount of € 90.8 million, the adjustment was only made in the amount of the investment carrying amount. The value recognized for the non-current equity investment amounts to € 0.0 million as of December 31, 2022.

The impairment loss and the income adjustment were recognized in the consolidated income statement under net income from non-current financial assets accounted for using the equity method.

Vonovia also holds 40% of the non-listed QUARTERBACK Immobilien AG with registered office in Leipzig, which was classed as an associate as of December 31, 2022. QUARTERBACK Immobilien AG is a project developer with operations throughout Germany focusing on the central German region. The investment strengthens Vonovia's development business.

Vonovia also holds interests in eleven (December 31, 2021: eleven) non-listed financial investments of QUARTERBACK Immobilien AG, with equity interests of between 44% and 50% (QUARTERBACK property companies), that were classified as joint ventures.

The 40 % stake in the non-listed QUARTERBACK Immobilien AG and QBI's eleven non-listed financial investments in which Vonovia holds a stake of between 44 % and 50 % in each case was adjusted on the basis of the financial information as of December 31, 2022, that was available on the preparation cut-off date.

The total purchase price was definitively allocated to the acquired assets and liabilities as of September 30, 2022 and did not result in any major adjustments.

in € million	Dec. 31, 2021 QUARTERBACK Immobilien AG (adjusted)	Dec. 31, 2022 QUARTERBACK Immobilien AG	Dec. 31, 2021 QUARTERBACK-property companies	Dec. 31, 2022 QUARTERBACK-property companies
Non-current assets	774.3	764.0	234.3	229.5
Current assets				
Cash and cash equivalents	112.7	104.9	15.7	21.1
Other current assets	1,133.6	1,510.3	567.9	589.3
Total non-current assets	1,246.3	1,615.2	583.6	610.4
Total non-current liabilities	769.9	841.6	111.9	86.6
Total current liabilities	908.7	1,186.2	462.2	510.3
Non-controlling interests	40.9	42.5	11.9	12.0
Equity (100%)	**301.1**	**308.9**	**231.9**	**231.0**
Group share in %	40%	40%	44% to 50%	44% to 50%
Group share of net assets in EUR	120.4	123.6	108.8	106.6
Group adjustments	-1.6	-49.5	-4.6	-5.4
Goodwill	128.6		–	
Carrying amount of share in joint venture	**247.4**	**74.1**	**104.2**	**101.2**
Revenues	205.9	311.1	60.3	59.0
Change in inventories	631.3	302.2	24.0	17.7
Interest income	4.3	20.6	9.1	8.4
Depreciation and amortization	-3.0	-4.3	-0.2	-0.2
Interest expenses	-48.3	-78.2	-17.1	-23.2
Income taxes	-13.7	-18.1	-1.9	-0.6
Total gain and comprehensive income for the fiscal year (100%)	**16.5**	**7.8**	**7.2**	**-3.1**

The at-equity adjustment of the investments in the QUARTERBACK Group results in a negative result of € 8.5 million as of December 31, 2022 (Q4 2021: € 3.7 million).

As of June 30, 2022, an impairment loss of € 120.8 million was recognized for QUARTERBACK Immobilien AG as part of an ad hoc impairment test. The increased cost of capital was identified as a triggering event within the meaning of IAS 28. Due to the final purchase price allocation, the associated reassessment was used for the impairment test as of June 30, 2022. This produced an adjusted impairment loss of € 167.8 million retroactive to June 30, 2022. No further need for impairment was identified as part of the regular impairment test as of December 31, 2022.

The impairment loss identified was recognized in the consolidated income statement under net income from non-current financial assets accounted for using the equity method.

In addition to these investments, Vonovia also holds interests in 21 (December 31, 2021: 21) other entities that are accounted for using the equity method and are currently of minor importance; quoted market prices are not available.

Within other non-current equity investments, a need for impairment of € 2.3 million was identified for one non-current equity investment as part of the regular impairment test as of December 31, 2022.

The following table shows, in aggregated form, the carrying amount and the share of profit and other comprehensive income of these companies:

in € million	Dec. 31, 2021	Dec. 31, 2022
Carrying amount of shares in companies accounted for using the equity method	73.7	64.8
Group share of net income from companies not accounted for using the equity method	10% to 50%	10% to 50%
Pro rata total comprehensive income	**12.0**	**-6.6**

The interests were adjusted for these entities provided that corresponding financial information was available.

With regard to the other 21 entities, Vonovia has no significant financial obligations or guarantees with respect to joint ventures and associates.

31 Other Assets

	Dec. 31, 2021		Dec. 31, 2022	
in € million	non-current	current	non-current	current
Advance payments for real estate projects	184.5	–	363.0	104.5
Right to reimbursement for transferred pensions	3.5	–	2.6	–
Receivables from insurance claims	1.0	19.2	1.6	29.3
Miscellaneous other assets	10.6	201.7	13.0	203.7
	199.6	**220.9**	**380.2**	**337.5**

The advance payments made for real estate projects include ongoing project developments by third parties (forward deals) in which the purchase price is paid in installments during the project development phase.

The right to reimbursement for transferred pensions is in connection with the indirect obligation shown under provisions for pensions arising from pension entitlements transferred to former affiliated companies of the Viterra Group.

The receivables from insurance claims include the recognition of the excess of the fair value of plan assets over the corresponding pension obligations amounting to € 1.6 million (December 31, 2021: € 1.0 million).

32 Income Tax Receivables

The income tax receivables disclosed relate to corporate income tax and trade tax receivables for the current fiscal year and prior years as well as capital gains tax.

The increase in the 2022 fiscal year results mainly from the rise in rebate entitlements on tax prepayments and capital gains tax to be credited at certain domestic subsidiaries.

33 Inventories

Accounting Policies

Inventories are valued at cost or at their net realizable value, whichever is lower.

Inventories include € 113.9 million (December 31, 2021: € - million) in work in progress relating to ancillary costs bills in 2023. Inventories also largely include repair materials for our craftsmen's organization.

34 Trade Receivables

The trade receivables break down as follows:

	Impaired		Not impaired						Carrying amount
				Overdue in the following time bands as at the reporting date					
in € million	Gross amount	Impair-ment losses	Neither impaired nor past due at the end of the reporting period	less than 30 days	between 30 and 90 days	between 91 and 180 days	between 181 and 360 days	more than 360 days	Corre-sponds to maximum risk of loss*
Receivables from the sale of investment properties	1.4	-1.3	33.1	10.2	2.5	0.8	0.5	–	47.2
Receivables from the sale of real estate inventories	–	–	18.2	0.1	4.8	3.8	0.3	0.3	27.5
Contract assets	–	–	165.7	2.1	1.4	–	–	–	169.2
Receivables from property letting	102.1	-57.2	–	–	–	–	–	–	44.9
Receivables from other supplies and services	9.5	-2.8	31.6	2.2	0.1	0.1	0.7	–	41.4
As of Dec. 31, 2022	**113.0**	**-61.3**	**248.6**	**14.6**	**8.8**	**4.7**	**1.5**	**0.3**	**330.2**
Receivables from the sale of invest-ment properties	2.2	-2.2	74.9	2.5	9.9	11.6	1.6	4.1	104.6
Receivables from the sale of real estate inventories	0.7	-0.2	9.6	1.7	0.6	1.9	0.7	2.0	17.0
Contract assets	–	–	239.0	1.6	1.8	0.7	3.6	0.3	247.0
Receivables from property letting	103.3	-54.7	–	–	–	–	–	–	48.6
Receivables from other supplies and services	9.3	-3.1	23.2	2.9	0.4	–	–	–	32.7
As of Dec. 31, 2021	**115.5**	**-60.2**	**346.7**	**8.7**	**12.7**	**14.2**	**5.9**	**6.4**	**449.9**

* The maximum default risk on the receivables from the sale of properties is limited to the margin and the transaction unwinding costs as the title to the properties remains with Vonovia as security until receipt of payment.

Accounting Policies

Impairment losses on financial assets are determined based on the expected credit loss model. The guiding principle of the model is to reflect the general pattern of deterioration or improvement in the credit quality of financial instruments, taking losses that are already expected into account.

The IFRS 9 approach includes the following measurement levels:

> Level 1: Twelve-month expected credit losses (ECLs), which applies to all items (from initial recognition) as long as there is no significant deterioration in credit quality.
> Level 2: Lifetime ECLs (homogeneous debtor portfolios), which applies when a significant increase in credit risk has occurred on an individual or a collective basis of financial instruments.
> Level 3: Lifetime ECLs (based on an individual assessment): If an individual assessment of assets produces objective indications of a need for impairment, then an assessment of the entire maturity of the financial instrument is decisive.

The simplified impairment approach is used with regard to **trade receivables** (e. g., rent receivables, receivables from ancillary costs, receivables from the sale of properties) and for **contract assets** pursuant to IFRS 15. This means that there is no need to track the changes in credit risk. Instead, Vonovia has to set up loan loss provisions in the amount of the lifetime expected credit losses both at the time of initial recognition and on each following reporting date.

The carrying amounts of current trade receivables correspond to their fair values.

In principle, all impaired trade receivables are due and payable. As regards the trade receivables that are neither impaired nor past due, there was no indication on the reporting date that the debtors would not meet their payment obligations.

Receivables from the sale of properties arise on economic transfer of ownership. The due date of the receivable may, however, depend on the fulfillment of contractual obligations. Some purchase contracts provide for the purchase price to be deposited in an escrow account. Impairment losses for doubtful debts are recorded up to the amount of the posted proceeds from sales.

Vonovia's receivables from property letting generally arise at the beginning of the month, are of a short-term nature and result from claims in relation to tenants relating to operating business activities. Due to the (subsequent) measurement at amortized cost, an impairment test has to be performed. The receivables fall under the scope of the calculation of expected credit losses.

In accordance with the general provisions set out in IFRS 9, expected credit losses are to be recognized using the simplified approach for current trade receivables without any significant financing component.

Irrespective of their term, Vonovia initially assigns receivables to Level 2 of the impairment model. In the further course, they need to be moved to Level 3 of the impairment model if there is objective evidence of impairment. The transfer from Level 2 to Level 3 is to be made at the latest when the contractual payments have been overdue for more than 90 days. This assumption can, however, be refuted in individual cases if there are no other objective indications pointing towards a default. Receivables always have to be transferred to the next level if a legally enforceable instrument has been obtained against the tenant as part of a dunning procedure. If the objective evidence of impairment ceases to apply, the receivable is transferred (back) to Level 2 of the impairment model.

If Vonovia becomes aware of any major changes in market conditions and/or a debtor's circumstances, it reevaluates the expected credit losses without delay. This procedure ensures that receivables are transferred to the right level in the impairment model as soon as possible.

Vonovia uses a credit loss matrix when calculating expected credit losses for trade receivables. The matrix is based on historical default rates and takes current expectations into account, including macroeconomic indicators (e.g., GDP). The matrix can be used to calculate the expected credit losses for various homogeneous portfolios.

In order to create portfolios for the purpose of assessing the probability of default, the individual clusters of receivables need to have homogeneous credit risk characteristics. As far as receivables from its operating business activities are concerned, i.e., the letting of rental properties, Vonovia makes a distinction between receivables from existing tenants and receivables from former tenants. Both portfolios include current receivables that are exposed to a low level of volatility, as the company's core operating business is hardly exposed to any major fluctuations. Main effects on receivables in the past are attributable to corporate takeovers by Vonovia.

Calculation Method for Receivables from Former Tenants

The calculation of the probability of default is based on the results of an analysis of the historical probability of default. Cash flows relating to outstanding receivables over the last three years have been analyzed and an average amount of incoming payments for the year in question was calculated on a monthly basis. The average monthly incoming payments were compared against the average monthly receivables for the year in question. Ultimately, Vonovia has been able to collect approx. 4.5% of the average receivables over the last three years. This means that Vonovia sets up risk provisions corresponding to a rounded total of 95% for its receivables from former tenants.

The loss given default comprises the following:

The receivables of former tenants that are being analyzed (amount of the receivable at the time of default) are corrected to reflect retained deposits that serve as security for Vonovia. This is already taken into account as part of the calculation method used for the probability of default.

The average receivables taken as a basis do not include receivables subject to specific valuation allowances that were written off in full.

Receivables from Existing Tenants

When it comes to determining the probability of default with regard to receivables associated with ongoing lease agreements, Vonovia analyzes those receivables that have actually been derecognized over the last three years.

This is performed systematically by way of a receivables management system according to the aspects receivables relating to ancillary expenses, those connected to the product, rent adjustments and payment difficulties.

Impairment losses on trade receivables developed as follows:

in € million	
Impairment losses as of Jan. 1, 2022	**60.2**
Addition	28.1
Addition due to business combinations	0,0
Utilization	-24.7
Reversal	-2.3
Impairment losses as of Dec. 31, 2022	**61.3**
Impairment losses as of Jan. 1, 2021	**55.2**
Addition	24.1
Addition due to business combinations	19.5
Utilization	-37.7
Reversal	-0.9
Impairment losses as of Dec. 31, 2021	**60.2**

Within the impairment losses on receivables from property letting, the risk provisions are generally taken into account as follows: For existing tenants, a risk provision corresponding to between 18% and 40% of the receivables, in a total amount of € 7.5 million (December 31, 2021: € 12.7 million), was set up depending on the term. In cases involving payment difficulties, the provision corresponded to between 40% and 95% of the receivables and amounted to € 18.2 million in total (December 31, 2021: € 14.5 million). The risk provisions for former tenants correspond to 95% of the receivables and amount to € 31.5 million in total (December 31, 2021: € 26.2 million).

For contracts with customers who are assigned to Vonovia's development business, the payment terms pursuant to Section 3 (2) of the Real Estate Agent and Commercial Contractor Regulation (MaBV) generally apply in Germany. Customers also have a contractual obligation to present a financing commitment issued by a credit institution for the entire purchase price. Otherwise, Vonovia is entitled to withdraw from the agreement. In Austria, the installment plan pursuant to Section 10 (2) of the Austrian Property Development Contract Act (BTVG) is normally applied, with customers obliged to pay the entire purchase price into an escrow account. Due to the structure of the standard payment terms in the development business, no separate impairment losses are taken into account on corresponding receivables from customer contracts.

For example, receivables are derecognized if tenants die and have no heirs, if they move to an unknown location or move abroad, if execution is impossible for the court bailiff, in cases involving bankruptcy or if a settlement was reached.

The following table shows the expenses for the full derecognition of receivables as well as income from the receipt of derecognized receivables:

in € million	2021	2022
Expenses for the derecognition of receivables	5.4	8.9
Income from the receipt of derecognized receivables	2.9	6.4

35 Cash and Cash Equivalents

Accounting Policies

Cash and cash equivalents include cash on hand, checks and deposits at banking institutions as well as marketable securities with an original term of up to three months.

Cash and cash equivalents are measured using the general impairment approach in accordance with IFRS 9.

Cash and cash equivalents include cash on hand, checks and deposits at banking institutions totaling € 1,101.8 million (December 31, 2021: € 1,134.0 million), as well as marketable current securities in the amount of € 200.6 million (December 31, 2021: € 298.8 million).

€ 104.1 million (December 31, 2021: € 117.6 million) of the bank balances are restricted with regard to their use.

36 Real Estate Inventories

Accounting Policies

Properties from the sales-related development business and land and buildings intended for sale are reported within real estate inventories. The **sales-related development business** refers to subsidized or independently financed condominiums that are under construction or have already been completed. These properties are not held with the aim of generating rental income or achieving increases in value within the meaning of IAS 40, but rather are developed and constructed to be sold at a later date. These development projects are recognized depending on whether there is a customer contract for the residential units that are intended for sale. If this is not the case, the valuation is performed, due to the intention to sell according to IAS 2 at amortized cost or at net realizable value, whichever is lower, with a corresponding disclosure under real estate inventories.

Land and buildings intended for sale are properties that are sold in the ordinary course of business, which may exceed a period of twelve months. Initial measurement is at cost. Acquisition costs include the directly attributable costs of acquisition and provision, in particular the acquisitions costs for the land and the incidental acquisition costs.

Recognized real estate inventories in the amount of € 2,156.3 million (December 31, 2021: € 671.2 million) mainly concern development projects. These are projects to construct residential units planned for sale that are currently being built or that have been completed but have not yet been sold. The increase as against the previous year is mainly due to reclassifications from investment properties to real estate inventories due to the conversion of development-to-hold projects into development-to-sell projects.

37 Assets and Liabilities Held for Sale

Accounting Policies

To be classified as **held for sale,** the assets must be available for immediate sale in their present condition subject only to terms that are usual and customary for sales of such assets, and it must be highly probable that a sale will take place. A sale is deemed to be highly probable if there is a commitment to a plan to sell the asset, an active program to locate a buyer and complete the plan has been initiated, the asset is being actively marketed for sale at a reasonable price, and a sale is expected to be completed within one year of the date on which the asset is classified as held for sale.

Vonovia accounts for investment properties as assets held for sale when notarized purchase contracts have been signed or a declaration of intent to purchase has been signed by both parties as of the reporting date but transfer of title will, under the contract, not take place until the subsequent reporting period. Initially they are recognized at the contractually agreed selling price and subsequently at fair value following deductions for costs to sell, if the latter is lower.

Ownership of all of the residential and commercial units sold to municipal housing companies in Berlin in the previous year was transferred in 2022. This reduced assets held for sale by a total of € 2.4 billion.

The assets held for sale now include only properties for which notarized purchase contracts had already been signed as of the reporting date as part of Vonovia's ordinary sales activities totaling € 70.8 million. The value as of December 31, 2021 was € 302.6 million.

Section (E): Capital Structure

38 Total Equity

Accounting Policies

Other comprehensive income includes changes in total comprehensive income not affecting net income except that resulting from capital transactions with equity holders (e.g., capital increases or dividend distributions). Vonovia includes under this item unrealized gains and losses from the fair value measurement of equity instruments and derivative financial instruments that are designated as cash flow hedges. The item also includes actuarial gains and losses from defined benefit pension commitments as well as certain currency translation differences.

The other reserves contain cumulative changes in equity not affecting income. At Vonovia, the effective portion of the net change in the fair value of cash flow hedging instruments, the equity instruments at fair value as well as currency translation differences are recognized in other comprehensive income.

The other reserves from cash flow hedges and from currency translation differences can be reclassified. When the underlying hedged item of the cash flow hedge affects net income, the reserves attributable thereto are reclassified to profit or loss. If a foreign business is disposed of, the reserves attributable thereto are reclassified.

Development of the Subscribed Capital

in €

As of Jan. 1, 2022	**776,597,389.00**
Capital increase against non-cash contributions on May 25, 2022 (scrip dividend)	19,252,608.00
As of Dec. 31, 2022	**795,849,997.00**

Development of the Capital Reserves

in €

As of Jan. 1, 2022	**15,458,430,362.98**
Premium from capital increase for scrip dividend on May 25, 2022 (scrip dividend)	597,562,447.10
Transaction costs on the issue of new shares (after allowing for deferred taxes)	-732,067.06
Withdrawal from capital reserve	-10,903,833,217.46
Other changes not affecting net income	116,850.56
As of Dec. 31, 2022	**5,151,544,376.12**

Dividend

The Annual General Meeting held on April 29, 2022, resolved to pay a dividend for the 2021 fiscal year in the amount of € 1.66 per share, € 1,289.2 million in total.

As in previous years, shareholders were offered the option of choosing between being paid the dividend in cash or being granted new shares. During the subscription period, shareholders holding a total of 47.85% of the shares carrying dividend rights opted for the scrip dividend instead of the cash dividend. As a result, 19,252,608 new shares were issued using the company's authorized capital pursuant to Section 5b of the Articles of Association ("2021 authorized capital") at a subscription price of € 32.038, i.e., a total amount of € 616,815,055.10. The total amount of the dividend distributed in cash therefore came to € 672,336,610.64.

Authorized Capital

At the Annual General Meeting on April 29, 2022, a resolution was passed to cancel the 2021 authorized capital and create new 2022 authorized capital in the amount of € 233,000,000.00; pursuant to the resolution, the Management Board is authorized, in accordance with Article 5 of the Articles of Association, to raise equity once or multiple times by issuing up to 233,000,000 new shares (2022 authorized capital).

Conditional Capital

In order to serve the authorization, passed by the Annual General Meeting of April 16, 2021, to issue convertible bonds, bonds carrying option rights, participating rights, and participating bonds, "2021 conditional capital" was created. On the basis of the resolution of this Annual General Meeting, the share capital is conditionally increased by up to € 282,943,649.00 through the issuing of 282,943,649 new no-par-value registered shares carrying dividend rights. The conditional capital increase shall only be carried out to the extent that the owner (i.e., creditor) of the debt instruments stipulated in the capital increase resolution on 2021 conditional capital is entitled to demand conversion in shares and that the instruments are served in this manner instead of cash payment.

Retained Earnings

Retained earnings of € 25,605.1 million (December 31, 2021: € 16,535.5 million) were reported as of December 31, 2022. This figure includes actuarial gains and losses of € 22.7 million (December 31, 2021: € -138.1 million), which cannot be reclassified and therefore may no longer be recognized in profit or loss in subsequent reporting periods.

Other Reserves

Changes in other comprehensive income during the period in the amount of € -359.8 million (2021: € 0.7 million) are mainly the result of currency translation differences due to changes in the exchange rate for the Swedish krona against the euro.

Non-controlling Interests

Shares of third parties in Group companies are recognized under non-controlling interests.

Non-controlling interests decreased by € 135.1 million in the 2022 fiscal year, from € 3,242.4 million as of January 1, 2022, to € 3,107.3 million as of December 31, 2022. This drop is attributable primarily to the profit for the period attributable to non-controlling interests, neutral disposals due to further acquisitions of shares in subsidiaries and the sale of subsidiaries with non-controlling interests in Berlin.

The combined subgroup financial information, prepared in accordance with Vonovia's accounting policies, for the Deutsche Wohnen Group as a major subsidiary with non-controlling interests and its registered headquarters in Berlin is as follows:

in € million	Dec. 31, 2021 Deutsche Wohnen Group	Dec. 31, 2022 Deutsche Wohnen Group
Revenue*	402.3	1,564.5
Profit for the period*	262.9	-424.8
attributable to non-controlling interests*	38.3	-59.2
Other comprehensive income*	47.1	21.5
attributable to non-controlling interests*	0.2	2.3
Total non-current assets	29,939.3	28,041.9
Total current assets	3,448.8	2,504.4
thereof cash and cash equivalents	674.7	184.3
Total non-current liabilities	15,914.3	14,584.5
Total current liabilities	1,015.7	836.9
Total equity	**16,458.1**	**15,124.9**
Cash flow from operating activities	607.3	144.1
Cash flow from investing activities	-688.5	227.8
Cash flow from financing activities	174.6	-864.3
Net changes in cash and cash equivalents	93.4	-492.4
Dividend	1.03	0.04

* In 2021 for the period from September 30 to December 31, 2021.

39 Provisions

in € million	Dec. 31, 2021 non-current	Dec. 31, 2021 current	Dec. 31, 2022 non-current	Dec. 31, 2022 current
Provisions for pensions and similar obligations	**684.5**	**–**	**512.5**	**–**
Provisions for taxes (current income taxes excl. deferred taxes)	**–**	**233.2**	**–**	**290.9**
Other provisions				
Environmental remediation	19.8	16.8	25.0	–
Personnel obligations	39.0	84.4	24.2	85.1
Outstanding trade invoices	–	267.2	–	–
Miscellaneous other provisions	123.0	125.6	94.0	173.7
Total other provisions	**181.8**	**494.0**	**143.2**	**258.8**
Total provisions	**866.3**	**727.2**	**655.7**	**549.7**

Provisions for Pensions and Similar Obligations

Accounting Policies

When valuing the **provisions for pensions**, the company pension obligations are determined using the projected unit credit method pursuant to IAS 19 "Employee Benefits," whereby current pensions and vested pension rights as of the reporting date as well as expected future increases in salaries and pensions, are included in the valuation. An actuarial valuation is performed at every reporting date.

The amount shown in the balance sheet is the total present value of the defined benefit obligations (DBO) after offsetting against the fair value of plan assets.

Actuarial gains and losses are accounted for in full in the period in which they occur and recognized in retained earnings as a component of other comprehensive income and not in profit or loss. The actuarial gains and losses are also no longer recognized with effect on net income in subsequent periods.

Service cost is shown in personnel expenses. The service cost is the increase in the present value of a defined benefit obligation resulting from employee service in the reporting period.

The interest expense is recognized in the financial result. Interest expense is the increase during a period in the present value of a defined benefit obligation that generally arises due to the fact that the benefit obligation is one period closer to being discharged.

Reinsurance contracts that qualify as plan assets have been taken out to cover the pension obligations toward particular individuals. Where the value of those reinsurance contracts exceeds the related pension obligations, the excess is recognized as an asset and shown under other assets.

Obligations from joint defined benefit multi-employer plans at Versorgungsanstalt des Bundes und der Länder (VBL), a pension institution of the Federal Republic of Germany and the Federal States, are stated, in line with IAS 19.34, in the same way as obligations from defined contribution plans, insofar as the information required for the statement of defined benefit plans is not available. The obligations are based on the amounts to be paid for the current period.

Vonovia has pension obligations towards various employees which are based on the length of service. Defined benefit and defined contribution obligations – for which Vonovia guarantees a certain level of benefit – are financed through provisions for pensions. Vonovia has taken out reinsurance contracts for individual people.

Generally, they are pension benefits that depend on the final salary with percentage increases depending on the number of years of service.

The pension commitments cover 7,657 (December 31, 2021: 6,545) eligible persons. The increase results mainly from first-time inclusion of the participants in the deferred compensation scheme that was newly agreed in 2021 in the pension valuation.

The new "BAV 2021" deferred compensation scheme applies as standard for all defined employee groups within the Vonovia Group in Germany (current number of participants: 1,293). In addition to deferred compensation, the employer subsidies (matching contributions) are also contributed to the new employee retirement benefit plan. The matching contributions made in each case correspond to the amount of the deferred compensation contribution made, and are limited to 1% of the employee's monthly gross basic salary.

Executives currently working for companies belonging to Vonovia have the opportunity to participate in the "Pension Instead of Cash Remuneration" model (Versorgungsbezüge anstelle von Barbezügen) (eligible persons: 306, incl. persons no longer active). Retirement, invalidity and surviving dependent benefits in the form of a lifelong pension are offered under this deferred compensation model. The retirement benefits can also be paid out as a one-time capital sum.

Overview of the most important basic data for existing pension plans (all of which have already been closed):

	VO 1/VO 2 Veba Immobilien	VO 60/VO 91 Eisenbahnges.	Bochumer Verband
Type of benefits	Retirement, invalidity and surviving dependent benefits	Retirement, invalidity and surviving dependent benefits	Retirement, invalidity and surviving dependent benefits
Pensionable remuneration	Final salary	Final salary	Not applicable
Max. pension level	Yes	Yes	Depends on individual grouping
Total pension model based on final salary	Yes	No	No
Net benefit limit incl. state pension	None	Yes	None
Gross benefit limit	Yes	None	None
Adjustment of pensions	Section 16 (1,2) BetrAVG	Section 16 (1,2) BetrAVG	Adjustment every 3 years by Bochumer Verband (Management Board resolution)
Supplementary periods	Age of 55	Age of 55	Age of 55 (half)
Legal basis	Works agreement	Works agreement	Commitment to executives in individual contracts
Number of eligible persons	347	643	367

	VO 1991/VO 2002 Gagfah	VO guideline Gagfah M	VO 2017 VBL-Ersatzversorgung
Type of benefits	Retirement, invalidity and surviving dependent benefits	Retirement, invalidity and surviving dependent benefits	Retirement, invalidity and surviving dependent benefits
Pensionable remuneration	Salary for September of each year	Final salary	Salary of each year
Max. pension level	Module p.a.	Yes	Module p.a.
Total pension model based on final salary	No	Yes	No
Net benefit limit incl. state pension	None	None	None
Gross benefit limit	None	Yes	None
Adjustment of pensions	1% p.a.	Section 16 (1,2) BetrAVG	1% p.a.
Supplementary periods	Age of 55	Age of 55	None
Legal basis	Works agreement	Works agreement	Individual agreement
Number of eligible persons	1,104	342	107

The current pensions according to the classic pension benefit regulations of Bochumer Verband are adjusted in line with Section 20 of those regulations. Section 20 is a rule which is based on Section 16 (1,2) of the German Occupational Pensions Improvement Act (BetrAVG) but which, according to a ruling of the Federal Labor Court of Germany, is an independent rule. Other company pensions are reviewed and adjusted under the terms of the agreement according to Section 16 (1,2) BetrAVG. On every review date, the development of the cost of living since the individual retirement date is reviewed and compensated for. Only in the aforementioned deferred compensation model is the option, available since January 1, 1999, used to raise the current pensions every year by 1% (Section 16 [3] No. 1 BetrAVG). No further risks are seen.

The company has decided to use the internal financing effect of the provisions for pensions and only to back a relatively small portion of the pension obligations with plan assets. Reinsurance policies have been taken out for former Management Board members against payment of a one-time insurance premium in order to provide additional protection against insolvency; these reinsurance policies were pledged to the eligible persons. They constitute plan assets, which are offset against the gross obligation. The fair value of the reinsurance policies for individual persons is higher than the extent of the obligations towards the respective person. This surplus of the fair values of the assets over the obligation is shown under non-current other assets. The conclusion of further personal liability insurance reinsurance policies is not planned.

Pension plan obligations and the expenses necessary to cover these obligations are determined using the projected unit credit method prescribed by IAS 19. Both pensions known on the reporting date and vested rights as well as expected future increases in salaries and pensions are included in the measurement. The following actuarial assumptions were made at the reporting date – in each case related to the end of the year and with economic effect for the following year.

Actuarial Assumptions

in %	Dec. 31, 2021	Dec. 31, 2022
Actuarial interest rate	1.10	3.73
Pension trend	1.75	2.19
Salary trend	2.50	3.00

The 2018 G mortality tables of Prof. Dr. Klaus Heubeck have been taken for the biometric assumptions without any changes.

The defined benefit obligation (DBO) developed as follows:

in € million	2021	2022
DBO as of Jan. 1	**648.1**	**711.8**
Additions due to business combinations	110.4	-
Interest expense	4.6	7.7
Current service cost	14.6	16.0
Actuarial gains and losses:		
Changes in the biometric assumptions	4.8	31.3
Changes in the financial assumptions	-41.1	-196.9
Transfer	-	0.1
Benefits paid	-29.6	-30.2
DBO as of Dec. 31	**711.8**	**539.8**

The present value of the pension obligation is divided among the groups of eligible persons as follows:

in € million	Dec. 31, 2021	Dec. 31, 2022
Active employees	157.3	97.9
Former employees with vested pension rights	141.2	85.5
Pensioners	413.3	356.4
DBO as of Dec. 31	**711.8**	**539.8**

Plan assets comprise pension liability insurance reinsurance contracts and long-term contributions made by Vonovia, which are managed by trustees, in the context of the deferred compensation scheme that was closed in the 2021 fiscal year. The fair value of the plan assets has developed as follows:

in € million	2021	2022
Fair value of plan assets as of Jan. 1	**21.2**	**28.3**
Additions due to business combinations	7.7	-
Return calculated using the actuarial interest rate	0.1	0.2
Actuarial gains:		
Changes in the biometric assumptions	-	-
Changes in the financial assumptions	0.7	0.2
Benefits paid	-1.4	-1.6
Employer contributions	-	1.6
Fair value of plan assets as of Dec. 31	**28.3**	**28.7**

The actual return on plan assets amounted to € 0.4 million during the fiscal year (2021: € 0.8 million).

The following table shows a reconciliation of the defined benefit obligation to the pension obligation recognized in the balance sheet:

in € million	Dec. 31, 2021	Dec. 31, 2022
Present value of funded obligations	36.2	33.5
Present value of unfunded obligations	675.6	506.3
Total present value of defined benefit obligations	**711.8**	**539.8**
Fair value of plan assets	-28.3	-28.7
Net liability recognized in the balance sheet	**683.5**	**511.1**
Other assets to be recognized	1.0	1.4
Provisions for pensions recognized in the balance sheet	**684.5**	**512.5**

In 2022, actuarial gains of € 165.8 million (excluding deferred taxes) were recognized in other comprehensive income (2021: € 37.0 million).

The weighted average term of the defined benefit obligations is 12.5 years (December 31, 2021: 15.5 years).

The following table contains the estimated, undiscounted pension payments of the coming five fiscal years and the total of those in the subsequent five fiscal years:

in € million	Projected pension payments
2023	33.4
2024	32.7
2025	32.6
2026	32.8
2027	32.3
2028–2032	160.2

Sensitivity Analyses

An increase or decrease in the material actuarial assumptions would have led to the following defined benefit obligation, providing the other assumptions did not change:

in € million		Dec. 31, 2021	Dec. 31, 2022
Actuarial interest rate	Increase of 0.5%	660.4	507.7
	Decrease of 0.5%	769.6	575.1
Pension trend	Increase of 0.25%	726.5	549.7
	Decrease of 0.25%	696.9	529.0

An increase in life expectancy of 4.8% would have resulted in an increase in the DBO of € 17.8 million as of December 31, 2022 (December 31, 2021: € 27.9 million). This percentage rise corresponds to a one-year increase in the life expectancy of a man who was 65 at the reporting date.

If several assumptions are changed simultaneously, the cumulative effect is not necessarily the same as if there had been a change in just one of the assumptions.

The provisions for pensions include € 2.6 million (December 31, 2021: € 3.5 million) for pension obligations which were transferred to third parties as part of an assumption of debt and which relate to vested rights and the payment of current pensions. A corresponding non-current receivable is shown under miscellaneous other assets.

Other Provisions

Accounting Policies

Other provisions are recognized when there is a present obligation, either legal or constructive, vis-à-vis third parties as a result of a past event if it is probable that a claim will be asserted and the probable amount of the required provision can be reliably estimated. Provisions are discounted if the resulting effect is material. The carrying amount of discounted provisions increases in each period to reflect the passage of time and the unwinding of the discount is recognized within interest expense. The discount rate is a pre-tax rate that reflects current market assessments.

Provisions for restructuring expenses are recognized when the Group has set up and communicated a detailed formal plan for restructuring and has no realistic possibility of withdrawing from these obligations.

Provisions for onerous contracts are recognized when the expected benefits from a contract are lower than the unavoidable cost of meeting the obligations under the contract. The provision is stated at the lower of the present value of the fulfillment obligation and the cost of terminating the contract, i.e., a possible indemnity or fine for breach or non-fulfillment of contract.

Provisions are reviewed regularly and adjusted to reflect new information or changed circumstances.

The **provisions for pre-retirement part-time work arrangements** are basically to be classified as other long-term employee benefits that are to be accrued over the employees' service periods.

The assets of the insolvency policy to secure fulfillment shortfalls arising from pre-retirement part-time work arrangements are offset against the amounts for fulfillment shortfalls contained in the provisions for pre-retirement part-time work arrangements.

A contingent liability is a possible obligation toward third parties that arises from past events and whose existence will be confirmed only by the occurrence or non-occurrence of one or more uncertain future events or a present obligation that arises from past events for which an outflow of resources is not probable or the amount of which cannot be estimated with sufficient reliability. According to IAS 37, contingent liabilities are not generally recognized.

Development of Other Provisions During the Fiscal Year

in € million	As of Jan. 1, 2022	Changes in scope of consolida-tion	Additions	Reversals	Netting plan assets	Interest accretion to provisions	Revaluation from cur-rency ef-fects	Transfer	Utiliza-tion	As of Dec. 31, 2022
Other provisions										
Environmental remediation	36.6	–	–	-0.5	–	-2.2	–	-7.3	-1.6	25.0
Personnel obligations	123.4	–	70.0	-5.0	-0.2	–	-0.7	-0.9	-77.3	109.3
Outstanding trade invoices	267.2	–	–	–	–	–	–	-267.2	–	–
Miscellaneous other provisions	248.6	–	58.8	-22.1		1.6	-0.1	21.3	-40.4	267.7
	675.8	**–**	**128.8**	**-27.6**	**-0.2**	**-0.6**	**-0.8**	**-254.1**	**-119.3**	**402.0**

Development of Other Provisions During the Previous Year

in € million	As of Jan. 1, 2021	Changes in scope of consolida-tion	Additions	Reversals	Netting plan assets	Interest accretion to provisions	Revaluation from cur-rency ef-fects	Transfer	Utiliza-tion	As of Dec. 31, 2021
Other provisions										
Environmental remediation	11.5	10.7	16.6	–	–	–	–	–	-2.2	36.6
Personnel obligations	108.6	37.2	55.1	-3.1	–	0.1	-0.1	–	-74.4	123.4
Outstanding trade invoices	93.4	172.0	156.5	-8.6	–	–	-0.1	–	-146.0	267.2
Miscellaneous other provisions	134.8	124.3	45.1	-31.6	–	5.6	-0.1	–	-29.5	248.6
	348.3	**344.2**	**273.3**	**-43.3**	**–**	**5.7**	**-0.3**	**–**	**-252.1**	**675.8**

Reversals of provisions are generally offset against the expense items for which they were originally established.

The provisions for environmental remediation primarily refer to site remediation of locations of the former Raab Karcher companies and the Kabelwerk Köpenick cable factory. Remediation has either already begun or an agreement has been reached with the authorities as to how the damage is to be remedied. The cost estimates are based on expert opinions detailing the anticipated duration of the remedia-tion work and the anticipated cost.

The personnel obligations are provisions for pre-retirement part-time work arrangements, provisions for bonuses, severance payments not relating to restructuring and other personnel expenses. The other personnel expenses include a provision for the long-term incentive plan (LTIP) determined in accordance with IFRS 2 of € 9.3 million (December 31, 2021: € 22.6 million) (see → **[F48] Share-based Payments**).

The material individual cost items under miscellaneous other provisions include costs associated with legal disputes in the amount of € 39.4 million (December 31, 2021: € 34.2 million), litigation costs in the amount of € 20.0 million (December 31, 2021: € 31.4 million), costs associated with company tax audits in the amount of € 7.3 million (Decem-ber 31, 2021: € 8.2 million) and provisions for other contractu-ally agreed guarantees in the amount of € 3.9 million (De-cember 31, 2021: € 4.2 million).

The Group expects to settle the lion's share of the provision over the coming year.

40 Trade Payables

in € million	Dec. 31, 2021 non-current	Dec. 31, 2021 current	Dec. 31, 2022 non-current	Dec. 31, 2022 current
Liabilities				
outstanding trade invoices	–	–	–	242.8
from property letting	–	133.7	–	127.7
from other supplies and services	5.4	310.7	5.2	192.8
	5.4	**444.4**	**5.2**	**563.3**

Unlike in the previous year, outstanding trade invoices are reported under trade payables as opposed to under provisions.

41 Non-derivative Financial Liabilities

in € million	Dec. 31, 2021 non-current	Dec. 31, 2021 current	Dec. 31, 2022 non-current	Dec. 31, 2022 current
Non-derivative financial liabilities				
Liabilities to banks	16,997.3	4,266.1	17,086.4	1,021.4
Liabilities to other creditors	23,174.6	2,418.3	24,183.3	2,558.4
Deferred interest from non-derivative financial liabilities	–	172.7	–	210.2
	40,171.9	**6,857.1**	**41,269.7**	**3,790.0**

Accounting Policies

Vonovia recognizes **non-derivative financial liabilities**, which mainly include liabilities to banks and to investors, at their fair value on the day of trading, less the directly attributable transaction costs (this generally corresponds to the acquisition cost). These liabilities are subsequently measured at amortized cost using the effective interest method. Financial liabilities are derecognized when Vonovia's obligations specified in the contract expire or are discharged or canceled.

Liabilities bearing no interest or interest below market rates in return for occupancy rights at rents below the prevailing market rates are recorded at present value.

Deferred interest is presented as current in order to show the cash effectiveness of the interest payments transparently. In principle, the deferred interest is part of the non-derivative financial liability. Of the deferred interest from non-derivative financial liabilities, € 173.8 million (December 31, 2021: € 166.2 million) is from bonds reported under non-derivative financial liabilities to other creditors.

The non-derivative financial liabilities developed as follows in the fiscal year under review:

in € million	As of Jan. 1, 2022	First-time consoli-dation	New loans	Scheduled repay-ments	Unsched-uled repay-ments	Adjusted for effec-tive inter-est method	Other adjust-ments	Exchange rate dif-ferences	As of Dec. 31, 2022
Bond (US dollar)	219.3					13.9			233.2
Bond (SEK)			121.2			-8.4			112.8
Bond (EMTN)	24,110.3			-1,600.0	-1,511.8	28.8	-32.9		20,994.4
Bond (EMTN Green Bond)	596.6		1,600.0			-16.8			2,179.8
Bond (EMTN Social Bond)			2,400.0			-20.0			2,380.0
Promissory note loan	230.0		1,010.0			-0.1			1,239.9
Bridge financing	3,481.6			-3,490.0		8.4			–
Commercial paper			500.0	-500.0					–
Mortgages	8,126.7		1,132.0*	-514.3	-188.5	-38.2	-0.7	-106.6	8,410.4
Deferred interest	139.6						37.2		176.8
Deutsche Wohnen									
Other financing***	10,091.8		40.0	-302.3**	-437.1	-82.1	-11.3		9,299.0
Deferred interest	33.1						0.3		33.4
	47,029.0	**–**	**6,803.2**	**-6,406.6**	**-2,137.4**	**-114.5**	**-7.4**	**-106.6**	**45,059.7**

* New mortgages include capitalized interest not affecting cash in the amount of € 0.5 million.
** Repayments include debt servicing not yet rendered not affecting cash in the amount of € 3.9 million.
*** This includes mortgages, convertible bonds, registered bonds and bearer bonds.

The non-derivative financial liabilities developed as follows in the previous year:

in € million	As of Jan. 1, 2021	First-time consoli-dation	New loans	Scheduled repay-ments	Unsched-uled repay-ments	Adjusted for effec-tive inter-est method	Other adjust-ments	Exchange rate dif-ferences	As of Dec. 31, 2021
Bond (US dollar)	202.0					17.3			219.3
Bond (EMTN)	15,186.5		9,500.0	-500.0		-76.2			24,110.3
Bond (EMTN Green Bond)			600.0			-3.4			596.6
Promissory note loan	49.9		224.0	-4.0	-40.0	0.1			230.0
Bridge financing			12,950.0*	-9,460.0*		-8.4			3,481.6
Mortgages	8,531.2	12.3	523.2**	-469.0***	-287.3	-24.2	-123.7	-35.8	8,126.7
Deferred interest	115.1						24.5		139.6
Deutsche Wohnen									
Other financing****		10,752.0	150.2	-61.4	-723.7	-23.8	-1.5		10,091.8
Deferred interest		25.8					7.3		33.1
	24,084.7	**10,790.1**	**23,947.4**	**-10,494.4**	**-1,051.0**	**-118.6**	**-93.4**	**-35.8**	**47,029.0**

* This includes a short-term bridge financing from Société Générale of € 1,500.0 million.
** New mortgages include capitalized interest not affecting cash in the amount of € 2.1 million.
*** Repayments include repayment grants or repayment waivers not affecting cash in the amount of € 11.4 million.
**** This includes mortgages, convertible bonds, registered bonds and bearer bonds.

The U.S. dollar bond issued in 2013 is translated at the exchange rate at the end of the reporting period in line with applicable IFRS provisions. Allowing for the hedging rate prescribed through the interest hedging transaction entered into, this financial liability would be € 50.0 million (December 31, 2021: € 36.1 million) lower than the recognized value.

The maturities and average interest rates of the nominal obligations of the liabilities to banks and the liabilities to other creditors are as follows during the fiscal year:

				Repayment of the nominal obligations is as follows:					
in € million	Nominal obligation Dec. 31, 2022	Maturity	Average interest rate	2023	2024	2025	2026	2027	from 2028
Bond (US dollar)*	185.0	2023	4.58%	185.0					
Bond (SEK)*	48.5	2024	1.02%		48.5				
Bond (SEK)*	72.7	2027	1.47%					72.7	
Bond (EMTN)*	500.0	2025	1.50%			500.0			
Bond (EMTN)*	876.8	2023	2.25%	876.8					
Bond (EMTN)*	500.0	2026	1.50%				500.0		
Bond (EMTN)*	890.4	2024	1.25%		890.4				
Bond (EMTN)*	500.0	2027	1.75%					500.0	
Bond (EMTN)*	500.0	2025	1.13%			500.0			
Bond (EMTN)*	373.2	2024	0.75%		373.2				
Bond (EMTN)*	500.0	2028	1.50%						500.0
Bond (EMTN)*	700.0	2026	1.50%				700.0		
Bond (EMTN)*	500.0	2030	2.13%						500.0
Bond (EMTN)*	500.0	2038	2.75%						500.0
Bond (EMTN)*	391.6	2023	0.88%	391.6					
Bond (EMTN)*	500.0	2025	1.80%			500.0			
Bond (EMTN)*	500.0	2029	0.50%						500.0
Bond (EMTN)*	500.0	2034	1.13%						500.0
Bond (EMTN)*	403.4	2023	0.13%	403.4					
Bond (EMTN)*	500.0	2027	0.63%					500.0	
Bond (EMTN)*	500.0	2039	1.63%						500.0
Bond (EMTN)*	389.7	2024	1.63%		389.7				
Bond (EMTN)*	500.0	2030	2.25%						500.0
Bond (EMTN)*	750.0	2026	0.63%				750.0		
Bond (EMTN)*	750.0	2030	1.00%						750.0
Bond (EMTN)*	500.0	2041	1.00%						500.0
Bond (EMTN)*	278.3	2024	0.00%		278.3				
Bond (EMTN)*	1,000.0	2027	0.38%					1,000.0	
Bond (EMTN)*	1,000.0	2029	0.63%						1,000.0
Bond (EMTN)*	1,000.0	2033	1.00%						1,000.0
Bond (EMTN)*	500.0	2041	1.50%						500.0
Bond (EMTN)*	351.9	2023	0.00%	351.9					
Bond (EMTN)*	1,250.0	2025	0.00%			1,250.0			
Bond (EMTN)*	1,250.0	2028	0.25%						1,250.0
Bond (EMTN)*	1,250.0	2032	0.75%						1,250.0
Bond (EMTN)*	750.0	2051	1.63%						750.0

in € million	Nominal obligation Dec. 31, 2022	Maturity	Average interest rate	2023	2024	2025	2026	2027	from 2028
				Repayment of the nominal obligations is as follows:					
Bond (EMTN Green Bond)*	600.0	2031	0.63%						600.0
Bond (EMTN Green Bond)*	850.0	2032	2.38%						850.0
Bond (EMTN Green Bond)*	750.0	2030	5.00%						750.0
Bond (EMTN Social Bond)*	850.0	2026	1.38%				850.0		
Bond (EMTN Social Bond)*	800.0	2028	1.88%						800.0
Bond (EMTN Social Bond)*	750.0	2027	4.75%					750.0	
Promissory note loan*	1,240.0	2029	2.07%	120.0			50.0	309.0	761.0
Mortgages**	8,464.2	2034	1.57%	784.7	1,001.8	830.9	494.3	787.5	4,565.0
Deutsche Wohnen									
Other financing***	8,993.5	2029	1.63%	466.8	201.1	1,518.2	888.3	882.5	5,036.6
	44,759.2			**3,580.2**	**3,183.0**	**5,099.1**	**4,232.6**	**4,801.7**	**23,862.6**

* Under the conditions of existing loan agreements, Vonovia is obliged to fulfill certain financial covenants, which it fulfilled.
** For a portion of the mortgages, Vonovia is obliged to fulfill certain financial covenants, which it fulfilled.
*** This includes mortgages, convertible bonds, registered bonds and bearer bonds. For a portion of the financing, Deutsche Wohnen is obliged to fulfill certain financial covenants, which it fulfilled.

In the previous year, the maturities and average interest rates of the nominal obligations were as follows:

in € million	Nominal obligation Dec. 31, 2021	Maturity	Average interest rate	2022	2023	2024	2025	2026	from 2027
				Repayment of the nominal obligations is as follows:					
Bond (US dollar)*	185.0	2023	4.58%		185.0				
Bond (EMTN)*	500.0	2022	2.13%	500.0					
Bond (EMTN)*	500.0	2025	1.50%				500.0		
Bond (EMTN)*	1,000.0	2023	2.25%		1,000.0				
Bond (EMTN)*	500.0	2022	0.88%	500.0					
Bond (EMTN)*	500.0	2026	1.50%					500.0	
Bond (EMTN)*	1,000.0	2024	1.25%			1,000.0			
Bond (EMTN)*	500.0	2022	0.75%	500.0					
Bond (EMTN)*	500.0	2027	1.75%						500.0
Bond (EMTN)*	500.0	2025	1.13%				500.0		
Bond (EMTN)*	500.0	2024	0.75%			500.0			
Bond (EMTN)*	500.0	2028	1.50%						500.0
Bond (EMTN)*	600.0	2022	0.79%	600.0					
Bond (EMTN)*	700.0	2026	1.50%					700.0	
Bond (EMTN)*	500.0	2030	2.13%						500.0
Bond (EMTN)*	500.0	2038	2.75%						500.0
Bond (EMTN)*	500.0	2023	0.88%		500.0				
Bond (EMTN)*	500.0	2025	1.80%				500.0		
Bond (EMTN)*	500.0	2029	0.50%						500.0
Bond (EMTN)*	500.0	2034	1.13%						500.0
Bond (EMTN)*	500.0	2023	0.13%		500.0				

in € million	Nominal obligation Dec. 31, 2021	Maturity	Average interest rate	Repayment of the nominal obligations is as follows: 2022	2023	2024	2025	2026	from 2027
Bond (EMTN)*	500.0	2027	0.63%						500.0
Bond (EMTN)*	500.0	2039	1.63%						500.0
Bond (EMTN)*	500.0	2024	1.63%			500.0			
Bond (EMTN)*	500.0	2030	2.25%						500.0
Bond (EMTN)*	750.0	2026	0.63%					750.0	
Bond (EMTN)*	750.0	2030	1.00%						750.0
Bond (EMTN)*	500.0	2041	1.00%						500.0
Bond (Green Bond)*	600.0	2031	0.63%						600.0
Bond (EMTN)*	500.0	2024	0.00%			500.0			
Bond (EMTN)*	1,000.0	2027	0.38%						1,000.0
Bond (EMTN)*	1,000.0	2029	0.63%						1,000.0
Bond (EMTN)*	1,000.0	2033	1.00%						1,000.0
Bond (EMTN)*	500.0	2041	1.50%						500.0
Bond (EMTN)*	500.0	2023	0.00%		500.0				
Bond (EMTN)*	1,250.0	2025	0.00%				1,250.0		
Bond (EMTN)*	1,250.0	2028	0.25%						1,250.0
Bond (EMTN)*	1,250.0	2032	0.75%						1,250.0
Bond (EMTN)*	750.0	2051	1.63%						750.0
Bridge financing	3,490.0	2022	0.65%	3,490.0					
Promissory note loan*	230.0	2025	0.12%		120.0			50.0	60.0
Mortgages**	8,142.3	2034***	1.17%***	814.5	782.9	1,016.6	734.0	502.0	4,292.3
Deutsche Wohnen									
Other financing****	9,704.1	2028***	1.33%***	279.9	744.7	202.4	1,562.0	889.2	6,025.9
	46,651.4			**6,684.4**	**4,332.6**	**3,719.0**	**5,046.0**	**3,391.2**	**23,478.2**

* Under the conditions of existing loan agreements, Vonovia is obliged to fulfill certain financial covenants, which it fulfilled.
** For a portion of the mortgages, Vonovia is obliged to fulfill certain financial covenants, which it fulfilled.
*** The calculation includes financial liabilities that will be transferred to Berlin housing companies in 2022 as part of the sale of residential units. These financial liabilities are included in the "Assets and liabilities held for sale" as at December 31, 2021.
**** This includes mortgages, convertible bonds, registered bonds and bearer bonds. For a portion of the financing, Deutsche Wohnen is obliged to fulfill certain financial covenants, which it fulfilled.

The loan repayments shown for the following years contain contractually fixed minimum repayment amounts.

Of the nominal obligations to creditors, € 12,287.4 million (December 31, 2021: € 13,060.3 million) are secured by land charges and other collateral (account pledge agreements, assignments, pledges of company shares and guarantees of Vonovia SE or other Group companies). In the event that payment obligations are not fulfilled, the securities provided are used to satisfy the claims of the banks.

Financial liabilities to banks and other creditors have an average interest rate of approximately 1.48%. The financial liabilities as a whole do not contain any significant short-term interest rate risks as they relate either to loans with long-term fixed interest rates or variable-interest liabilities that are hedged using suitable derivative financial instruments (see → **[G54] Financial Risk Management**).

Repayment of Bonds Under the European Medium-Term Notes Program (EMTN)

A bond in the amount of € 500.0 million issued in 2017 was repaid as scheduled in January 2022.

May 2022 saw the early repayment of a € 500.0 million bond from 2014 that was set to mature in July 2022.

In June 2022, a € 500.0 million bond from 2016 was repaid as scheduled.

In November 2022, Vonovia published a tender offer to buy back bonds maturing in 2023 and 2024. € 1,044.7 million relating to eight different bonds was bought back early within this context.

In December 2022, Vonovia repaid a floating rate bond from 2018 in the amount of € 600.0 million as planned.

Repayment of Bonds and Bearer Bonds of Deutsche Wohnen

Deutsche Wohnen repaid registered bonds worth € 150.0 million and a bearer bond in the amount of € 100.0 million as scheduled in January 2022.

In addition, an unscheduled repayment was made on a registered bond in the amount of € 76.3 million in February 2022.

Repayment of Secured Financing of Deutsche Wohnen

Deutsche Wohnen repaid secured financing in the amount of € 284.2 million pro rata and ahead of schedule in December 2022.

Issue of Bonds Under the European Medium-Term Notes Program (EMTN)

On March 21, 2022, Vonovia SE placed two social bonds in a total amount of € 1,650.0 million with maturities of 3.85 and 6.25 years, as well as a green bond worth € 850.0 million with a maturity of ten years. The bonds, which have a total amount of € 2,500.0 million, bear interest at a rate of 1.375%, 1.875% and 2.375%.

On March 30, 2022, Vonovia issued two variable-rate SEK bonds worth a total of SEK 1,250.0 million with maturities of two and five years that were disbursed on April 8, 2022.

On November 10, 2022, Vonovia SE issued two social and green bonds in a total amount of € 1,500.0 million with maturities of 4.5 and 8 years. The bonds bear interest at 4.75% and 5.00%.

Promissory Note Loan

On February 16, 2022, Vonovia SE issued promissory note loans of € 1,010.0 million with terms of between 5 and 30 years and an average interest rate of 1.13%.

Commercial Paper

On January 18, 2022, Vonovia SE took out a commercial paper of € 500.0 million with a maturity of 3 months. This was repaid in full on April 21, 2022.

Secured Financing

On February 25, 2022, Vonovia took out secured financing with Landesbank Baden-Württemberg in the amount of € 175.0 million with a maturity of ten years.

On April 1, 2022, Vonovia took out secured financing with Berlin Hyp in the amount of € 175.0 million with a maturity of ten years.

On April 12, 2022, Vonovia took out secured financing with Bayern LB in the amount of € 150.0 million with a maturity of ten years.

Unsecured Financing

On February 25, 2022, Vonovia SE took out an unsecured loan with Caixabank S.A. in the amount of € 142.0 million with a maturity of five years.

On February 25, 2022, Vonovia SE took out an unsecured loan with DZ Bank AG in the amount of € 250.0 million with a maturity of seven years.

Bridge Financing

The bridge facility taken out in connection with the acquisition of Deutsche Wohnen was valued at € 3,490.0 million and repaid in full as of March 1, 2022

Working Capital Facility

With an agreement dated September 30, 2021, Commerzbank, Bank of America, BNP Paribas, Deutsche Bank, ING, Morgan Stanley, Société Générale and UniCredit provided Vonovia with a working capital facility of € 2,000.0 million with an initial term of three years; on December 13, 2021, the facility was increased to € 3,000.0 million with the addition of Goldman Sachs, JPMorgan, Citibank and UBS. Citibank left the contract and was replaced by Mizuho Bank as of November 18, 2022. This credit line had not been used as of December 31, 2022.

Subsidy Loan

The European Investment Bank provided Vonovia with an unsecured loan of up to € 600.0 million on November 10, 2022.

42 Derivatives and Put Options

in € million	Dec. 31, 2021 non-current	Dec. 31, 2021 current	Dec. 31, 2022 non-current	Dec. 31, 2022 current
Derivatives and put options				
Purchase price liabilities from put options/rights to reimbursement		264.0		270.9
Cash flow hedges	12.3			
Stand-alone derivatives	53.9			
Deferred interest from derivatives		2.0		1.3
	66.2	**266.0**		**272.2**

Regarding derivative financial liabilities please refer to chapters → **[G52] Additional Financial Instrument Disclosures** and → **[G56] Cash Flow Hedges and Stand-alone Hedging Interests**.

43 Leases

Accounting Policies

IFRS 16 "Leases," which has applied as a mandatory requirement since January 1, 2019, introduces only one accounting model (right-of-use model) for lessees, based on which all leases are to be recognized in the balance sheet as a matter of principle. The distinction between operating and finance leases only remains in place for accounting as the lessor.

All contracts that give the Vonovia Group the right to control the use of an identified asset over a certain period of time in return for consideration are considered leases within the meaning of IFRS 16.

For all lease contracts that meet the definition of leases according to IFRS 16, Vonovia recognizes lease liabilities equal to the present value of the future lease payments, discounted using the term-specific incremental borrowing rate. Correspondingly, right-of-use assets are recognized in the amount of the lease liabilities, plus any advance payments or any initial direct costs.

The lease liabilities are adjusted in line with financial principles. They are increased by the periodic interest expenses and reduced by the lease payments made.

The right-of-use assets are generally recognized at amortized cost, taking depreciation and impairments into account. Right-of-use assets that meet the definition of investment properties (IAS 40) are recognized at fair value in line with the recognition and measurement rules set out in IAS 40.

Changes within the lease term or within the lease payments lead to a remeasurement of the present value and, as a result, to an adjustment of the lease liability and the right-of-use asset.

Periods resulting from extension or termination options granted on a unilateral basis are assessed on a lease-by-lease basis and are only taken into account if their use is sufficiently probable – for example, due to financial incentives.

There is an accounting option available for short-term leases and leases of low-value assets. Vonovia makes use of this option, meaning that such leases are not recognized. As far as rented IT equipment is concerned, portfolios are, in some cases, set up for leases with similar terms and a single discount rate is applied to these portfolios.

Such variable lease payments, which are not included in the measurement of the lease liabilities, as well as lease payments associated with short-term leases, with leases of low-value assets and with lease contracts that do not meet the definition of leases according to IFRS 16 are recognized as expenses on a straight-line basis over the lease term.

In addition to conventional vehicle leasing over a fixed lease term of three to five years, the Vonovia Group also leases IT equipment (IT leasing), rented residential, commercial and care home properties for subleasing (interim rental agreements), heat generation plants to supply the Group's own properties with heat (contracting), smoke detectors and heat meters (metering technology), leasing of land for the construction of owner-occupied commercial properties, as well as office buildings, office spaces, warehouse spaces and parking spaces (lease agreements). Under license agreements with public-sector institutions, Vonovia is granted the right to use public properties as storage locations or parking spaces, to lay heating pipes or cables, or to construct playgrounds. Long-term leasehold contracts, however, have the biggest impact on the company's net assets, financial position and results of operations. These involve Vonovia leasing land for the rental of constructed residential and commercial properties. These contracts generally have a term of 99 years.

Development of Right-of-use Assets

in € million	Dec. 31, 2021	Dec. 31, 2022
Right-of-use assets		
Leasehold contracts	1,685.3	2,016.8
Interim rental agreements	3.8	3.0
Right-of-use assets within investment properties	**1,689.1**	**2,019.8**
Leasing of land for the construction of owner-occupied commercial properties	27.4	30.9
Lease agreements	45.1	41.7
Contracting	56.8	91.8
Vehicle leases	4.8	4.7
License agreements	0.5	0.5
Leases of IT equipment	2.1	1.5
Metering technology	38.2	22.6
Right-of-use assets within property, plant and equipment	**174.9**	**193.7**
	1,864.0	**2,213.5**

As of December 31, 2022, the right-of-use assets resulting from leases amount to € 2,213.5 million (2021: € 1,864.0 million).

The majority of the right-of-use assets amounting to € 2,019.8 million is reported under investment properties and does not only result from interim lease agreements (residential and commercial properties) and agreements on subleased care home properties (€ 3.0 million), but mainly from leasehold contracts (€ 2,016.8 million). The other right-of-use assets totaling € 193.7 million are reported under property, plant and equipment and mainly include right-of-use assets resulting from heat contracting (€ 91.8 million), concluded lease agreements (€ 41.7 million), the leasing of land for the construction of owner-occupied commercial properties (€ 30.9 million), contracts connected with leased metering technology (€ 22.6 million) and vehicle leases (€ 4.7 million).

Development of Lease Liabilities

in € million	Dec. 31, 2021 Due within one year	Dec. 31, 2021 Due in 1 to 5 years	Dec. 31, 2021 Due after 5 years	Dec. 31, 2022 Due within one year	Dec. 31, 2022 Due in 1 to 5 years	Dec. 31, 2022 Due after 5 years
Lease liabilities						
Leasehold contracts (IAS 40)	11.5	40.3	446.1	12.2	39.5	430.6
Interim rental agreements	1.4	2.6	0.0	1.4	1.7	–
Leasing of land for the construction of owner-occupied commercial properties	0.1	0.5	27.4	0.1	0.6	31.3
Lease agreements	10.4	23.1	11.8	10.3	21.3	10.7
Contracting	11.8	32.1	14.1	11.4	40.1	41.8
Vehicle leases	2.2	2.6	–	2.2	2.5	–
License agreements	0.0	0.0	0.5	–	–	0.5
Leases of IT equipment	1.2	1.0	–	0.7	0.8	–
Metering technology	5.6	19.9	12.8	3.2	12.4	7.2
	44.2	**122.1**	**512.8**	**41.5**	**118.9**	**522.1**

As of December 31, 2022, the lease liabilities amount to € 682.5 million (2021: € 679.1 million).

The year-on-year increase in lease liabilities of € 3.4 million is due primarily to extended heating supply contracts (€ +35.4 million) and newly concluded leases, including € 5.9 million in connection with the office building for the customer service department in Dresden that was leased in January 2022 (rental agreements). Lower lease liabilities from leasehold contracts (€ -15.6 million, largely due to the disposal of real estate in the first quarter of 2022) and from leased metering technology (€ -15.5 million, largely for smoke alarms) had the opposite effect.

Totaling € 522.1 million, the majority of the lease liabilities recognized as of December 31, 2022, is due after more than five years. Of this amount, € 430.6 million is attributable to lease liabilities from leasehold contracts. € 41.5 million is due within the next year. € 12.2 million of this amount is attributable to leasehold contracts.

The following table shows the development of the right-of-use assets reported under property, plant and equipment:

in € million	Carrying amount of right-of-use assets Jan. 1, 2022	Additions 2022	Depreciation 2022	Carrying amount of right-of-use assets Dec. 31, 2022	Interest expenses 2022
Leasing of land for the construction of owner-occupied commercial properties	27.4	4.0	-0.4	30.9	0.8
Lease agreements	45.1	16.4	-12.2	41.7	0.4
Contracting	56.8	49.4	-12.2	91.8	1.3
Vehicle leases	4.8	2.7	-2.5	4.7	0.0
License agreements	0.5	0.0	-0.0	0.5	0.0
Leases of IT equipment	2.1	1.7	-1.0	1.5	0.0
Metering technology	38.2	0.8	-5.4	22.6	0.2
	174.9	**75.0**	**-33.7**	**193.7**	**2.7**

in € million	Carrying amount of right-of-use assets Jan. 1, 2021	Additions 2021	Depreciation 2021	Carrying amount of right-of-use assets Dec. 31, 2021	Interest expenses 2021
Leasing of land for the construction of owner-occupied commercial properties	27.3	0.3	-0.4	27.4	0.8
Lease agreements	22.9	35.1	-10.2	45.1	0.2
Contracting	15.9	47.4	-6.1	56.8	0.6
Vehicle leases	2.6	5.0	-2.7	4.8	0.0
License agreements	0.6	0.0	-0.1	0.5	0.0
Leases of IT equipment	3.0	1.4	-1.3	2.1	0.0
Metering technology		40.4	-1.2	38.2	0.0
	72.3	**129.6**	**-22.0**	**174.9**	**1.6**

The interest expenses recognized in the 2022 fiscal year resulting from leases pursuant to IFRS 16 amounted to € 17.6 million in total (2021: € 15.8 million), mainly from leasehold contracts (€ 14.9 million).

In the 2022 fiscal year, a total of 161 lease contracts (2021: 279) were classified as short-term leases and thus were not recognized in line with the accounting option available. The corresponding expenses, recognized in the 2022 fiscal year, amounted to € 0.6 million (2021: € 0.7 million). Expenses relating to leases of low-value assets amounting to € 1.2 million in the 2022 fiscal year (2021: € 1.2 million) mostly result from leased bicycles/e-bikes. Expenses totaling € 33.1 million were incurred in connection with variable lease payments in the 2022 fiscal year (2021: € 7.2 million), mainly due to increased energy costs under heat supply contracts. Variable lease payments have not been included in the measurement of lease liabilities.

In addition to variable lease payments as well as payments resulting from short-term leases and low-value assets, each included in the cash flow from operating activities, interest payments and repayments of lease liabilities totaling € 59.2 million were incurred in the 2022 fiscal year (2021: € 43.1 million). Thus, the total cash outflow for leases in the reporting year amounted to € 94.1 million (2021: € 52.2 million).

Total income from subleasing, mostly from subleasing of right-of-use assets in connection with rented residential, commercial and care home properties, amounts to € 14.4 million (2021: € 9.4 million). As of the reporting date, there were no significant non-cancelable subleases on the Spree-Bellevue property.

The loss arising from the rental of the sold Spree-Bellevue property (sale and leaseback transaction) in fiscal year 2022 amounted to € 1.2 million (2021: loss of € 0.9 million). This does not have any material impact on the Group's cash flows.

44 Liabilities to Non-controlling Interests

Accounting Policies

Liabilities to non-controlling interests, which include obligations from the guaranteed dividend agreements, in particular, are stated at fair value when they are recognized for the first time. The fair value is, in principle, determined by the value of the respective company; if a contractually agreed minimum purchase price is higher than this amount, this purchase price is recognized.

The liabilities to non-controlling interests relate especially to the obligations to pay several guaranteed dividends under valid profit-and-loss transfer agreements or co-investor agreements in an amount of € 235.9 million (December 31, 2021: € 240.5 million).

45 Financial Liabilities from Tenant Financing

Accounting Policies

Financial liabilities from tenant financing include tenant financing contributions. The financing contributions relate to the contributions collected from tenants in Austria for subsidized apartments. These are reimbursed upon the termination of the rental contract following the deduction of a depreciation amount. The amount refunded can be collected again relating to new tenants. As these are generally rental contracts that can be terminated at any time, these liabilities are reported as current liabilities.

Financial liabilities from tenant financing also include maintenance and improvement contributions deposited by tenants (EVB). These contributions are paid by tenants in Austria to finance the costs associated with modernization work. The payment depends on the age of the building and must be used up for modernization work within 20 years of their receipt. Otherwise, the contributions have to be refunded to the tenant.

First-time recognition is at fair value. Subsequent measurement is at amortized cost.

The financial liabilities from tenant financing as of the reporting date include € 111.9 million (December 31, 2021: € 112.0 million) in tenant financing contributions. Financial liabilities from tenant financing also include € 43.2 million in maintenance and improvement contributions deposited by tenants (EVB) (December 31, 2021: € 45.5 million).

46 Other Liabilities

	Dec. 31, 2021		Dec. 31, 2022	
in € million	non-current	current	non-current	current
Advance payments received	–	101.2	–	40.3
Miscellaneous other liabilities	5.2	127.6	27.9	90.9
	5.2	**228.8**	**27.9**	**131.2**

Section (F): Corporate Governance Disclosures

47 Related Party Transactions

Vonovia had business relationships with unconsolidated investees and subsidiaries in the 2022 fiscal year. These transactions resulted from the normal exchange of deliveries and services and are shown in the table below:

	Provided services		Purchased services		Receivables		Liabilities		Advance payments	
in € million	**2021**	**2022**	**2021**	**2022**	**Dec. 31, 2021**	**Dec. 31, 2022**	**Dec. 31, 2021**	**Dec. 31, 2022**	**Dec. 31, 2021**	**Dec. 31, 2022**
Associated companies	–	2.3	28.8	25.7	657.9	646.5	0.9	0.1	126.9	290.1
Joint ventures	–	6.3	–	265.8	148.6	173.1	–	6.3	8.9	17.3
Other non-consolidated subsidiaries	–	0.0	–	–	1.8	1.8	–	–	–	–
	–	**8.6**	**28.8**	**291.5**	**808.3**	**821.4**	**0.9**	**6.4**	**135.8**	**307.4**

As of December 31, 2022, Vonovia's significant business relations were with the QUARTERBACK Group. As of December 31, 2022, loan receivables were recognized in the amount of € 801.9 million (December 31, 2021: € 806.5 million), with € 692.2 million repayable in 12 months and € 109.7 million in 24 months. The average interest rate for the loans is 6.6%.

There are real estate project sales of the QUARTERBACK Group to Vonovia in the amount of € 876.0 million (December 31, 2021: € 876.0 million), for which Vonovia had made advance payments of € 307.4 million in total as of December 31, 2022 (December 31, 2021: € 135.8 million). In connection with agency services contracted by the QUARTERBACK Group in the amount of € 24.2 million (2021: € 16.6 million), Vonovia has outstanding balances on liabilities of € 0.1 million as of December 31, 2022 (December 31, 2021: € 0.9 million). Services totaling € 0.2 million (2021: € - million) were rendered to the QUARTERBACK Group in the reporting period.

As of December 31, 2022, there is also a guarantee to secure non-current loan liabilities of the QUARTERBACK Group in the amount of € 12.3 million (December 31, 2021: € 12.3 million).

Vonovia also has outstanding balances on liabilities of € 0.2 million vis-à-vis B&O Service Berlin GmbH, Berlin, as of December 31, 2022 (December 31, 2021: € - million) for services purchased in the period leading up to December 31, 2022 in the amount of € 119.7 million (2021: € - million).

As of December 31, 2022, Vonovia has outstanding balances on receivables of € 0.6 million (December 31, 2021: € - million) vis-à-vis G+D Gesellschaft für Energiemanagement mbH, Magdeburg. In the reporting period, services worth € 3.7 million (2021: € - million) were provided to G+D Gesellschaft für Energiemanagement mbH, Magdeburg, while services worth € 144.2 million (2021: € - million) were purchased.

There were also loan receivables of € 13.5 million from OLYDO Projektentwicklungsgesellschaft mbH, Berlin, as of December 31, 2022 (December 31, 2021: € 2.1 million) which are to be repaid within two months of the reporting date. The loan has a fixed interest rate of 3%.

At Vonovia, the individuals in key positions pursuant to IAS 24 include the members of the Management Board and the Supervisory Board of Vonovia SE.

The emoluments to key management personnel, which are subject to a disclosure requirement under IAS 24, include the remuneration of the active members of the Management Board and Supervisory Board.

The active members of the Management Board and Supervisory Board received the following remuneration:

in € million	2021	2022
Short-term benefits (without share-based payment)	8.0	10.2
Post-employment benefits	2.4	2.6
Termination benefits	0.6	–
Share-based payment	4.4	-0.8
	15.4	**12.0**

The service cost resulting from provisions for pensions for the active Management Board members is reported under post-employment benefits. The disclosure on share-based payments is based on the expenses in the fiscal year, which are also reported in chapter → **[F48] Share-based Payments**.

The Management Board and Supervisory Board members were not granted any loans or advances.

48 Share-based Payments

Accounting Policies

The **obligations arising from share-based payments** are calculated using standard valuation methods based on option pricing models.

Share-based payments settled through equity instruments are recognized at the grant date at the fair value of the equity instruments vested by that date. The fair value of the obligation is therefore recognized as personnel expenses proportionally over the vesting period and is offset directly against the capital reserves.

The cash-settled share-based payments are shown under other provisions and remeasured at fair value at each reporting date. The expenses are also recognized as personnel expenses over the vesting period (see → **[E39] Provisions**).

Vonovia Management Board

As part of the LTIP in place since 2015, the Management Board members are granted a fixed number of phantom stocks (performance share units or "PSU") annually, which are paid out at the end of a four-year performance period based on the target achievement level for targets defined at the beginning of the performance period and on the development of the share price. The pre-defined target achievement level is based on the targets Relative Total Shareholder Return (RTSR), the development of EPRA Net Tangible Assets (NTA) per share, the development of the Group FFO per share, and the Sustainability Performance Index (SPI), with each target weighted equally at 25%. As a result, this LTIP constitutes a form of cash-settled share-based payment pursuant to IFRS 2; in turn, the payout claim can be lost entirely if the defined target achievement level has not been reached.

The value of the total phantom stocks that had been granted but not paid out from the LTIP as of December 31, 2022, was calculated by an external expert based on recognized actuarial principles. The obligation disclosed as of the reporting date breaks down as follows:

Tranche in €	End of vesting period	Dec. 31, 2022
2019–2022	Dec. 31, 2022	2,778,945
2020–2023	Dec. 31, 2023	1,935,710
2021–2024	Dec. 31, 2024	1,106,812
2022–2025	Dec. 31, 2025	820,936

The LTIP program resulted in expenses pursuant to IFRS 2 totaling € -0.8 million in the 2022 reporting year (2021: € 5.1 million).

Management Board of Deutsche Wohnen

The members of the Management Board of Deutsche Wohnen are granted an annual LTIP over a four-year performance period, the amount of which depends on the achievement of specific financial targets and, in general, also on the achievement of specific sustainability targets. Target achievement is determined using the financial performance criteria DW-NTA per share and DW-Group FFO per share. The two financial performance criteria create incentives for a long-term increase in the value of the company. In general, target achievement is also determined on the basis of sustainability criteria (ESG targets). This means that the LTIP constitutes a form of cash-settled payment. Conversely, the payment claim can be lost entirely if the defined target achievement level has not been reached.

The value of the liability recognized as of December 31, 2022 was determined by an external appraiser using recognized actuarial methods and is composed as follows:

Tranche in €	End of vesting period	Dec. 31, 2022
2022–2025	Dec. 31, 2025	233,243

The LTIP program resulted in expenses pursuant to IFRS 2 totaling € 0.2 million in the 2022 reporting year (2021: € -0.1 million).

Vonovia Executives Below Management Board Level

The LTIP was implemented for the first level of management in 2016. This LTIP is based largely on the LTIP in place for the Management Board, also regarding the performance objectives and the calculation of the objective values with regard to the minimum value, the "target achievement value," and the maximum value.

The value of the total phantom stocks that had been granted but not paid out from the LTIP as of December 31, 2022, was calculated by an external expert based on recognized actuarial principles. The obligation disclosed as of the reporting date breaks down as follows:

Tranche in €	End of vesting period	Dec. 31, 2022
2019–2022	Dec. 31, 2022	1,164,286
2020–2023	Dec. 31, 2023	701,651
2021–2024	Dec. 31, 2024	393,109
2022–2025	Dec. 31, 2025	197,269

The LTIP program results, in accordance with IFRS, in expenses of € -0.5 million in the 2022 reporting year (2021: € 1.7 million).

Deutsche Wohnen Executives Below Management Board Level

The LTIP for the first level of management, which was based largely on the LTIP in place for the Management Board of Deutsche Wohnen, also regarding the identical performance objectives and the calculation of the objective values with regard to the minimum value, the "target achievement value," and the maximum value, was transitioned to the STIP in 2022 or was otherwise contractually replaced. This means that this form of share-based payment will no longer apply to executives below Management Board level in the future.

The LTIP program resulted in expenses pursuant to IFRS 2 totaling € 0.0 million in the 2022 reporting year (2021: € - million).

Employees

The Group works council agreement "Employee Share Program" was concluded in 2014. The program started in the 2015 calendar year, with the shares granted subject to a vesting period of six months. The costs associated with the securities deposit account are borne by Vonovia. Shares with a value of between € 90 and € 360 at the most are granted to employees, depending on their gross annual salary, without the employees having to make any contribution of their own.

The new employee share program results in total expenses of € 2.4 million in the 2022 reporting year (2021: € 2.4 million), which have been offset directly against the capital reserves.

49 Remuneration

Remuneration of the Supervisory Board

The members of the Supervisory Board received total remuneration of € 2.5 million during the 2022 fiscal year (2021: € 1.8 million) for their work.

Total Remuneration of the Management Board

The total remuneration paid to the members of the Management Board comprises the following:

Total remuneration of the Management Board in €	Total remuneration	
	2021	**2022**
Fixed remuneration and short-term variable remuneration	7,186,465	9,150,872
Total long-term variable share-based remuneration	4,828,565	6,807,249
of which		
2021–2024	4,828,565	-
2022–2025	-	6,807,249
(number of shares)	88,524	138,742
Total remuneration	**12,015,030**	**15,958,121**

The remuneration paid to the Management Board members includes the remuneration for all mandates at Vonovia Group companies, subsidiaries and participating interests.

Remuneration of Former Management Board Members and Their Surviving Dependents

Total remuneration of former Management Board members and their surviving dependents amounts to € 0.4 million for the 2022 fiscal year (2021: € 0.9 million).

The defined benefit obligation (DBO) to former members of the Management Board and their surviving dependents amounts to € 14.8 million (2021: € 20.5 million).

50 Auditors' Fees

In the fiscal year, the following fees (including expenses and excluding VAT) have been credited for the services rendered by the Group auditors KPMG Wirtschaftsprüfungsgesellschaft:

in € million	2021	2022
Audits	8.4	10.4
Other confirmation services	3.1	1.3
	11.5	**11.7**

All of the services rendered were consistent with the activities performed as the auditor of the annual financial statements and consolidated financial statements of Vonovia SE.

The fee paid for auditing services performed by KPMG AG Wirtschaftsprüfungsgesellschaft relates to the audit of the consolidated financial statements and annual financial statements of Vonovia SE as well as to various audits of annual financial statements and a review of one set of annual financial statements of Group companies. The consolidated interim financial statements were reviewed and the financial statements were audited in accordance with audit standard IDW PS 490.

The fees for other confirmation services comprise all confirmation services that are not services relating to the audit and are not used in the context of the audit. These mainly include reviews of reconciliations on the interest threshold based on audit standard IDW PS 900, business audits pursuant to ISAE 3000 relating to the non-financial report, various housing assistance reports and reports on the appropriation of loans granted by the German government-owned development bank KfW. Other confirmation services also include services associated with the issue of comfort letters and the issue of valuation certificates.

51 Declaration of Conformity with the German Corporate Governance Code

In December 2022, the Management Board and the Supervisory Board of Vonovia SE and Deutsche Wohnen issued a Declaration of Conformity with the recommendations of the German Corporate Governance Code in accordance with Section 161 of the German Stock Corporation Act (AktG) and made it permanently available on the **Vonovia** and **Deutsche Wohnen** websites.

Section (G): Additional Financial Management Disclosures

52 Additional Financial Instrument Disclosures

Measurement categories and classes:

in € million	Carrying amounts Dec. 31, 2022
Assets	
Cash and cash equivalents	
Cash on hand and deposits at banking institutions	1,101.8
Money market funds	200.6
Trade receivables	
Receivables from the sale of properties	47.2
Receivables from property letting	44.9
Other receivables from trading	41.3
Receivables from the sale of real estate inventories	196.8
Financial assets	
Investments valued at equity	240.1
Finance lease receivables	23.7
Loans to other investments	33.1
Other non-current loans	11.5
Other non-current loans to associates and joint ventures	825.9
Non-current securities	5.5
Other investments	398.6
Derivative financial assets	
Cash flow hedges	115.1
Stand-alone interest rate swaps and interest rate caps	99.8
Liabilities	
Trade payables	568.5
Non-derivative financial liabilities	45,059.7
Derivatives and put options	
Purchase price liabilities from put options/rights to reimbursement	270.9
Cash flow hedges	1.3
Lease liabilities	682.5
Liabilities from tenant financing	155.1
Liabilities to non-controlling interests	235.8

Amounts recognized in balance sheet in accordance with IFRS 9						
Amortized cost	Fair value affecting net income	Fair value recognized in equity with reclassification	Fair value recognized in equity without reclassification	Amounts recognized in balance sheet in acc. with IAS 28/IFRS 16	Fair value Dec. 31, 2022	Fair value hierarchy level
1,101.8					1,101.8	1
200.6					200.6	2
47.2					47.2	2
44.9					44.9	2
41.3					41.3	2
196.8					196.8	2
				240.1		n.a.
				23.7		n.a.
33.1					33.2	2
121.2					121.2	2
716.2					716.2	2
			5.5		5.5	1
			398.6		398.6	2
	-10.1	125.2			115.1	2
	99.8				99.8	2
568.5					568.5	2
45,059.7					37,783.4	2
270.9					189.6	3
	1.3				1.3	2
				682.5		n.a.
155.1					155.1	2
235.8					235.8	2

Measurement categories and classes:

in € million	Carrying amounts Dec. 31, 2021
Assets	
Cash and cash equivalents	
Cash on hand and deposits at banking institutions	1,134.0
Money market funds	298.8
Trade receivables	
Receivables from the sale of properties	104.6
Receivables from property letting	48.6
Other receivables from trading	32.7
Receivables from the sale of real estate inventories	264.0
Financial assets	
Investments valued at equity	425.3
Finance lease receivables	23.7
Other current financial receivables from financial transactions*	499.6
Loans to other investments	33.2
Other non-current loans	511.8
Other non-current loans to associates and joint ventures	563.1
Non-current securities	5.2
Other investments	377.0
Derivatives and put options	
Cash flow hedges (cross currency swaps)	35.8
Stand-alone interest rate swaps and interest rate caps	30.6
Liabilities	
Trade payables	449.8
Non-derivative financial liabilities	47,029.0
Derivative financial liabilities	
Purchase price liabilities from put options/rights to reimbursement	264.0
Stand-alone interest rate swaps and interest rate caps	53.9
Cash flow hedges	14.3
Lease liabilities	679.1
Liabilities from tenant financing	157.5
Liabilities to non-controlling interests	240.5

* This includes time deposits and short-term investments in highly liquid money market funds with an original maturity of more than three months.

The section below provides information on the financial assets and financial liabilities not covered by IFRS 9:

> Employee benefits in accordance with IAS 19: gross presentation of right to reimbursement arising from transferred pension obligations in the amount of € 2.6 million (December 31, 2021: € 3.5 million).

> Amount by which the fair value of plan assets exceeds the corresponding obligation of € 1.6 million (December 31, 2021: € 1.0 million).

> Provisions for pensions and similar obligations: € 512.5 million (December 31, 2021: € 684.5 million).

	Amounts recognized in balance sheet in accordance with IFRS 9						
	Amortized cost	Fair value affecting net income	Fair value recognized in equity with reclassification	Fair value recognized in equity without reclassification	Amounts recognized in balance sheet in acc. with IFRS 16/IAS 28	Fair value Dec. 31, 2021	Fair value hierarchy level
	1,134.0					1,134.0	1
	298.8					298.8	2
	104.6					104.6	2
	48.6					48.6	2
	32.7					32.7	2
	264.0					264.0	2
					425.3		n.a.
					23.7		n.a.
	499.6					499.6	2
	33.2					54.8	2
	511.8					511.8	2
	563.1					563.1	2
				5.2		5.2	1
				377.0		377.0	2
		-14.0	49.8			35.8	2
		30.6				30.6	2
	449.8					449.8	2
	47,029.0					47,596.5	2
	264.0					264.0	3
		53.9				53.9	2
		11.4	2.9			14.3	2
					679.1		n.a.
	157.5					157.5	2
	240.5					240.5	2

The following table shows the assets and liabilities that are recognized in the balance sheet at fair value and their classification according to the fair value hierarchy:

in € million	Dec. 31, 2022	Level 1	Level 2	Level 3
Assets				
Investment properties	92,300.1			92,300.1
Financial assets				
Non-current securities	5.5	5.5		
Other investments	398.6		398.6	
Assets held for sale				
Investment properties (contract closed)	70.8		70.8	
Derivative financial assets				
Cash flow hedges	115.1		115.1	
Stand-alone interest rate swaps and caps	99.8		99.8	
Liabilities				
Derivative financial liabilities				
Cash flow hedges	1.3		1.3	
Stand-alone interest rate swaps and caps	-		-	

in € million	Dec. 31, 2021	Level 1	Level 2	Level 3
Assets				
Investment properties	94,100.1			94,100.1
Financial assets				
Non-current securities	5.2	5.2		
Other investments	377.0		377.0	
Assets held for sale				
Investment properties (contract closed)	1,661.5		1,661.5	
Derivative financial assets				
Cash flow hedges (cross currency swaps)	35.8		35.8	
Stand-alone interest rate swaps and caps	30.6		30.6	
Liabilities				
Derivative financial liabilities				
Cash flow hedges	14.3		14.3	
Stand-alone interest rate swaps and caps	53.9		53.9	

In general, Vonovia measures its investment properties on the basis of the discounted cash flow (DCF) methodology (Level 3). The material valuation parameters and valuation results can be found in chapter → **[D28] Investment Properties**.

The investment properties classified as assets held for sale are recognized at the time of their transfer to assets held for sale at their new fair value, the agreed purchase price (Level 2).

No financial instruments were reclassified to different hierarchy levels as against the comparative period.

Securities and shares in listed companies included in other investments are generally measured using the quoted prices in active markets (Level 1).

All investments in equity instruments that do not relate to associates are measured at fair value in other comprehensive income. The Group's primary aim is to hold its investments in equity instruments in the long term for strategic purposes. Measurement is consistent with Level 2 as the expected cash flows do not involve any considerable estimation uncertainties as the business model can be planned based on the contractual agreements, and discounting can use the same approach as that used for other financial instruments.

For the measurement of financial instruments, cash flows are initially calculated and then discounted. In addition to the tenor-specific EURIBOR/STIBOR rates (3M; 6M), the respective credit risk is taken as a basis for discounting. Depending on the expected cash flows, either Vonovia's own credit risk or the counterparty risk is taken into account in the calculation.

Due to the current interest rate environment (and the return to more positive market values as a result), counterparty risk premiums were relevant for the interest rate swaps in the consolidated financial statements alongside Vonovia's own credit risk. As with Vonovia's own risk, they are derived from rates observable on the capital markets and ranged from 0 to 230 basis points, depending on the residual maturities. Vonovia's own risk premiums were trading at between 25 and 280 basis points on the same cut-off date, depending on the maturities. Regarding the positive market values of the cross currency swaps, a counterparty risk of -20 basis points was taken into account.

As part of the valuation of the cross currency swaps, the USD cash flows are converted into EUR using the EUR/USD FX forward curve, after which all EUR cash flows are discounted using the 6M EURIBOR curve (Level 2).

The fair values of the cash and cash equivalents, trade receivables and other financial receivables approximate their carrying amounts at the reporting date owing to their mainly short maturities. The amount of the estimated impairment loss on cash and cash equivalents was calculated based on the losses expected over a period of twelve months. It was determined that the cash and cash equivalents have a low risk of default due to the external ratings and short residual maturities and that there is no need for any material impairment of cash and cash equivalents.

The fair value of the purchase price liabilities from put options/rights to reimbursement granted to minority shareholders is generally based on the going concern value of the respective company; if a contractually agreed minimum purchase price is higher than this amount, this purchase price is recognized (Level 3). The unobservable valuation parameters may fluctuate depending on the going concern values of these companies. However, a major change in value is not likely, as the business model is very predictable.

in € million	From interest	Income from other non-current loans	Dividends from other investments	From subsequent measurement: Impairment losses	From subsequent measurement: Expected credit loss for other non-current loans to associates	From subsequent measurement: Derecognized receivables	From subsequent measurement: Derecognized liabilities	Financial result affecting income 2022	Measurement of cash flow hedges	Measurement of financial instruments categorized as equity instruments	Total financial result 2022
2022											
Debt instruments carried at (amortized) cost	110.7	50.1	–	-25.7	-24.1	-2.5	–	108.5	–	–	108.5
Derivatives measured at FV through P&L with reclassification	141.8	–	–	–	–	–	–	141.8	–	–	141.8
Debt instruments measured at FVOCI with reclassification	–	–	–	–	–	–	–	–	72.9	–	72.9
Equity instruments measured at FVOCI without reclassification	–	–	21.2	–	–	–	–	21.2	–	-17.1	4.1
Financial liabilities measured at (amortized) cost	-480.1	–	–	–	–	–	-0.2	-480.3	–	–	-480.3
	-227.6	**50.1**	**21.2**	**-25.7**	**-24.1**	**-2.5**	**-0.2**	**-208.8**	**72.9**	**-17.1**	**-153.0**

in € million	From interest	Income from other non-current loans	Dividends from other investments	From subsequent measurement: Impairment losses	From subsequent measurement: expected credit loss for other non-current loans to associates	From subsequent measurement: Derecognized receivables	From subsequent measurement: Derecognized liabilities	Financial result affecting income 2021	Measurement of cash flow hedges	Measurement of financial instruments categorized as equity instruments	Total financial result 2021
2021											
Debt instruments carried at (amortized) cost	21.1	13.1	–	-23.3	-15.9	-2.5	–	-7.5	–	–	-7.5
Derivatives measured at FV through P&L with reclassification	-0.2	–	–	–	–	–	–	-0.2	–	–	-0.2
Debt instruments measured at FVOCI with reclassification	–	–	–	–	–	–	–	–	26.1	–	26.1
Equity instruments measured at FVOCI without reclassification	–	–	27.7	–	–	–	–	27.7	–	81.1	108.8
Financial liabilities measured at (amortized) cost	-385.4	–	–	–	–	–	3.5	-381.9	–	–	-381.9
	-364.5	**13.1**	**27.7**	**-23.3**	**-15.9**	**-2.5**	**3.5**	**-361.9**	**26.1**	**81.1**	**-254.7**

53 Information on the Consolidated Statement of Cash Flows

The statement of cash flows shows how Vonovia's cash has changed during the reporting year as a result of cash inflows and outflows. In accordance with IAS 7 (Statement of Cash Flows), a distinction is made between changes in cash flow from operating activities, investing activities and financing activities.

The cash flow from operating activities is determined from the profit for the period using the indirect method, the profit for the period being adjusted for effects of transactions that are not cash-effective, any deferrals or accruals of past or future operating cash receipts or payments as well as items of income or expense associated with investing or financing cash flows.

The effects of changes in the scope of consolidation are shown separately. Therefore, direct comparison with the corresponding changes in the items of the consolidated balance sheet is not possible.

The proceeds from the disposal of intangible assets, property, plant and equipment and investment properties are shown in cash flow from investing activities.

Exercising the IAS 7 option, interest received is shown under cash flow from investing activities and interest paid is shown under cash flow from financing activities.

The item "Payments for acquisition of investment properties" mainly shows expenses for modernization measures.

54 Financial Risk Management

In the course of its business activities, Vonovia is exposed to various financial risks. The Group-wide financial risk management system aims to identify any potentially negative impact on the financial position of the Group early on and take suitable measures to limit this impact. For the structure and organization of financial risk management, we refer to the management report (see → **Risk Management Structure and Instruments**). This system was implemented on the basis of Group guidelines, which were approved by the Management Board and which are continually reviewed. The risks associated with financial instruments and the corresponding risk management are described in detail as follows:

Market Risks

Currency Risks

The cash-effective currency risks arising in connection with the still to be issued USD bond were eliminated by the contracting of cross currency swaps. Liquidity transfers from the German subgroup to Swedish subsidiaries are usually secured through the conclusion of foreign currency forwards. Nevertheless, currency fluctuations are expected to result from financing relationships. By way of example, Vonovia SE issued two bonds denominated in Swedish krona in a total amount of SEK 1,250.0 million on March 30, 2022. Based on the exchange rate as of December 31, 2022, a -5 % change in the value of the Swedish krona against the euro would result in currency gains of € 1.1 million, while a change of +5 %would result in a currency loss of € 1.1 million. Vonovia is subject to no further material currency risks in the scope of its usual business activities.

Interest Rate Risks

The investments measured at fair value are subject, in particular, to a price risk resulting from fluctuations in expected returns, market interest rates and expectations based on the operating business development of the investments. Other investments are long-term investments that are closely related to Vonovia's operating business areas. As a result, short-term realization of the price fluctuations cannot generally be assumed.

In the course of its business activities, Vonovia is exposed to cash-effective interest rate risks as a result of floating-rate debt as well as new and follow-on loans. Within this context, the interest markets are continually monitored by the Finance and Treasury department.

Its observations are incorporated into the financing strategy.

As part of its financing strategy, Vonovia uses derivative financial instruments, in particular interest rate swaps and caps, to limit or manage interest rate risks. Vonovia's policies permit the use of derivatives only if they are associated with underlying assets or liabilities, contractual rights or obligations and planned, highly probable transactions.

A sensitivity analysis for cash flow hedges is provided under chapter → **[G56] Cash Flow Hedges and Stand-alone Hedging Instruments**.

Other Risks

Vonovia also acts as an energy supply company through its subsidiary Vonovia Energie Service GmbH. Contracts used for procurement and in the context of sales only constitute financial instruments under IFRS 9 to an insignificant extent. However, because the contracts used are managed in a comparable manner, this business area is also presented below. Due in particular to the current strong fluctuations in energy procurement conditions, there is a risk that planned energy procurement prices may not be realized. This indirectly results in the risk of the energy sales business becoming loss-making. Vonovia hedges against these risks with a broad range of risk management instruments, which, in addition to a structured multi-year procurement strategy and systematic risk monitoring, also offers the option of price adjustments during the year. This has significantly reduced market price risks in the current highly dynamic situation on the energy procurement markets.

For all material equity instruments categorized at FVOCI, a 5% increase (reduction) in the share price would have increased (reduced) total equity by € 19.5 million (€ -19.5 million) (previous year: € 18.6 million (€ -18.6 million).

Credit Risks

Vonovia is exposed to a default risk resulting from the potential failure of a counterparty to fulfill its part of the contract. In order to minimize risks, financial transactions are generally only executed with banks and partners whose credit rating has been found by a rating agency to be at least equivalent to Vonovia's. These counterparties are assigned volume limits set by the Management Board. The counterparty risks are managed and monitored centrally by the Finance and Treasury department.

Liquidity Risks

The companies of Vonovia are financed by borrowings to a notable degree. Due to their high volume, the loans are in some cases exposed to a considerable refinancing risk. The liquidity risks arising from financing transactions with high volumes (volume risks) have become apparent in the financial sector, especially in the wake of the financial crisis. In order to limit these risks, Vonovia is in constant contact with many different market players, continuously monitors all financing options available on the capital and banking markets and uses these options in a targeted manner. Moreover, Vonovia subjects its existing financings to an early review prior to the respective final maturity date in order to ensure refinancing.

Under the conditions of existing loan agreements, Vonovia is obliged to fulfill certain financial covenants such as the debt service coverage ratio or debt-equity ratio. If financial covenants are violated, the breach is not rectified within so-called cure periods and no mutually acceptable agreement can be reached with the lenders, the financing may be restructured and the cost structure changed. Should all commonly practiced solutions be unsuccessful, the lenders could call in the loan. The fulfillment of these financial covenants is continually monitored by the Finance and Treasury department on the basis of current actual figures and budgetary accounting.

In order to ensure its ability to pay at all times, Vonovia has put a system-supported cash management system in place. This system monitors and optimizes Vonovia's cash flows on an ongoing basis and provides the Management Board with regular reports on the Group's current liquidity situation. Liquidity management is supplemented by short-term rolling, monthly liquidity planning for the current fiscal year, of which the Management Board is also promptly notified. In order to minimize credit risks, large amounts of cash on hand are avoided wherever possible. In the event that large reserves are necessary on a short-term basis due to pending investments or refinancing, these are distributed among various instruments and banking partners with good credit ratings.

The following table shows the forecast for undiscounted cash flows of the non-derivative financial liabilities and derivative financial instruments for the 2022 reporting year. The loan repayments shown for the following years contain only contractually fixed minimum repayment amounts:

		2023		2024		2025 to 2029	
in € million	Carrying amount as of Dec. 31, 2022	Interest	Repayment	Interest	Repayment	Interest	Repayment
Non-derivative financial liabilities							
Liabilities to banks	18,107.8	213.2	1,344.5	241.2	1,163.6	797.0	9,085.1
Liabilities to other creditors	26,741.7	242.2	2,235.7	385.1	2,019.4	1,461.0	13,492.6
Deferred interest from other non-derivative financial liabilities	210.2	210.2	-	-	-	-	-
Lease liabilities	682.5	18.7	38.5	18.1	31.7	83.6	103.2
Financial liabilities from tenant financing	155.1	-	114.1	-	2.0	-	9.7
Derivative financial assets and liabilities							
Purchase price liabilities from put options/rights to reimbursement	270.9	-	-	-	-	-	195.4
Cash flow hedges/stand-alone interest rate derivatives	-165.5	-23.5	-	-14.2	-	-23.5	-
Cash flow hedges (cross currency swap) USD in €	-47.0	-10.8	-185.0				
Cash flow hedges (cross currency swap) in €		8.4	185.0				
Deferred interest from swaps	-1.1	-1.1	-	-	-	-	-

in € million	Carrying amount as of Dec. 31, 2021	2022 Interest	2022 Repayment	2023 Interest	2023 Repayment	2024 to 2028 Interest	2024 to 2028 Repayment
Non-derivative financial liabilities							
Liabilities to banks	21,263.4	118.0	846.7	149.2	1,619.4	484.1	7,437.7
Liabilities to other creditors	25,592.9	200.7	5,837.7	307.0	2,713.2	1,100.2	11,956.1
Deferred interest from other non-derivative financial liabilities	172.7	172.7	–	–	–	–	–
Lease liabilities	679.1	17.3	39.0	16.9	33.4	79.8	107.3
Financial liabilities from tenant financing	157.5	–	114.6	–	2.1	–	10.2
Derivative financial assets and liabilities							
Purchase price liabilities from put options/rights to reimbursement	264.0	–	47.8	–	–	–	34.0
Cash flow hedges/stand-alone interest rate derivatives	35.6	46.0	–	35.5	–	28.4	–
Cash flow hedges (cross currency swap) USD in €	-35.2	-10.2	–	-10.2	-185.0		
Cash flow hedges (cross currency swap) in €		8.4	–	8.4	185.0		
Deferred interest from swaps	1.4	1.4	–	–	–	–	–

Credit Facilities

Since November 2021, an agreement has been in place between Vonovia SE and a banking consortium led by Commerzbank AG for a syndicated credit facility with a volume of € 3,000.0 million. Drawdowns can be made in euros or Swedish krona under the agreement, which will end in 2024, with interest based on the EURIBOR or STIBOR, plus an additional margin. This credit line had not been used as of December 31, 2022.

A commercial paper master program with a total volume of € 3,000.0 million, in which Vonovia SE acts as the issuer, has also been in place since November 2021. No issues were outstanding as part of this program as of December 31, 2022.

As of December 31, 2022, the total volume available under guarantee loan agreements in the Group as a whole amounted to € 245.8 million. A total of € 115.2 million of this amount had been drawn down by the reporting date.

Most of the total volume was made available to Vonovia SE in the form of three revolving guarantee lines of € 50.0 million each by Commerzbank AG, Atradius Credit Insurance N.V. and Swiss Re International SE. A total of € 69.7 million of this volume had been drawn in the form of guarantees issued as of December 31, 2022. The BUWOG subgroup also has a revolving guarantee line of € 10.0 million with UniCredit Bank Austria AG, which had been drawn in the amount of € 5.4 million as of December 31, 2022, as well as a guarantee line of € 5.0 million with Raiffeisen Bank International AG. The latter had not been drawn by the reporting date. In addition, a project-specific development financing arrangement with Berliner Volksbank eG allows for the possibility of obtaining bills of exchange, bonds and/or guarantees. On the reporting date of December 31, 2022, an amount of € 0.15 million had been used as part of this arrangement. As of the reporting date, guarantees of Kreissparkasse Gelnhausen of approx. € 0.25 million had also been drawn, as had a guarantee of HypoVereinsbank of approx. € 0.17 million. Vonovia SE has granted a letter of comfort for an already terminated general guarantee agreement between BUWOG Bauträger GmbH and VHV Allgemeine Versicherung AG, under which guarantees of € 0.23 million are currently in force. No new guarantees will be issued under this agreement.

In the Deutsche Wohnen subgroup, there are a total of two framework credit agreements with various banks and a total volume of € 80.0 million. Bills of exchange may also be issued under the terms of one of these agreements, concluded with Aareal Bank in a framework volume of € 30.0 million. As of the reporting date, bills of exchange with a total volume of around € 0.01 million were outstanding. There is also a guarantee framework agreement with Euler Hermes in the amount of € 50.0 million, with a volume of some € 39.3 million having been issued as of the reporting date.

All in all, Vonovia has cash on hand and deposits at banking institutions of € 1,101.8 million as of the reporting date (December 31, 2021: € 1,134.0 million). The master credit agreements/the commercial paper program, together with the cash on hand, guarantee Vonovia's ability to pay at all times.

We refer to the information on financial risk management in the management report.

55 Capital Management

Vonovia's management aims to achieve a long-term increase in value in the interests of customers, employees and investors. Within this context, maintaining a degree of financial flexibility in order to be able to achieve strategic objectives is crucial. This is why Vonovia's capital management focuses on ensuring our investment grade rating. The priority is to ensure sufficient liquidity resources and maintain an efficient ratio between secured and non-secured capital components.

As part of the opportunities and risk management of Vonovia, the members of the Management Board are given monthly reports on the development of results and their potential effects on the capital structure.

The equity situation of the subsidiaries is regularly examined.

Vonovia's equity developed as follows:

in € million	Dec. 31, 2021*	Dec. 31, 2022
Total equity	36,139.1	34,438.8
Total assets	105,914.3	101,389.6
Equity ratio	34.1%	34.0%

* Adjusted (see note [A2] Adjustment to Prior-year Figures).

Vonovia plans to continue funding possible acquisitions by an optimal mix of debt capital and equity.

In order to protect itself against changes in exchange rates and interest rates, Vonovia regularly contracts derivative hedging transactions in the case of liabilities with variable interest rates or liabilities in foreign currencies. The Finance and Treasury department is responsible for implementing the approved financing strategy.

56 Cash Flow Hedges and Stand-alone Hedging Instruments

On the reporting date, the nominal volume of cash flow hedges held in euros, including swaptions, amounts to € 1,501.7 million (December 31, 2021: € 1,109.5 million). Interest rates on hedging instruments are between 0.064% and 3.760% with original swap periods of between 5.25 and 20 years.

In order to partially hedge a secured fixed-rate loan issue in favor of Vonovia SE for an expected amount of € 1.2 billion, with a planned issue date of April 13, 2023 and a term of 10 years, three zero-cost swaption collars (financial options on three interest rate swaps) with a total nominal volume of € 1.0 billion were concluded with different banks in each case between December 5, 2022 and December 8, 2022. Annual interest payments are planned for the hedged item, and no contractual agreements have been reached on repayments during the term. The conclusion of the derivatives caps Vonovia's interest expense from the financing at 3.00% for the term of 10 years. The hedge only relates to the interest rate risk. In order to maximize hedge effectiveness, only the intrinsic value of the options is designated in the hedge. The fair value of the swaption is not part of the hedge and is recognized periodically in the income statement affecting net income. The option on the interest rate swap can only be exercised on the option expiry date. All swaptions concluded are cash-settled, i.e., the market values of the derivatives are settled on the option due date.

For the hedging instruments that are maintained within a so-called passive hedge accounting, € 7.9 million was reclassified affecting net income in the reporting year in line with the expected cash flows from the underlying hedged items. This reduced the value recognized in other comprehensive income to € 10.8 million.

All derivatives are included in netting agreements with the issuing banks.

Due to the current interest rate environment, both the cross currency swaps and the other euro interest rate swaps are reported with positive market values as of the reporting date.

No economic or accounting offsetting was performed in the reporting year.

Key parameters of the interest rate swaps were as follows:

in € million	Carrying amount Dec. 31, 2022	Balance sheet item including the hedging instrument	Face value	Beginning of term	End of term
Bank of America (future fixed interest loan issue)					
Hedged item			400.0	Apr. 12, 2023	Apr. 11, 2033
Swaption	11.9	Financial assets	400.0	Dec. 05, 2022	Apr. 06, 2023
Deutsche Bank (future fixed interest loan issue)					
Hedged item			300.0	Apr. 13, 2023	Apr. 12, 2033
Swaption	9.2	Financial assets	300.0	Dec. 08, 2022	Apr. 11, 2023
BNP Paribas (future fixed interest loan issue)					
Hedged item			300.0	Apr. 14, 2023	Apr. 13, 2033
Swaption	9.1	Financial assets	300.0	Dec. 07, 2022	Apr. 12, 2023
HELABA					
Hedged item			146.6	Jan. 28, 2019	Apr. 30, 2024
Interest rate swaps	5.6	Financial assets	146.6	Jan. 28, 2019	Apr. 30, 2024
Berlin Hyp					
Hedged item			146.6	Jan. 28, 2019	Apr. 30, 2024
Interest rate swaps	5.6	Financial assets	146.6	Jan. 28, 2019	Apr. 30, 2024
Norddeutsche Landesbank					
Hedged item			75.9	June 28, 2013	June 30, 2023
Interest rate swaps	0.2	Financial assets	75.9	June 28, 2013	June 30, 2023
UniCredit Bank AG					
Hedged item			43.1	Oct. 01, 2018	Nov. 30, 2038
Interest rate swaps	6.5	Financial assets	43.1	Oct. 01, 2018	Nov. 30, 2038
UniCredit Bank Austria AG					
Hedged item			89.5	Jan. 02, 2015	Dec. 31, 2034
Interest rate swaps	17.6	Financial assets	89.5	Sep. 18, 2020	Dec. 31, 2034

Current average interest rate (incl. margin)	Changes in the value of the hedging instrument recognized in other comprehensive income	Ineffectiveness of the hedging instrument recognized in profit or loss	Profit or loss item including hedge ineffectiveness	Reporting year reclassification	Profit or loss item including the reclassification of the hedge	Change in fair value of the hedged item
	(+) Increase of equity (-) Decrease of equity	(+) Increase of equity (-) Decrease of equity				
6-M-EURIBOR Marge 0.0%						
3.00%/2.299%	7.4	4.5	Interest expenses	n.a.	n.a.	n.a.
6-M-EURIBOR Marge 0.0%						
3.00%/2.2275%	5.6	3.6	Interest expenses	n.a.	n.a.	n.a.
6-M-EURIBOR Marge 0.0%						
3.00%/2.286%	5.6	3.5	Interest expenses	n.a.	n.a.	n.a.
1-M-EURIBOR Marge 0.0%						-6.3
0.390%	6.3	0.0	n.a.	0.1	Interest expenses	
1-M-EURIBOR Marge 0.0%						-6.3
0.390%	6.3	0.0	n.a.	0.1	Interest expenses	
3-M-EURIBOR Marge 1.47%						-3.3
2.290%	3.9	-0.6	Interest expenses	1.7	Interest expenses	
3-M-EURIBOR Marge 1.32%						-11.6
1.505%	10.9	0.7	Interest expenses	0.7	Interest expenses	
3-M-EURIBOR Marge 1.12%						-16.0
0.064%	15.5	0.5	Interest expenses	0.1	Interest expenses	

In 2013, two cross currency swaps were contracted in equal amounts with each of JP Morgan Limited and Morgan Stanley Bank International Limited; these hedging instruments (cross currency swaps/CCS) became effective on the issuance of two bonds for a total amount of USD 1,000 million. The CCS, each for an amount of USD 375.0 million, fell due in October 2017 in line with the bonds. The hedging instruments, each for an amount of USD 125.0 million, originally had a term of ten years. This means that the EUR/USD currency risk resulting from the coupon and capital repayments was eliminated for the entire term of the bonds.

Key parameters of the cross currency swaps were as follows:

	Face value in USD million	Face value in € million	Beginning of term	End of term	Interest rate USD	Interest rate €	Hedging rate USD/€
J.P. Morgan Securities plc Morgan Stanley & Co. International plc							
Hedged items	250.0	185.0	Oct. 02, 2013	Oct. 02, 2023	5.00%		
CCS	250.0	185.0	Oct. 02, 2013	Oct. 02, 2023		4.58%	1.3517

On February 22, 2022, control of 20.5 % of the shares in the Adler Group, which were previously held by Aggregate Holdings Invest S.A., passed to Vonovia as part of a debt recovery action. At the time of the debt recovery action, the shares in the Adler Group had been reported at their market value of € 251.4 million as investments in associates accounted for using the equity method. Within this context, the call option discussed at this point last year was lost.

As of the reporting date, Deutsche Wohnen Group recognized 16 stand-alone interest rate swaps. The hedged nominal volume amounted to € 704.8 million as of December 31, 2022 (December 31, 2021: € 652.9 million), while the positive market values amount to a total of € 66.4 million (December 31, 2021: € -20.8 million).

The hedged nominal volume of currently 13 stand-alone interest rate swaps of BUWOG amounted to € 299.9 million as of December 31, 2022 (December 31, 2021: € 312.3 million).

On the reporting date, the Victoriahem Group recognized 15 stand-alone interest rate swaps and three interest rate caps. The nominal volume hedged in Swedish krona amounted to € 1,296.9 million as of December 31, 2022 (December 31, 2021: € 1,668.2 million), while the positive market values amount to a total of € 23.8 million (December 31, 2021: € -1.0 million).

The designation of the cash flow hedges as hedging instruments is prospectively determined on the basis of a sensitivity analysis, retrospectively on the basis of the accumulated dollar offset method. The fair value changes of the hedged items are determined on the basis of the hypothetical derivative method. In the reporting year – as in the prior year – the impact of default risk on the fair values is negligible and did not result in any adjustments of the balance sheet item.

In the reporting year, the cash flow hedges held in euros, including swaptions, were shown at their clean fair values totaling € 65.7 million as of December 31, 2022 (December 31, 2021: € -12.3 million). At the same time, positive market values from cross currency swaps in the amount of € 47.0 million (December 31, 2021: € 35.2 million) and positive market values totaling € 99.8 million (December 31, 2021: € 30.6 million) from stand-alone interest rate derivatives of Deutsche Wohnen, BUWOG and Victoriahem were recognized.

In the previous year, financial liabilities still included negative fair values from stand-alone interest rate derivatives in the amount of € -53.9 million.

The total deferred interest came to € 1.1 million in the reporting year (December 31, 2021: € -1.4 million).

The impact of the cash flow hedges (after income taxes) on the development of other reserves is shown below:

		Changes in the period		Reclassification affecting net income		
in € million	As of Jan. 1	Changes in CCS	Other	Currency risk	Interest risk	As of Dec. 31
2022	**-11.9**	**9.0**	**45.0**	**-9.4**	**8.5**	**41.2**
2021	**-32.9**	**12.1**	**6.1**	**-11.7**	**14.5**	**-11.9**

The impact of the cash flow hedges (including income taxes) on total comprehensive income is shown below:

Cash Flow Hedges

in € million	2021	2022
Change in unrealized gains/losses	26.5	77.9
Taxes on the change in unrealized gains/losses	-8.3	-23.9
Net realized gains/losses	-0.4	-5.0
Taxes due to net realized gains/losses	3.2	4.1
Total	**21.0**	**53.1**

In the reporting year, after allowing for deferred taxes, positive cumulative ineffectiveness for cash flow hedges amounts to € 8.1 million (2021: € -0.1 million), improving net interest by € 8.2 million. On the basis of the valuation as of December 31, 2022, Vonovia used a sensitivity analysis to determine the change in equity given a parallel shift in the interest rate structure of 50 basis points in each case:

	Change in equity		
in € million	Other reserves not affecting net income	Income statement affecting net income	Total
2022			
+50 basis points	31.8	10.9	42.7
-50 basis points	-16.9	-20.9	-37.8
2021			
+50 basis points	6.1	21.8	27.9
-50 basis points	-5.8	-19.7	-25.5

A further sensitivity analysis showed that a change in the foreign currency level of -5% (+5%) would lead, after allowance for deferred taxes, to a change in the other reserves not affecting net income of € -0.4 million (or € 0.4 million), while ineffectiveness affecting net income in the amount of € 0.3 million (or € -0.3 million) would result at the same time. In the previous year, a change in the other reserves not affecting net income of € -1.1 million (or € -0.9 million) was recognized in connection with ineffectiveness affecting net income in the amount of € +1.6 million (or € +0.5 million).

57 Contingent Liabilities

Contingent liabilities exist for cases in which Vonovia SE and its subsidiaries give guarantees to various contractual counterparts. The terms are in many cases limited to an agreed time. In some cases, the term is unlimited.

Contingent liabilities of Vonovia are as follows:

in € million	Dec. 31, 2021	Dec. 31, 2022
Guarantees in connection with Development	104.5	86.0
Rent surety bonds	3.2	2.9
Other	1.6	3.9
	109.3	**92.8**

Vonovia is involved in a number of legal disputes resulting from normal business activities. In particular, these involve tenancy and sales law disputes and, in individual cases, company law disputes (mainly following squeeze-out processes). None of the legal disputes, taken in isolation, will have any material effects on the net assets, financial position or results of operations of Vonovia.

58 Other Financial Obligations

The other financial obligations are as follows:

in € million	Dec. 31, 2021	Dec. 31, 2022
Other financial obligations		
Obligations resulting from acquisition	868.1	798.6
Investment obligations	921.9	757.7
Commitments under purchase orders for modernization and new construction	800.1	580.2
Cable TV service contracts	220.5	173.4
IT service contracts	62.0	43.4
Surcharges under the German Condominium Act	1.6	0.3
Other	26.4	12.0
	2,900.6	**2,365.6**

The obligations under cable TV service contracts are set against future income from the marketing of the cable TV service.

Bochum, March 14, 2023

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