Notes

Accounting Policies

1 Principles of the Consolidated Financial Statements

Vonovia SE is incorporated and domiciled in Germany. Its registered office is located in Bochum.

The consolidated financial statements as of and for the year ended December 31, 2018, 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. These are the first consolidated financial statements to which IFRS 15 "Revenue from Contracts with Customers" and IFRS 9 "Financial Instruments" have been applied. Changes to key accounting methods are set out in note [2] 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, equity instruments at fair value under other comprehensive income, plan assets and financial liabilities arising from binding share purchase offers to minority shareholders. These are measured at their fair value or, in the case of financial liabilities arising from binding share price offers, at the minimum purchase price if it is higher than the 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 Management Board of Vonovia SE drew up the consolidated financial statements on February 25, 2019.

2 Adjustment to Prior-year Figures

Changes were made to segment reporting in the 2018 fiscal year due to changes in the company's internal organization and reporting structure. The prior-year figures were adjusted accordingly as a result of these changes. For further information, we refer to Chapter [48] "Segment Reporting."

In the fiscal year, the income statement shows impairment losses on financial assets and gains and losses resulting from the derecognition of financial assets measured at amortized cost separately in accordance with IFRS 9. The previous year was adjusted accordingly.

Financial liabilities from tenant financing are shown separately in the balance sheet in the fiscal year. The previous year was adjusted accordingly.

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 Vonovia's interest in 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 capital procurement costs or costs relating to 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 ownership's interest in a subsidiary that do not result in the parent's 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, 520 companies (Dec. 31, 2017: 350) – thereof 318 (Dec. 31, 2017: 259) domestic companies and 202 (Dec. 31, 2017: 91) foreign companies – have been included in the consolidated financial statements as of December 31, 2018. In addition, joint activities were performed with two domestic companies (Dec. 31, 2017: none). In addition, four (Dec. 31, 2017: four) domestic companies and two (Dec. 31, 2017: one) foreign companies were included as joint ventures and two (Dec. 31, 2017: none) foreign companies were included as associated companies valued using the equity method.

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 changes as of December 31, 2018, compared with the previous year result from the acquisition of the BUWOG Group (128 companies, of which two have joint activities), the Victoria Park Group (71 companies, of which two are associated companies) and 14 further acquisitions, including one joint venture, four newly established companies, 31 mergers, seven accruals, two liquidations and two sales.

Acquisition of BUWOG
In connection with the voluntary public takeover offer that Vonovia SE made on December 18, 2017, to the shareholders of BUWOG AG, Vienna, Austria (BUWOG), a total of 82,844,967 shares had been tendered after the end of the acceptance deadline on March 12, 2018, at a price of € 29.05 per Vonovia share. In addition, 2,988 BUWOG convertible bonds, which account for 99.6% of the total par value of the convertible bonds, were tendered at a price of € 115,753.65 each.

The acquisition date at which Vonovia SE obtained control of the BUWOG Group is March 26, 2018. This was the date on which the offer was settled. This transaction shall be treated as a business combination in accordance with IFRS 3.

The second extended tender phase started in accordance with Section 19 (3) 3 of the Austrian Takeover Act (ÜbG) on March 16, 2018, and ended at 5 p.m. CEST on June 18, 2018. With the conclusion of this second extended tender period, a further 15,281,786 shares were tendered to Vonovia. Furthermore, the 2,988 convertible bonds that were tendered during the first tender period, in addition to ten that were tendered in the second tender period, were converted into 11,904,382 shares. Since the acquisition of shares and the conversion were effected under exactly the same conditions as in the first acceptance deadline and the two actions were related in terms of content and timing, a linked transaction can be assumed. Taking the second acceptance period into account along with the 550,000 shares acquired on the market as of March 26, 2018, Vonovia possessed 89.1% of the share capital of BUWOG at the end of the second extended tender phase.

As of September 30, 2018, Vonovia acquired another 2,091,517 shares on the market at a purchase price which was below the offer price. This transaction is presented as a separate acquisition. Overall, Vonovia thus possessed more than 90.7% of the share capital of BUWOG as of December 31, 2018.

On June 20, 2018, Vonovia requested a squeeze-out at the next Annual General Meeting according to the Austrian Squeeze Out Act (Gesellschafterausschlussgesetz). The Annual General Meeting held on October 2, 2018, in Vienna passed a resolution on the transfer of the shares held by the minority shareholders to the main shareholder, Vonovia SE, in return for a cash settlement of € 29.05 per share. The squeeze-out became effective on November 16, 2018.

The consideration transferred comprises the following:

in € billion	
Net cash purchase price component	2.9
Convertible bonds	0.3
Total consideration	**3.2**

The allocation of the total purchase price to the acquired assets and liabilities (PPA) of the BUWOG Group as of the date of first-time consolidation is based on the updated quarterly figures of BUWOG as of January 31, 2018, and on the necessary adjustments to the fair values of the assets and liabilities.

The measurement period for the first-time recognition of the merger with BUWOG ended on December 31, 2018.

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:

in € billion	
Investment properties	4.6
Cash and cash equivalents	0.3
Real estate inventories	0.3
Trade receivables	0.2
Fair value of other assets	0.1
Total assets	5.5
Non-controlling interests	0.3
Non-derivative financial liabilities	1.9
Deferred tax liabilities	0.3
Fair value of other liabilities	0.5
Total liabilities	3.0
Fair value net assets	2.5
Consideration	3.2
Goodwill	**0.7**

The goodwill represents synergies from the future integration of the BUWOG Group, in particular by way of the joint administration and management of the German and Austrian residential units, the development of process know-how, the expansion of the value chain and the optimization of cost structures.

Since April 2018, the BUWOG Group has recognized income from property management in the amount of € 242.1 million, as well as an earnings contribution in terms of earnings before fair value adjustments of investment properties, interest, taxes, depreciation and amortization (EBITDA IFRS) of € 186.2 million. If the BUWOG Group had already been fully included in the consolidated Group as of January 1, 2018, it would have contributed to the income from property management in the amount of € 322.7 million and to EBITDA IFRS in the amount of € 204.5 million.

Out of the trade receivables that were acquired, an amount of € 6.1 million is likely to have been uncollectible at the time of acquisition. The gross amount of the acquired trade receivables was € 163.1 million. The net carrying amount, which corresponds to the fair value, was € 157.0 million.

In the 2018 fiscal year, transaction costs related to the acquisition of the BUWOG Group in the amount of € 35.1 million were recognized in other operating expenses affecting net income. € 29.0 million of this amount was recognized in other operating expenses and € 6.1 million in financial expenses.

A total of 89 domestic and 39 foreign companies of the BUWOG Group were newly included in the scope of consolidation as of the date of acquisition.

Acquisition of Victoria Park

In connection with the voluntary public takeover offer that Vonovia SE made on May 3, 2018, via its subsidiary Deutsche Annington Acquisition Holding GmbH (DA Acquisition) to the shareholders of Victoria Park AB (publ), Malmö, Sweden (Victoria Park), a total of 34,056,463 class A shares, 97,962,486 class B shares and 663,172 preference shares had been tendered to Vonovia after the end of the acceptance deadline on June 18, 2018. The offer price for the class A and class B shares was SEK 38.00, and for preference shares SEK 316.00. The settlement of the offer for shares tendered through June 18, 2018, occurred on June 28, 2018. In addition, a further 158,035 class A and 965,494 class B shares had been acquired on the market by June 28, 2018.

Although Vonovia had less than 50% of the voting rights as of June 28, 2018, in accordance with IFRS 10.B41–B43, de facto control must be assumed as of this point in time, since it held a majority of votes present at the Annual General Meeting. This is why June 28, 2018, is considered the date of acquisition on which Vonovia SE obtained control over the Victoria Park Group. This transaction shall be treated as a business combination in accordance with IFRS 3.

On June 18, 2018, DA Acquisition announced that it would extend the offer period until July 3, 2018, at 5 p.m. (CEST) in order to give shareholders who had not accepted the offer the possibility of doing so. A total of 1,649,385 class A shares, 2,542,719 class B shares and 108,891 preference shares were tendered. Since the acquisition of the shares as part of the extended acceptance period was effected under exactly the same conditions as in the first acceptance period and the two aspects were related in terms of content and timing, a linked transaction can be assumed.

Furthermore, call options were granted to DA Acquisition by the shareholders during the original offer period. They allow Vonovia to purchase 10,235,198 class A shares and 14,264,946 class B shares in Victoria Park (“call option shares”) at a fixed price between May 15 and May 29, 2019.

Including the shares acquired by June 28, 2018, the shares tendered during the extended offer period leading up to July 3, 2018, and the call option shares, the stake acquired corresponds to around 66.7% of the share capital and 61.1% of all voting rights in Victoria Park.

On September 5, 2018, Vonovia also acquired the entire interest held by Starwood Capital Group in Victoria Park. This interest, comprised of 27,074,397 class A shares and 32,486,304 class B shares, was held by a company controlled by the Starwood Capital Group. On the basis of the separate agreement reached with the company selling the interest, the acquisition is to be viewed separately from the tender period and the extended tender period and constitutes a separate acquisition transaction.

In addition, a further 103,501 class A and 663,870 class B shares had been acquired on the market by December 31, 2018. As the purchase was at the valid market price in each case and due to the fact that the purchase date fell after June 28, 2018, these additional purchases are also presented as separate acquisitions.

All in all, this means that, including the call options, Vonovia holds 91.4% of the share capital and 93.5% of all voting rights in Victoria Park as of December 31, 2018.

As part of the provisional purchase price allocation using the anticipated acquisition method, the consideration transferred for the business combination comprises the following:

in € billion	
Net cash purchase price component	0.5
Purchase price liability from call-option shares	0.1
Consideration for the acquisition of shares	**0.6**

The provisional allocation of the total purchase price to the acquired assets and liabilities (PPA) of the Victoria Park Group as of the date of first-time consolidation is based on the quarterly figures of Victoria Park as of June 30, 2018, and on the adjustments to the fair values of the acquired assets and liabilities that are necessary.

The assets and liabilities assumed in the course of the business combination had the following preliminary fair values as of the date of first-time consolidation:

in € billion	
Investment properties	1.6
Cash and cash equivalents	0.1
Total assets	**1.7**
Non-controlling interests	0.2
Non-derivative financial liabilities	0.9
Deferred tax liabilities	0.1
Fair value of other liabilities	0.1
Total liabilities	**1.3**
Fair value net assets	**0.4**
Consideration	0.6
Goodwill	**0.2**

Goodwill represents benefits from the future cooperation between the Victoria Park Group and Vonovia through the partial transfer of Vonovia's business strategy, in particular regarding its property and portfolio management strategy for the administration and management of the residential units, the utilization of Vonovia's modernization know-how to further modernize the portfolio and the Value-add strategy with a focus on expanding the value chain.

Since July 2018, the Victoria Park Group has recognized income from property management in the amount of € 59.5 million, as well as an earnings contribution in terms of earnings before fair value adjustments of investment properties, interest, taxes, depreciation and amortization (EBITDA IFRS) of € 33.7 million. If the Victoria Park Group had already been fully included in the consolidated Group as of January 1, 2018, it would have contributed to the income from property management in the amount of € 117.2 million and to EBITDA IFRS in the amount of € 59.3 million.

Out of the trade receivables that were acquired, an amount of € 0.9 million is likely to have been uncollectible at the time of acquisition. The gross amount of the acquired trade receivables was € 3.3 million. The net carrying amount, which corresponds to the fair value, was € 2.4 million.

In the 2018 fiscal year, transaction costs related to the acquisition of the Victoria Park Group in the amount of € 22.0 million were recognized in other operating expenses affecting net income. € 11.8 million of this amount was recognized in other operating expenses and € 10.2 million in financial expenses.

A total of 71 foreign companies, thereof two associated companies, were newly included in the scope of consolidation as of the date of acquisition. Two of these companies were valued using the equity method.

5 Currency Translation

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.

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.

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

	Closing rate		Average for period	
Basis: € 1	**Dec. 31, 2017**	**Dec. 31, 2018**	**2017**	**2018**
HUF – Hungarian forint	310.33	320.98	309.19	318.89
SEK – Swedish kronor	9.84	10.25	9.64	10.36*
UAH – Ukrainian hryvnia	33.58	32.79**	30.00	32.18**
USD – US dollar	1.20	1.15	1.13	1.18

* The average for the period for the Swedish kronor for 2018 is calculated for the period from July 1 to December 31, as Vonovia's Swedish subsidiary was only included in the consolidated financial statements as of June 30, 2018.

** The exchange rate at the end of the reporting period and the average value for the period for Ukrainian hryvnia is fixed at the value for 2018 or up to September 30 as the company was sold as of September 30.

6 Accounting Policies

a) Recognition of Income and Expenses

Income 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 not 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.

b) Income from Disposal of Properties (Development)

Income from disposal of properties (Development) is realized either over time or at a specific point in time as soon as the customer obtains control over the asset in question. 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 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.

c) Goodwill

Goodwill results from a business combination and is defined as the amount by which the acquisition costs for shares in a company or group of companies exceed 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 loss testing of goodwill is performed at the level of cash-generating units (CGUs) or a group of cash-generating units. A cash-generating unit 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 (formerly "Value-add Business"). The third group of CGUs to which goodwill is allocated and for which goodwill is monitored for management purposes relates to the Development segment.

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 business areas/the Value-add segments and Development 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 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.

d) Other Intangible Assets

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.

e) Property, Plant and Equipment

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.

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.

Real estate used by the company itself (owner-occupied properties) is depreciated over 50 years; equipment, fixtures, furniture and office equipment are depreciated over periods of between three and thirteen years.

f) Impairment of Other Intangible Assets and Property, Plant and Equipment

In accordance with IAS 36 "Impairment of Assets," other intangible assets as well as property, plant and equipment 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 CGU to which the asset belongs. Impairment losses are recognized as expenses in the income statement with effect on 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).

g) Investment Properties

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 inheritable building rights of third parties. Properties that are capitalized under a finance lease in accordance with IAS 17 "Leases" and covered by the definition of investment properties are also 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. Property held under a finance lease is recognized at the lower of the fair value of the property and the present value of the minimum lease payments upon initial recognition.

Following initial recognition, investment properties are measured at fair value. Any change therein is recognized as affecting net income in the income statement.

For a description of the determination of the fair values of investment properties, see Chapter [23] Investment Properties.

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.

h) Leases

Leases where all material risks and rewards associated with ownership are transferred to the lessee are accounted for as finance leases.

All leases where not all material risks and rewards associated with ownership are transferred are accounted for as operating leases.

The leased asset and corresponding liability are recognized at an amount equal to the lower of the fair value of the leased asset and the present value of the minimum lease payments. Subsequently, the leased asset is accounted for in accordance with the standards applicable to that asset. The minimum lease payments are apportioned between the finance charge and the reduction of the outstanding liability.

The lease payments under an operating lease in which Vonovia is the lessee are recognized as an expense on a straight-line basis over the lease term.

The lease payments under an operating lease in which Vonovia is the lessor are recognized as income on a straight-line basis over the lease term.

i) Financial Assets

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.

The following table shows the quantitative impact of classification in accordance with IFRS 9 compared with IAS 39:

Measurement category as of Jan. 1, 2018 in € million	IAS 39	IFRS 9
At amortized cost	14,766.4	14,766.4
At fair value through profit and loss	4.2	4.2
At fair value directly in equity under other comprehensive income (OCI) with reclassification to the income statement	648.3	
At fair value directly in equity under other comprehensive income (OCI) without reclassification to the income statement		648.3

With regard to the business model criterion, all financial investments at Vonovia are to be assigned to the "Hold" 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 under 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.

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 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.

Cash and cash equivalents are measured using the general impairment approach.

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. 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.

Available-for-sale Financial Assets (IAS 39)

Available-for-sale financial assets 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, if not an impairment loss, recognized in other comprehensive income. Impairments are reclassified from other comprehensive income to the income statement. Reversals of impairments are recognized in accordance with IAS 39.67f.

The fair value of available-for-sale financial assets is based on quoted market prices as of the reporting date. When an available-for-sale financial asset is derecognized, the cumulative gain or loss recognized in other comprehensive income is transferred to the income statement with an impact on 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.

Equity Instruments at Fair Value Under Other Comprehensive Income

Equity instruments to be recognized at fair value under 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 under 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, without 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.

j) Inventories

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

k) Cash and Cash Equivalents

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.

l) Real Estate Inventories and Contract Assets

Real Estate Inventories

The development business intended for sale 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.

Contract Assets

In cases involving development properties for which control, within the meaning of IFRS 15.35(c), already passes to the customer at the time at which the certified purchase agreement is concluded, 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.

The contract asset item also includes capitalized costs for the initiation of the contracts with customers. These relate, in particular, to brokerage commission, which is calculated differently in Germany and Austria. In Germany, the commission corresponds to 1.50% of the purchase price of the unit, while in Austria the percentage is 0.22%. The costs associated with the contract initiation process are amortized depending on how the goods or services to which the costs relate are transferred to the customer.

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

m) Assets Held for Sale

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.

n) Income and Expense Recognized Directly in Other Comprehensive Income

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.

o) Tax

Current Income Taxes

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.

A dividend payment to the shareholders does not trigger any tax obligation at Vonovia SE.

Deferred Taxes

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 offset 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 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 2017, the combined tax rate of corporate income tax and trade tax of 33.1% was used to calculate domestic deferred taxes for 2018. The corporate income tax rate for the companies based in Austria is 25.0%, while the rate for companies based in Sweden is 20.6%.

Deferred tax assets and liabilities are offset 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.

p) Earnings per Share

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.

q) Provisions

Provisions for Pensions and Similar Obligations

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 the 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 scheme operated by the German federal government and the German 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.

Other Provisions

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.

r) Financial Liabilities

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.

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.

The changes to IFRS 9 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 for retrospective effectiveness testing and 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.

In general, the new provisions set out above will not have any impact on the Vonovia Group.

At the time of initial 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 will apply this accounting method to all hedge relationships.

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 IAS 39 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.

Liabilities from finance leases are initially recognized at the fair value of the leased object or the lower present value of the minimum lease payments. For the purposes of subsequent measurement, the leased asset is accounted for in accordance with the standards applicable to that asset. The minimum lease payments are split into an interest and a principal repayment component in respect of the residual debt.

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.

s) Financial Liabilities from Tenant Financing

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.

t) Share-based Payment

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

Equity-settled share-based payments 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 notes [33] Provisions and [50] Share-based Payment).

u) Government Grants

The companies that belong to the Group receive grants from public authorities in the form of construction subsidies, expenses subsidies, expenses loans and low-interest loans.

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 income 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. In the 2018 fiscal year, Vonovia was granted low-interest loans of € 171.1 million (2017: € 494.6 million).

v) Contingent Liabilities

A contingent liability is a possible obligation towards 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.

w) *Estimates, Assumptions, Options and Management Judgment*

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.

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 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 note [23] 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 for accounting purposes. 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 Group's 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 the accounting policies, Vonovia checks for goodwill impairments on an annual basis, or if there is any reason to suspect such impairments. The next step involves estimating 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 and may contain a number of judgments about future events. New information may become available that causes the Group to change its judgments 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.

As part of the application of IFRS 15, the determination of the time at which a performance obligation is satisfied, the determination of the progress made in cases involving revenue recognition over time and the assumptions used to determine the amount of the capitalized contract initiation costs may involve discretionary judgment.

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.

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:

> 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 cost 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.
> 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.

x) Changes in Accounting Policies due to new Standards and Interpretations

The application of numerous new standards, interpretations and amendments to existing standards became mandatory for the 2018 fiscal year.

The following new or amended standards and interpretations became mandatory for the first time in the 2018 fiscal year. The application of IFRS 9 "Financial Instruments" and IFRS 15 "Revenue from Contracts with Customers" is explained in the relevant sub-sections of the chapter on accounting policies. Neither of the new standards resulted in any adjustments being made to total equity at the time of the transition. The changes in classification pursuant to IFRS 9 are shown in the "Financial Assets" section of the chapter on accounting policies. None of the other new or amended standards listed below had a material impact.

> IAS 40: "Investment Properties"
> IFRS 2: "Share-based Payment"
> IFRS 4: "Insurance Contracts"
> IFRS 9 "Financial Instruments"
> IFRS 15 "Revenue from Contracts with Customers"
> IFRIC 22 "Foreign Currency Transactions and Advance Consideration"

y) New Standards and Interpretations not yet Applied

Application of the following standards, interpretations and amendments to existing standards was not yet mandatory for the 2018 fiscal year. Vonovia also did not choose to apply them in advance. 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
Improvements and supplements to a selection of IFRS 2015-2017		Jan 1, 2019*
Amendment to References to the Conceptual Framework in IFRS Standards		Jan 1, 2020*
Amendments to Standards		
IAS 1 and IAS 8	"Presentation of Financial Statements" and "Accounting Policies, Changes in Accounting Estimates and Errors"	Jan 1, 2020*
IAS 28	"Investments in Associates and Joint Ventures"	Jan 1, 2019*
IAS 19	"Employee Benefits"	Jan 1, 2019*
IFRS 3	"Business Combinations"	Jan 1, 2020*
IFRS 9	"Financial Instruments"	Jan 1, 2019
New Standards		
IFRS 16	"Leases"	Jan 1, 2019
IFRS 17	"Insurance Contracts"	Jan 1, 2021*
IFRIC 23	"Uncertainty over Income Tax Treatments"	Jan 1, 2019

* not yet endorsed

IFRS 16

In January 2016, the IASB published the new leasing standard IFRS 16 "Leases." It was adopted by the European Union for application in Europe on November 9, 2017. IFRS 16 specifies how a company measures, presents and discloses leases according to IFRS and is to be applied for the first time, as a mandatory requirement, for fiscal years beginning on or after January 1, 2019.

In particular, IFRS 16 replaces the previous leasing standard, IAS 17 "Leases," and introduces only one accounting model (right-of-use) for lessees, based on which all leases are to be recognized in the balance sheet as a matter of principle. There is an accounting option available for short-term leases and leases of low value assets. Vonovia will be making use of this option, meaning that such leases will not be recognized. The previous distinction between operating and finance leases will only remain in place for accounting at the level of the lessor.

As of January 1, 2019, all contracts that give the Vonovia Group the right to control the use of an asset over a certain period of time in return for consideration are considered leases within the meaning of IFRS 16.

In respect of those leases previously classified as operating leases, Vonovia will be recognizing lease liabilities as of January 1, 2019, equal to the present value of the future lease payments, discounted to reflect the term-specific incremental borrowing rate at the time of initial application. Right-of-use assets are recognized accordingly. The initial measurement of the right-of-use assets as of January 1, 2019, is based on the amount of the lease liabilities plus any advance payments that have already been made.

The right-of-use assets are generally recognized at amortized cost, taking amortization and write-downs into account. Right-of-use assets that meet the definition of investment properties (IAS 40) are already recognized at fair value as of the time of initial application in line with the recognition and measurement rules set out in IAS 40.

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.

Leases ending/expiring within the 2019 fiscal year are treated as short-term leases, meaning that they are not recognized. As far as rented IT equipment is concerned, portfolios have been set up for leases with similar terms and a single discount rate has been applied to these portfolios. As part of the transition to IFRS 16, Vonovia also takes scenarios pursuant to IAS 37 into account and adjusts the valuation of the right-of-use assets to reflect provisions for onerous contracts recognized on the reporting date.

The present value of the future lease obligations, pursuant to IAS 17, reported in the Notes to the consolidated financial statements as of December 31, 2018, deviates from the present value of the lease liabilities to be recognized as of January 1, 2019, pursuant to IFRS 16. This is due to leases that will expire in 2019 (short-term) and particularly due to those lease agreements that are not classified as leases under the control model within the meaning of IFRS 16.

Impact on the Consolidated Balance Sheet, Income Statement and Statement of Cash Flows

Vonovia is applying the new leasing standard for the first time as of January 1, 2019, based on the modified retrospective method provided for in the transitional provisions. Based on these provisions, the cumulative effect resulting from the initial application of IFRS 16 is recognized as an adjustment to the value of retained earnings in the opening balance sheet. Comparative information is not adjusted.

Vonovia expects the recognition of lease liabilities and right-of-use assets to increase its total assets by around € 311.4 million as of January 1, 2019, based on current calculations. This includes a reduction in retained earnings of around € 34.2 million resulting mainly from differences in the discounting of right-of-use assets and lease liabilities in connection with leasehold contracts. Due to the fair value measurement of the right-of-use assets under leasehold contracts, the right-of-use assets are calculated using property-specific discount rates. The lease liabilities from leasehold contracts, on the other hand, are calculated with the help of term-specific incremental borrowing rates. The equity ratio within the Group will fall accordingly. The weighted average incremental borrowing rate for all lease liabilities to be recognized amounts to 2.3% as of January 1, 2019.

In the consolidated income statement, leasing expenses from operating leases that were recognized on a straight-line basis in the past will be replaced, as of January 1, 2019, with amortization/earnings effects of the fair value measurement (for right-of-use assets relating to assets within the meaning of IAS 40) and interest expenses. This will result, all other things being equal, in an improvement in Adjusted EBITDA Total, EBITDA IFRS and an increase in the cash flow from operating activities. The cash flow from financing activities will be burdened due to the unwinding of discounting for the lease liabilities.

The application of IFRS 16 is not expected to have any impact on Vonovia's ability to adhere to the financial covenants that are relevant to it.

As far as lessors are concerned, the accounting model that IFRS 16 provides for does not differ significantly from the requirements set out in IAS 17. As a result, no significant changes are expected for leases in which the Vonovia Group is the lessor. Rental income still falls within the scope of the accounting standard for leases (as of January 1, 2019: IFRS 16). IFRS 16 distinguishes not only between separate lease components, but also between other services (non-lease components, covered by IFRS 15) and other components of the contract that do not result in the lessor providing a service. The condition for identifying a separate non-lease component is the lessor's obligation to provide a service pursuant to the contract (IFRS 16.B33). This means that the income from land tax and buildings insurance, as types of ancillary costs, fall within the scope of IFRS 16 (previously: IAS 17), as the tenants do not receive any additional service in return.

Notes to the Consolidated Income Statement

The figures from the previous year are only comparable to a limited extent due to acquisitions made during the fiscal year.

7 Income from Property Management

in € million	2017	2018
Rental income	1,672.1	1,897.8
Ancillary costs	671.9	750.1
Income from property letting	2,344.0	2,647.9
Other income from property management	47.6	60.3
	2,391.6	**2,708.2**

8 Profit on Disposal of Properties

in € million	2017	2018
Income from disposal of investment properties	466.9	761.4
Carrying amount of investment properties sold	-396.5	-597.6
Profit on disposal of investment properties	70.4	163.8
Income from sale of assets held for sale	739.5	336.1
Retirement carrying amount of assets held for sale	-739.5	-336.1
Revaluation of assets held for sale	81.1	68.5
Profit on disposal of assets held for sale	81.1	68.5
	151.5	**232.3**

The fair value adjustment of investment properties held for sale, for which a purchase contract had been signed but for which transfer of title had not yet taken place, led to a gain of € 68.5 million as of December 31, 2018 (2017: € 81.1 million).

9 Profit on Disposal of Real Estate Inventories (Development)

Income from the disposal of real estate inventories (Development) in the amount of € 225.1 million (2017: € 0.0 million) comprises € 167.0 million (2017: € 0.0 million) in income from the disposal of real estate inventories recognized over time together with € 58.1 million (2017: € 0.0 million) income from the disposal of real estate inventories recognized at a point in time. As of the reporting date, contract assets of € 112.5 million (2017: € 0.00 million) are recognized within trade receivables in connection with the period-related revenue recognition.

A transaction price of € 59.4 million (2017: € 0.0 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 two fiscal years, with an amount of € 57.1 million attributable to 2019 and an amount of € 2.3 million to 2020.

10 Net Income from Fair Value Adjustments of Investment Properties

Investment properties are measured by the in-house valuation department according to the fair value model. Any gains or losses from a change in fair value are recognized in the income statement. The measurement of the investment properties led to a net valuation gain during the 2018 fiscal year of € 3,517.9 million (2017: € 3,434.1 million). The high valuation result for 2018 is mainly due, in addition to the investment activity and strong development of Vonovia's operating business, to the dynamic market conditions for residential properties at the moment. These are reflected both in rental price developments and, in particular, also in an increase in real estate purchase prices triggered, among other things, by yield compression on the demand side.

11 Capitalized Internal Expenses

Capitalized internal expenses in the fiscal year amount to € 608,2 million (2017: € 458,1 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.

12 Cost of Materials

in € million	2017	2018
Expenses for ancillary costs	625.6	702.9
Expenses for maintenance and modernization	446.8	572.3
Other cost of purchased goods and services	104.0	105.8
	1,176.4	**1,381.0**

13 Personnel Expenses

in € million	2017	2018
Wages and salaries	342.1	423.3
Social security, pensions and other employee benefits	73.9	89.8
	416.0	**513.1**

The personnel expenses include expenses for severance payments in the amount of € 6.8 million (2017: € 10.3 million), allocations to the provisions for pre-retirement part-time work arrangements in the amount of € 3.0 million (2017: € 6.0 million) and expenses for the long-term incentive plan (LTIP) at € 7.2 million (2017: € 12.0 million) (see Chapter [33] Provisions).

In the fiscal year under review, employers' contributions to statutory pension insurance amounted to € 33.2 million (2017: € 28.9 million).

As of December 31, 2018, Vonovia had 9,923 employees (Dec. 31, 2017: 8,448), with the annual average coming to 9,757 employees (2017: 8,300). Vonovia also employed 485 trainees as of December 31, 2018 (Dec. 31, 2017: 462).

14 Depreciation and Amortization

With regard to developments in depreciation, amortization and impairment, we refer to the information set out in notes [21] Intangible Assets and [22] Property, Plant and Equipment.

15 Other Operating Income

in € million	2017	2018
Compensation paid by insurance companies	35.4	49.5
Reversal of provisions	15.9	27.6
Compensation for damages and cost reimbursements	9.6	10.7
Dunning and debt collection fees	7.0	7.4
Reversal of impairment losses	3.0	3.7
Miscellaneous	39.8	33.3
	110.7	**132.2**

16 Other Operating Expenses

in € million	2017	2018
Consultants' and auditors' fees	58.5	80.1
Vehicle and traveling costs	41.1	42.2
Rents, leases and ground rents	22.0	28.8
Communication costs and work equipment	16.0	24.7
Additions to provisions	22.4	10.8
Administrative services	15.6	10.8
Advertising costs	8.1	10.8
Insured losses	3.2	5.0
Dunning and debt collection fees	5.6	4.8
Non-capitalizable expenses from real estate development	–	3.8
Costs of sale associated with real estate inventories	–	3.1
Sales incidentals	4.4	2.8
Legal and notary costs	6.5	2.3
Impairment losses	1.6	1.8
Miscellaneous	41.8	68.2
	246.8	**300.0**

17 Financial Income

in € million	2017	2018
Income from other investments	20.1	23.1
Income from non-current securities and non-current loans	1.6	2.2
Other interest and similar income	25.1	6.8
	46.8	**32.1**

The income from other investments comprises financial income from investments in other real estate companies in the amount of € 14.0 million (2017: € 13.0 million) and also € 7.6 million (2017: € 6.3 million) in financial income from the collection of the profit share in AVW GmbH & Co. KG, Hamburg, for the previous fiscal year in each case.

18 Financial Expenses

The financial expenses mainly relate to interest expense on financial liabilities measured at amortized cost as well as transaction costs and prepayment penalties for financing measures.

in € million	2017	2018
Interest expense from non-derivative financial liabilities	299.0	350.9
Swaps (current interest expense for the period)	5.3	15.4
Effects from the valuation of non-derivative financial instruments	-8.8	14.9
Effects from the valuation of swaps	9.9	15.3
Transaction costs	7.9	14.2
Prepayment penalties and commitment interest	16.4	8.4
Interest expenses purchase price liabilities from put options/ rights to reimbursement	8.4	2.2
Interest accretion to provisions	9.2	9.1
Other financial expenses	5.7	18.7
	353.0	**449.1**

The prepayment penalties include the fees for the unscheduled repayment of loans during the fixed interest period.

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

in € million	2017	2018
Interest income	25.1	6.8
Interest expense	-353.0	-449.1
Net interest	-327.9	-442.3
Less:		
Net interest from provisions for pensions in acc. with IAS 19	8.7	8.6
Net interest from other provisions in acc. with IAS 37	0.3	0.5
Net interest from finance leases in acc. with IAS 17	5.6	5.6
Net interest to be classified	**-313.3**	**-427.6**

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

in € million	2017	2018
Financial assets measured at (amortized) cost	2.5	3.5
Derivatives measured at FV through P&L	-1.3	-29.7
Financial liabilities measured at (amortized) cost	-314.5	-401.4
Classification of net interest	**-313.3**	**-427.6**

19 Income Taxes

in € million	2017	2018
Current income tax	35.1	75.1
Prior-year current income tax	3.1	-15.2
Deferred tax – temporary differences	1,449.3	1,436.8
Deferred tax – unutilized loss carryforwards	-47.0	-25.2
	1,440.5	**1,471.5**

The current tax expense is determined on the basis of the taxable income for the fiscal year. For the 2018 fiscal year, the combined tax rate of corporate income tax and solidarity surcharge for domestic companies is 15.8% (2017: 15.8%). Including trade tax at a rate of about 17.3% (2017: 17.3%), the combined domestic tax rate is 33.1% in 2018 (2017: 33.1%). The corporate income tax rate for the companies based in

Austria is 25.0% (2017: 25.0%), while the rate for companies based in Sweden is 22.0%. The income generated by Vonovia Finance B. V. is subject to Dutch tax law; current taxes of € 3.1 million were incurred there (2017: € 2.3 million). 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.

Anticipated effects of the so-called extended trade tax exemption on trade tax are taken into account when the deferred taxes are determined. Due to the discontinuation of the extended trade tax exemption due to sales, triggering commercial real estate trading at four BUWOG companies, deferred tax liabilities are also subject to trade tax there, unlike in the previous year. This effect causes a deferred tax expense of € 29.5 million.

For domestic deductible temporary differences (excl. loss carryforwards) in the amount of € 15.2 million (Dec. 31, 2017: € 18.4 million), no deferred corporate income taxes or deferred trade taxes were recognized, because they are not likely to be used in the future. For Austrian and Swedish deductible differences (excl. loss carryforwards) in the amount of € 0.0 million (Dec. 31, 2017: € 15.8 million), no deferred corporate income taxes were recognized as a result.

As of December 31, 2018, there were domestic corporate income tax loss carryforwards amounting to € 3,949.5 million (Dec. 31, 2017: € 3,840.8 million), as well as trade tax loss carryforwards amounting to € 2,122.5 million (Dec. 31, 2017: € 2,040.1 million), for which deferred tax assets have been recognized to the extent that their realization is sufficiently probable. As of December 31, 2018, there were corporate income tax loss carryforwards in Austria and Sweden amounting to € 245.0 million (Dec. 31, 2017: € 165.4 million) and € 108.1 million (Dec. 31, 2017: € 0.0 million) respectively for which deferred tax assets have also been recognized to the extent that their realization is sufficiently probable. The increase in tax loss carryforwards resulted from current tax losses at individual companies and from the business combinations with the BUWOG and the Victoria Park Group.

No deferred taxes were recognized in the balance sheet for domestic and foreign corporate income tax loss carryforwards amounting to € 1,010.1 million (Dec. 31, 2017: € 968.4 million). Of this amount, € 30.6 million arose for the first time in the 2018 fiscal year (2017: € 29.0 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 € 5.4 million (2017: € 4.6 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 € 660.6 million in total (Dec. 31, 2017: € 623.2 million). These did not give rise to any deferred tax assets. Of this amount, € 29.4 million arose for the first time in the 2018 fiscal year (2017: € 25.0 million) and the resulting tax effect is € 4.6 million (2017: € 4.3 million).

The remeasurement of deferred tax assets on temporary differences and loss carryforwards from the previous year led to tax income amounting to € 10.0 million in the 2018 fiscal year (2017: € 27.7 million).

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 € 820.2 million (Dec. 31, 2017: € 675.5 million). In the 2018 fiscal year, non-deductible interest increased the interest carryforward by € 144.7 million (2017: € 104.6 million). The fact that no deferred tax assets were recognized on the new interest carryforward generated a tax effect of € 47.9 million (2017: € 34.6 million).

A reconciliation between actual 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	2017	2018
Earnings before tax	4,007.4	3,874.4
Income tax rate in %	33.1	33.1
Expected tax expense	1,326.4	1,282.4
Trade tax effects	-16.0	-7.6
Non-deductible operating expenses	23.5	18.4
Tax-free income	-19.0	-19.8
Change in the deferred tax assets on loss carryforwards and temporary differences	-27.7	-10.0
New loss and interest carryforwards not recognized	43.5	57.8
Prior year current income tax and taxes on guaranteed dividends	7.4	-10.8
Tax effect goodwill impairment	111.7	225.5
Differing foreign tax rates	-15.4	-30.8
Other tax effects (net)	6.1	-33.6
Effective income taxes	**1,440.5**	**1,471.5**
Effective income tax rate in %	**35.9**	**38.0**

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

in € million	Dec. 31, 2017	Dec. 31, 2018
Intangible assets	2.9	3.6
Investment properties	8.9	4.3
Assets held for sale	0.9	0.6
Property, plant and equipment	0.4	1.3
Financial assets	5.4	8.7
Other assets	52.2	89.0
Provisions for pensions	82.2	82.6
Other provisions	11.9	17.5
Liabilities	100.3	183.1
Loss carryforwards	731.8	789.5
Deferred tax assets	**996.9**	**1,180.2**

in € million	Dec. 31, 2017	Dec. 31, 2018
Intangible assets	5.0	22.4
Investment properties	6,171.6	8,165.1
Assets held for sale	23.9	16.2
Property, plant and equipment	6.9	11.1
Financial assets	0.0	0.0
Other assets	12.6	41.2
Other provisions	52.0	54.9
Liabilities	37.2	47.1
Deferred tax liabilities	**6,309.2**	**8,358.0**
Excess deferred tax liabilities	**5,312.3**	**7,177.8**

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, 2017	Dec. 31, 2018
Deferred tax assets	10.3	54.1
Deferred tax liabilities	5,322.6	7,231.9
Excess deferred tax liabilities	**5,312.3**	**7,177.8**

The increase in deferred tax assets is mainly due to deferred taxes on loss carryforwards of the Swedish companies that were not netted, while the increase in deferred tax liabilities is primarily attributable to investment properties.

The change in deferred taxes is as follows:

in € million	2017	2018
Excess deferred tax liabilities as of Jan. 1	3,749.9	5,312.3
Deferred tax expense in income statement	1,402.3	1,411.7
Deferred tax due to first-time consolidation	149.1	459.0
Change recognized in other comprehensive income in deferred taxes due to equity instruments measured at fair value	2.4	0.9
Change recognized in other comprehensive income in deferred taxes on actuarial gains and losses from pensions and similar obligations	1.8	-2.7
Change recognized in other comprehensive income in deferred taxes on derivative financial instruments	7.4	-2.0
Deferred taxes recognized in equity on accrued capital procurement costs resulting from the issuance of a hybrid bond with an indefinite term	-0.2	-0.5
Deferred taxes recognized in the capital reserve on capital procurement costs of capital increases	–	-3.6
Currency translation differences	–	2.4
Other	-0.4	0.3
Excess deferred tax liabilities as of Dec. 31	**5,312.3**	**7,177.8**

No deferred tax liabilities are recognized for profits accumulated at subsidiaries of € 22,416.7 million (Dec. 31, 2017: € 15,108.4 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.

20 Earnings per Share

The 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.

	2017	2018
Profit for the period attributable to Vonovia shareholders (in € million)	2,410.7	2,266.5
Weighted average number of shares	476,462,903	505,720,971
Earnings per share (basic and diluted) in €	**5.06**	**4.48**

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.

Notes to the Consolidated Balance Sheet

21 Intangible Assets

in € million	Concessions, industrial property rights, licenses and similar rights	Self-developed software	Customer relationships and non-competition clause	Trademark rights	Goodwill	Total
Cost						
As of Jan. 1, 2018	37.3	6.5	12.1	–	2,950.8	3,006.7
Additions due to business combinations	19.6	–	–	66.6	906.4	992.6
Additions	17.5	1.0	–	–	–	18.5
Disposals	-9.6	-0.8	-3.6	–	–	-14.0
Changes in value from currency translation	–	–	–	–	3.7	3.7
Transfers	3.5	–	–	–	–	3.5
As of Dec. 31, 2018	68.3	6.7	8.5	66.6	3,860.9	4,011.0
Accumulated amortization						
As of Jan. 1, 2018	23.7	3.3	5.3	–	337.3	369.6
Additions due to business combinations	9.1	–	–	–	–	9.1
Amortization in reporting year	15.7	2.4	1.1	–	–	19.2
Impairment	–	–	–	–	681.2	681.2
Disposals	-9.3	-0.8	-3.6	–	–	-13.7
Transfers	2.4	–	–	–	–	2.4
As of Dec. 31, 2018	41.6	4.9	2.8	–	1,018.5	1,067.8
Carrying amounts						
As of Dec. 31, 2018	26.7	1.8	5.7	66.6	2,842.4	2,943.2
Cost						
As of Jan. 1, 2017	31.2	4.7	12.1	–	2,718.9	2,766.9
Additions due to business combinations	8.2	–	–	–	231.9	240.1
Additions	7.6	1.8	–	–	–	9.4
Disposals	-9.7	–	–	–	–	-9.7
As of Dec. 31, 2017	37.3	6.5	12.1	–	2,950.8	3,006.7
Accumulated amortization						
As of Jan. 1, 2017	19.8	1.6	2.4	–	–	23.8
Additions due to business combinations	4.7	–	–	–	–	4.7
Amortization in reporting year	8.9	1.7	2.9	–	–	13.5
Impairment	–	–	–	–	337.3	337.3
Disposals	-9.7	–	–	–	–	-9.7
As of Dec. 31, 2017	23.7	3.3	5.3	–	337.3	369.6
Carrying amounts						
As of Dec. 31, 2017	13.6	3.2	6.8	–	2,613.5	2,637.1

Customer relationships and similar values

The brand name "BUWOG Group" for the development business was identified within the framework of the purchase price allocation for BUWOG as a material asset with indefinite useful life and recognized at a value of € 66.6 million.

Goodwill

Goodwill came to € 2,842.4 million as of December 31, 2018. Compared with December 31, 2017, goodwill has increased by € 228.9 million. The change is due, first, to an increase resulting from the acquisition of BUWOG in 2018 in the amount of € 713.6 million, the addition from the Victoria Park acquisition and associated currency effects of € 196.5 million in total. Second, the € 3,517.9 million increase in the value of the real estate portfolio in the 2018 fiscal year increased the carrying amount of the groups of cash-generating units (regions) affected by the valuation, which in turn led to impairment losses being recognized on the goodwill allocated to the regions in the amount of € 681.2 million.

The allocation of goodwill to the regional business areas and to the Value-add and Development segments was 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."

In the fourth quarter, the mandatory annual impairment test was performed. As part of the impairment test and 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 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 4.0% every year, as well as the planned vacancy rate on the level of 2018 at the end of the detailled planning period.

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

For the Development segment, which is still being set up, a six-year plan was derived from the five-year plan approved by the Management Board and the Supervisory Board at Group level to reflect a "steady state." The main drivers of the results in the Development segment are the investment costs, the number of units sold and the sales margin that can be generated.

The growth rate for the CGUs of the rental segment was calculated regionally on the basis of actual rents and limited to 1% for the segment as a whole. A constant growth rate of 1% was assumed for the Value-add and Development segments.

The main parameters for calculating the value in use are the sustainable growth rate, the weighted average cost of capital (WACC) and the expected cash flows.

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, country-specific cost surcharges were calculated for the Austria business area, the Sweden business area and the Development business area. The main parameters are shown in the following table:

Dec. 31, 2018	Rental Germany	Rental Austria	Rental Sweden	Value-add	Development
Risk-free interest rate in %	1.1	1.1	1.1	1.1	1.1
Market risk premium in %	7.0	7.0	7.0	7.0	7.0
Levered beta	0.53	0.53	0.53	0.53	0.91
Country-specific premium in %	–	0.2	0.2	–	0.1

Dec. 31, 2017	Rental Germany	Rental Austria	Rental Sweden	Value-add	Development
Risk-free interest rate in %	1.3	–	–	1.3	–
Market risk premium in %	6.8	–	–	6.8	–
Levered beta	0.54	–	–	0.54	–
Country-specific premium in %	–	–	–	–	–

Groups of Cash-generating Units

	Segment Rental											
in € million	North area	East area	South-east area	West area	Middle area	South area	Central area	Austria Business Area	Sweden Business Area	Segment Value-add	Segment Develop-ment	Group
Goodwill 2017	521.0	–	370.0	576.0	432.3	488.3	13.8	–	–	212.1	–	2,613.5
Additions due to business combinations	111.8	75.3	70.6	104.8	69.0	72.5	5.4	31.6	196.6	66.4	106.1	910.1
Disposal due to depreciation	-299.3	-75.3	-5.0	–	–	-270.0	–	-31.6	–	–	–	-681.2
Goodwill 2018	333.5	–	435.6	680.8	501.3	290.8	19.2	–	196.6	278.5	106.1	2,842.4
WACC before tax 2018 in %	4.5	4.5	4.6	4.6	4.6	4.5	4.5	4.5	4.7	5.1	6.6	–
WACC before tax 2017 in %	4.5	4.5	4.5	4.6	4.5	4.5	4.5	n. a.	n. a.	4.7	n. a.	–
Sustainable rate of increase 2018 in %	1.0	1.1	1.0	0.8	1.1	1.1	1.0	1.0	1.0	1.0	1.0	1.0
Sustainable rate of increase 2017 in %	1.0	1.1	1.0	0.8	1.0	1.1	0.9	n. a.	n. a.	1.0	n. a.	1.0

The results of the assessment confirm the value of the goodwill for the areas West, Central, Development, Sweden and the Value-add segment. Any need for impairment of € 681.2 million was calculated for the North, East, Southeast, South and Austria business areas. In these regions, the further increase in property values due to noticeable yield compression resulted in carrying amounts for the relevant group of CGUs that exceed the recoverable amount.

The impairment loss was recognized in the consolidated income statement under “depreciation and amortization.” The value in use for the North area amounts to € 6.4 billion, with a value of € 4.9 billion for the East area, € 3.7 billion for the Southeast area, € 6.1 billion for the South area and € 1.9 billion for the Austria area.

An increase in the cost of capital will result in the following need for impairment:

	Segment Rental								
	North area	Southeast area	West area	Middle area	South area	Central area	Sweden area	Segment Value-add	Segment Develop-ment
Goodwill 2018 in € million	333.5	435.6	680.8	501.3	290.8	19.2	196.6	278.5	106.1
Amortization in € million based on an increase in WACC by 0.1%	259.6	155.8	–	225.6	257.5	–	–	–	–
Inpairment starts with an increase of the WACC in percentage points	–	–	0.2	–	–	0.6	0.3	8.4	1.6
Full write-off in the event of an increase in the WACC in %	0.2	0.3	0.6	0.3	0.2	0.8	0.7	20.4	2.4

Any negative deviation of the values planned for the key assumptions would lead to a further impairment in the North, South and Southeast business areas. If the planned sustainable growth rate were to decline by 0.25 percentage points, the goodwill remaining would be written off entirely in the North, Central and South business areas, while impairment losses of up to € 350 million would be incurred in the Southeast business area.

22 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, 2018	104.5	43.1	77.4	225.0
Additions due to business combinations	21.3	0.1	5.4	26.8
Additions	22.4	3.0	66.2	91.6
Capitalized modernization costs	1.6	–	–	1.6
Disposals	-1.8	-0.2	-19.8	-21.8
Transfer from investment properties	6.5	–	–	6.5
Transfer to investment properties	-10.7	–	–	-10.7
Other transfers	–	–	1.1	1.1
As of Dec. 31, 2018	143.8	46.0	130.3	320.1
Accumulated depreciation				
As of Jan. 1, 2018	5.0	14.8	27.6	47.4
Additions due to business combinations	0.2	–	3.4	3.6
Depreciation in reporting year	2.2	6.0	29.5	37.7
Reversal of impairments	-0.5	–	–	-0.5
Disposals	-0.6	-0.2	-18.9	-19.7
Other transfers	–	–	1.2	1.2
As of Dec. 31, 2018	6.3	20.6	42.8	69.7
Carrying amounts				
As of Dec. 31, 2018	137.5	25.4	87.5	250.4
Cost				
As of Jan. 1, 2017	70.6	36.5	46.9	154.0
Additions due to business combinations	–	0.2	2.9	3.1
Additions	40.2	7.1	39.2	86.5
Capitalized modernization costs	1.1	–	–	1.1
Disposals	-2.3	-0.7	-11.6	-14.6
Transfer from investment properties	12.9	–	–	12.9
Transfer to investment properties	-18.0	–	–	-18.0
As of Dec. 31, 2017	104.5	43.1	77.4	225.0
Accumulated depreciation				
As of Jan. 1, 2017	6.1	9.7	22.5	38.3
Additions due to business combinations	–	0.1	1.8	1.9
Depreciation in reporting year	0.7	5.7	14.3	20.7
Impairment	0.7	–	–	0.7
Reversal of impairments	-0.6	–	–	-0.6
Disposals	-1.9	-0.7	-11.0	-13.6
As of Dec. 31, 2017	5.0	14.8	27.6	47.4
Carrying amounts				
As of Dec. 31, 2017	99.5	28.3	49.8	177.6

As of December 31, 2018, the item "Owner-occupied properties" includes € 63.3 million (Dec. 31, 2017: € 49.2 million) which mainly consists of production costs for the construction of the new Vonovia headquarters.

Furthermore, carrying amounts of owner-occupied properties amounting to € 35.1 million as of December 31, 2018 (Dec. 31, 2017: € 18.0 million), are encumbered with land charges in favor of various lenders.

23 Investment Properties

in € million	
As of Jan. 1, 2018	33,182.8
Additions due to business combinations	6,214.7
Additions	365.8
Capitalized modernization costs	1,006.0
Grants received	-2.6
Transfer from property, plant and equipment	10.7
Transfer to property, plant and equipment	-6.5
Transfer from assets held for sale	24.4
Transfer to assets held for sale	-323.9
Disposals	-597.6
Disposals due to changes in scope of consolidation	-2.3
Net income from fair value adjustments of investment properties	3,517.9
Revaluation of assets held for sale	68.5
Revaluation from currency effects	33.0
As of Dec. 31, 2018	**43,490.9**
As of Jan. 1, 2017	26,980.3
Additions due to business combinations	2,469.6
Additions	307.2
Capitalized modernization costs	771.8
Grants received	-0.6
Transfer from property, plant and equipment	18.0
Transfer to property, plant and equipment	-12.9
Transfer from assets held for sale	2.5
Transfer to assets held for sale	-471.4
Disposals	-396.5
Net income from fair value adjustments of investment properties	3,434.1
Revaluation of assets held for sale	81.1
Revaluation from currency effects	-0.4
As of Dec. 31, 2017	**33,182.8**

The additions in 2018 include € 86.9 million (Dec.31, 2017: € 65.7 million) in production costs for new construction activities.

In the amount of € 71.0 million (Dec. 31, 2017: € 59.9 million), the investment properties contain leased assets that are defined as finance leases according to IAS 17 and are treated as if they were the Group's economic property. These relate to the Spree-Bellevue (Spree-Schlange) property in Berlin. The property has been leased from 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 property 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. Details of minimum lease payments are given under note [37] Non-derivative Financial Liabilities.

For the investment properties encumbered with land charges in favor of various lenders, see note [35] Non-derivative Financial Liabilities.

Directly Attributable Operating Expenses

Rental income from investment properties amounted to € 1,897.8 million during the fiscal year (2017: € 1,672.1 million). Operating expenses directly relating to these properties amounted to € 195.1 million during the fiscal year (2017: € 200.8 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 operating leases. The minimum future lease receipts from these leases are due as follows:

in € million	Dec. 31, 2017	Dec. 31, 2018
Total minimum lease payments	82.2	82.1
Due within 1 year	26.0	25.8
Due in 1 to 5 years	50.7	50.7
Due after 5 years	5.5	5.6

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) procedure. Under the DCF methodology, the expected future income and costs of a property are forecast over a period of ten years and discounted to the date of valuation as the net present value. The income mainly comprises expected rental income (current in-place rent, market rents as well as their development) taking vacancy losses into account. These are derived for each location from the latest rent indices and rent tables (empirica and IVD), as well as from studies on spatial prosperity (Federal Institute for Research on Building, Urban Affairs and Spatial Development (BBSR), Prognos, empirica, Bertelsmannstiftung, etc.).

On the cost side, maintenance expenses and administrative costs are taken into account in accordance with the II. Berechnungsverordnung and inflated in the reporting period (II. BV; German Regulation on Calculations for Residential Buildings in accordance with the Second Housing Construction Law, stipulating how economic viability calculations for accommodation are to be performed). Further cost items are, for example, ground rents, non-allocable ancillary costs and rent losses. 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. In addition, 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. inheritable 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 present value calculated in this way is reconciled to the market value by deducting standard market transaction costs, such as real estate transfer taxes, agent and notary costs.

The commercial properties in the portfolio are mainly small commercial units for the supply of the local residential area. Different cost approaches were 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, inheritable building rights and full or part ownership

The Vonovia portfolio also contains project developments, development areas and land areas with inheritable building rights. Project developments are measured at the capitalized construction costs until the construction work is complete. If the project is then to be managed within Vonovia's own portfolio, it is measured at fair value using the DCF procedure described above. Development areas 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.

Vonovia determined the fair values of Vonovia's real estate portfolio in Germany (excl. the BUWOG German subportfolios) as of December 31, 2018, in its in-house valuation department on the basis of the methodology described above. The property assets are also assessed by the independent property appraiser CBRE GmbH. The contractually fixed remuneration for the valuation report is not linked to the valuation results. The market value resulting from the external review deviates from the internal valuation result by less than 0.1%.

As far as the portfolio of BUWOG and the portfolio of non-German real estate of conwert is concerned, the result of the valuation of the external appraiser CBRE GmbH was applied. For the portfolio of Victoria Park, the result of the external appraiser Savills Sweden AB in cooperation with Malmöbryggan Fastighetsekonomi AB was applied. The fair values of the BUWOG, conwert and Victoria Park portfolio were also calculated using a DCF procedure that is comparable to the procedure used by Vonovia explained above. In addition, the valuation of the BUWOG portfolio in Austria was based on the assumption of sales strategies for the recurring sales of apartments for a subportfolio. Attainable income was recognized in line with the calculation procedure and reported in the appropriate period in the DCF model. In order to take the sales potential into account, the DCF detailed period was extended to 80 years for the Austrian properties and no terminal value was used.

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, contractual assets and assets held for sale. The fair value of the portfolio comprising residential buildings, commercial properties, garages and parking spaces, project developments, as well as undeveloped land and any inheritable building rights granted was € 44,239.9 million as of December 31, 2018 (Dec. 31, 2017: € 33,436.3 million). This corresponds to a net initial yield for the developed land of 3.4%* (December 31, 2017: 3.6%). For Germany, this results in an in-place-rent multiplier of 21.5 for the portfolio (Dec. 31, 2017: 19.7) and a fair value per m² of € 1,677 (Dec. 31, 2017: € 1,475). For the portfolio in Austria, the in-place-rent multiplier and fair value is 23.6 and € 1,346 per m²; for Sweden it is 14.6 and € 1,563 per m².

* Overall portfolio including Austria and Sweden.

The material valuation parameters for the investment properties (level 3) in the real estate portfolio are as follows as of December 31, 2018, broken down by regional markets:

Dec. 31, 2018	Valuation results*			
Regional market	Fair value (in € million)	thereof Assets held for sale (in € million)	thereof Owner-occupied properties (in € million)	thereof Investment properties (in € million)
Berlin	6,535.9	2.5	5.4	6,527.9
Rhine Main Area	3,949.6	20.9	6.3	3,922.4
Rhineland	3,424.5	2.8	7.9	3,413.8
Southern Ruhr Area	3,354.0	5.4	4.2	3,344.3
Dresden	3,104.1	0.0	5.5	3,098.6
Hamburg	2,456.1	0.3	3.0	2,452.8
Munich	2,050.6	9.8	3.1	2,037.7
Stuttgart	1,935.6	4.8	1.8	1,929.0
Kiel	1,909.9	0.0	2.5	1,907.4
Hanover	1,622.7	0.4	1.8	1,620.5
Northern Ruhr Area	1,566.8	12.1	4.5	1,550.2
Bremen	1,071.2	0.0	2.6	1,068.6
Leipzig	867.6	0.1	1.0	866.5
Westphalia	783.2	0.0	1.1	782.1
Freiburg	602.4	0.2	2.0	600.2
Other strategic locations	2,604.6	6.1	3.9	2,594.7
Total strategic locations	**37,838.9**	**65.3**	**56.9**	**37,716.7**
Non-strategic locations	789.5	29.0	1.4	759.2
Vonovia Germany	**38,628.4**	**94.3**	**58.2**	**38,475.8**
Vonovia Austria**	2,517.0	0.0	0.0	2,517.0
Vonovia Sweden**	1,737.7	0.0	0.0	1,737.7

* Fair value of the developed land excluding € 1,356.8 million in development, undeveloped land, inheritable building rights granted and other, thereof € 760.4 million in investment properties.
** The valuation methods for the properties in Austria and Sweden provided only partially comparable valuation parameters. Administrative and maintenance expenses are not shown separately.

Valuation parameters investment properties (Level 3)						
Management costs residential (€per residential unit p. a.)	**Maintenance costs total residential (€ per m² p. a.)**	**Market rent residential (€ per m² per month)**	**Market rent increase residential**	**Stabilized vacancy rate residential**	**Discount rate total**	**Capitalized interest rate total**
251	14.29	7.38	1.8%	1.3%	4.4%	2.7%
274	14.20	8.81	1.8%	1.2%	5.1%	3.5%
271	13.81	7.68	1.7%	2.0%	5.3%	3.8%
267	12.78	6.42	1.5%	2.5%	5.4%	4.1%
239	14.36	6.73	1.7%	2.0%	5.6%	4.2%
259	14.50	8.03	1.6%	1.4%	5.0%	3.6%
262	13.88	10.66	1.8%	0.6%	4.8%	3.1%
272	14.41	8.73	1.8%	1.3%	5.2%	3.5%
259	14.62	6.80	1.6%	1.7%	5.2%	3.9%
260	14.14	7.03	1.7%	2.0%	5.4%	3.9%
269	13.33	6.06	1.2%	3.4%	5.7%	4.8%
264	13.25	6.33	1.8%	2.1%	5.2%	3.6%
255	14.65	6.33	1.7%	3.6%	5.3%	3.8%
264	13.41	6.65	1.5%	1.8%	5.5%	4.2%
270	14.86	7.96	1.7%	0.9%	4.8%	3.2%
268	14.46	7.20	1.6%	2.3%	5.4%	4.0%
262	**13.98**	**7.29**	**1.7%**	**1.9%**	**5.2%**	**3.6%**
259	14.50	6.90	1.7%	2.8%	5.5%	3.9%
262	**13.99**	**7.28**	**1.7%**	**2.0%**	**5.2%**	**3.6%**
n.a.	n.a.	5.87	0.9%	n.a.	5.2%	n.a.
n.a.	n.a.	9.20	2.0%	0.7%	6.1%	4.2%

Dec. 31, 2017 Regional market	Valuation results* Fair value (in € million)	thereof Assets held for sale (in € million)	thereof Owner-occupied properties (in € million)	thereof Investment properties (in € million)
Berlin	5,181.9	12.6	7.0	5,162.3
Rhine Main Area	3,525.1	3.2	5.7	3,516.2
Rhineland	3,240.3	2.2	7.6	3,230.5
Southern Ruhr Area	2,884.2	2.8	3.7	2,877.7
Dresden	2,875.2	0.0	5.1	2,870.1
Hamburg	1,940.1	2.5	2.9	1,934.7
Munich	1,820.2	6.6	2.4	1,811.2
Stuttgart	1,742.0	1.7	2.5	1,737.8
Northern Ruhr Area	1,417.5	2.3	3.8	1,411.5
Hanover	1,297.5	1.1	1.3	1,295.1
Kiel	992.3	4.5	2.8	985.1
Bremen	913.9	0.0	3.5	910.3
Leipzig	763.3	0.0	5.1	758.2
Westphalia	667.0	0.0	1.0	666.0
Freiburg	545.0	0.2	1.9	542.9
Other strategic locations	2,102.8	4.3	4.5	2,094.0
Total strategic locations	**31,908.2**	**44.0**	**60.8**	**31,803.5**
Non-strategic locations	645.1	68.9	1.0	575.2
Vonovia Germany	**32,553.3**	**112.9**	**61.7**	**32,378.6**
Vonovia Austria **	551.6	3.3	0	548.3

* Fair value of the developed land excluding € 331.4 million in development, undeveloped land, inheritable building rights granted, assets under construction and other, thereof € 255.9 million in investment properties.
** The gross rental method for the portfolio in Austria uses valuation parameters that are only partially comparable.

The inflation rate applied to the DCF procedure is 1.6%. Net income from the valuation of investment properties amounted to € 3,517.9 million in the 2018 fiscal year (Dec. 31, 2017: € 3,434.1 million). For the Austrian portfolio, a sales strategy with an average selling price of € 1,953 per m² was assumed for 49.4% of the properties.

Sensitivity Analyses

The sensitivity analyses performed on Vonovia's real estate portfolio show the impact of the value drivers influenced by the market. 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 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 payment flows, which is then reflected in adjusted amounts recognized for 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.

Valuation parameters investment properties (Level 3)						
Management costs residential (€per residential unit p. a.)	**Maintenance costs total residential (€ per m² p. a.)**	**Market rent residential (€ per m² per month)**	**Market rent increase residential**	**Stabilized vacancy rate residential**	**Discount rate total**	**Capitalized interest rate total**
251	14.02	6.98	1.5%	1.4%	4.3%	2.9%
271	14.05	8.43	1.4%	1.3%	5.1%	3.7%
267	13.58	7.52	1.3%	2.0%	5.3%	4.0%
263	12.96	6.18	1.1%	2.6%	5.5%	4.5%
236	14.59	6.47	1.3%	2.1%	5.4%	4.3%
257	14.22	7.76	1.3%	1.3%	4.9%	3.8%
258	13.79	10.69	1.5%	0.6%	4.9%	3.4%
269	14.21	8.41	1.4%	1.5%	5.2%	3.8%
266	13.31	5.79	0.9%	3.6%	5.8%	5.1%
256	13.89	6.70	1.3%	1.9%	5.3%	4.0%
255	14.39	6.37	1.2%	1.7%	5.3%	4.3%
259	13.28	6.09	1.3%	2.4%	5.1%	3.9%
252	14.34	6.16	1.4%	4.0%	5.3%	4.0%
259	13.44	6.17	1.2%	2.0%	5.5%	4.4%
266	14.36	7.72	1.4%	1.0%	4.8%	3.4%
267	13.82	6.96	1.2%	2.1%	5.3%	4.1%
259	**13.82**	**7.01**	**1.3%**	**2.0%**	**5.2%**	**3.8%**
269	13.43	5.51	1.0%	5.6%	5.7%	5.0%
259	**13.81**	**6.96**	**1.3%**	**2.1%**	**5.2%**	**3.9%**
n.a.	n.a.	9.15	n.a.	n.a.	n.a.	3.3%

In addition, factors other than demand can have an impact on these parameters. Examples include changes in the housing stock, in seller and buyer behavior, political decisions and developments on the capital market.

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.

Dec. 31, 2018	Change in value as a percentage under varying parameters		
	Management costs residential	**Maintenance costs residential**	**Cost increase/ inflation**
Regional market	**-10%/+10%**	**-10%/+10%**	**-0.5%/+0.5% points**
Berlin	0.5/-0.5	1.7/-1.7	4.7/-4.8
Rhine Main Area	0.5/-0.5	1.5/-1.5	2.9/-3.0
Rhineland	0.5/-0.5	1.8/-1.8	3.4/-3.6
Southern Ruhr Area	0.8/-0.8	2.4/-2.3	4.4/-4.5
Dresden	0.7/-0.7	2.1/-2.1	3.9/-4.0
Hamburg	0.6/-0.6	1.8/-1.8	3.4/-3.5
Munich	0.4/-0.4	1.2/-1.2	3.4/-3.5
Stuttgart	0.5/-0.5	1.5/-1.5	3.0/-3.2
Kiel	0.8/-0.8	2.1/-2.1	2.7/-2.9
Hanover	0.6/-0.6	2.0/-2.0	3.5/-3.7
Northern Ruhr Area	1.0/-1.0	2.8/-2.8	4.4/-4.6
Bremen	0.8/-0.7	2.2/-2.2	4.9/-5.0
Leipzig	0.7/-0.7	2.3/-2.3	4.8/-4.9
Westphalia	0.7/-0.7	2.4/-2.4	4.0/-4.1
Freiburg	0.5/-0.5	1.8/-1.7	3.7/-3.8
Other strategic locations	0.6/-0.7	2.0/-2.0	3.3/-3.4
Total strategic locations	**0.6/-0.6**	**2.1/-2.0**	**3.0/-3.1**
Non-strategic locations	0.6/-0.6	1.9/-1.9	3.8/-3.9
Vonovia Germany	**0.6/-0.6**	**1.9/-1.9**	**3.8/-3.9**
Vonovia Austria*	n. a.	n. a.	n. a.
Vonovia Sweden*	n. a.	n. a.	1.5/-1.5

* The valuation methods for the portfolio in Austria and Sweden use valuation parameters that are only partially comparable. Administrative and maintenance expenses are not shown separately.

Change in value as a percentage under varying parameters			
Market rent residential	**Market rent increase residential**	**Stabilized vacancy rate residential**	**Discounting and capitalized interest rates total**
-2.0% / +2.0%	**-0.2% / +0.2% points**	**-1% / +1% point**	**-0.25% / +0.25% points**
-2.3 / 2.3	-8.7 / 10.4	1.7 / -1.7	10.6 / -8.8
-2.3 / 2.3	-6.4 / 7.3	1.2 / -1.6	7.7 / -6.7
-2.3 / 2.3	-6.3 / 7.1	1.7 / -1.8	7.3 / -6.4
-2.4 / 2.5	-6.4 / 7.2	2.1 / -2.1	6.8 / -6.0
-2.5 / 2.5	-6.1 / 6.9	1.9 / -1.9	6.8 / -6.0
-2.1 / 2.1	-6.6 / 7.6	1.3 / -1.7	8.0 / -6.9
-2.1 / 2.1	-7.4 / 8.7	0.8 / -1.5	9.5 / -8.0
-2.2 / 2.2	-6.4 / 7.3	1.4 / -1.6	7.6 / -6.6
-2.1 / 2.0	-5.8 / 6.6	1.8 / -1.8	6.9 / -6.1
-2.3 / 2.2	-6.2 / 7.0	1.8 / -1.8	7.1 / -6.3
-2.6 / 2.6	-5.7 / 6.3	2.3 / -2.3	5.6 / -5.1
-2.3 / 2.3	-6.9 / 8.0	1.9 / -1.9	7.7 / -6.6
-2.5 / 2.5	-6.8 / 7.8	2.0 / -2.0	7.5 / -6.5
-2.3 / 2.3	-6.0 / 6.8	1.9 / -2.0	6.5 / -5.8
-2.3 / 2.3	-7.2 / 8.5	1.3 / -1.7	8.6 / -7.3
-2.2 / 2.2	-6.0 / 6.8	1.7 / -1.8	6.9 / -6.0
-2.2 / 2.4	**-6.6 / 7.7**	**2.1 / -1.8**	**8.0 / -7.0**
-2.3 / 2.3	-6.8 / 7.8	1.7 / -1.8	7.9 / -6.8
-2.3 / 2.3	**-6.8 / 7.8**	**1.7 / -1.8**	**7.9 / -6.8**
-0.1 / 0.1	n. a.	n. a.	4.2 / -3.8
-3.0 / 3.0	-1.3 / 1.3	1.2 / -1.7	5.3 / -4.7

	Change in parameters		
Dec. 31, 2017	**Management costs residential**	**Maintenance costs residential**	**Cost increase/inflation**
Regional market	**-10% / +10%**	**-10% / +10%**	**-0.5% / +0.5% points**
Berlin	0.6 / -0.6	2.1 / -2.0	5.3 / -5.4
Rhine Main Area	0.6 / -0.5	1.7 / -1.7	3.2 / -3.3
Rhineland	0.6 / -0.6	1.9 / -1.9	3.5 / -3.6
Southern Ruhr Area	0.9 / -0.9	2.6 / -2.6	4.4 / -4.5
Dresden	0.8 / -0.8	2.4 / -2.4	4.2 / -4.3
Hamburg	0.6 / -0.6	2.0 / -2.0	3.9 / -4.0
Munich	0.4 / -0.4	1.3 / -1.3	3.3 / -3.4
Stuttgart	0.5 / -0.5	1.7 / -1.7	3.3 / -3.4
Northern Ruhr Area	1.1 / -1.1	3.1 / -3.1	4.7 / -4.8
Hanover	0.7 / -0.7	2.3 / -2.3	4.1 / -4.2
Kiel	0.9 / -0.9	2.6 / -2.6	4.4 / -4.5
Bremen	0.9 / -0.9	2.7 / -2.7	5.4 / -5.5
Leipzig	0.8 / -0.8	2.5 / -2.5	5.0 / -5.0
Westphalia	0.9 / -0.9	2.8 / -2.8	4.6 / -4.7
Freiburg	0.6 / -0.6	1.9 / -1.9	3.9 / -4.0
Other strategic locations	0.7 / -0.7	2.2 / -2.2	3.8 / -4.0
Total strategic locations	0.7 / -0.7	2.2 / -2.1	4.2 / -4.3
Non-strategic locations	1.1 / -1.1	3.4 / -3.4	5.5 / -5.5
Vonovia Germany	**0.7 / -0.7**	**2.2 / -2.2**	**4.2 / -4.3**
Vonovia Austria *	n. a.	n. a.	n. a.

* The gross rental method for the portfolio in Austria uses 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, 2018, around 133,000 units in Vonovia's portfolio were subject to one or several contractual restrictions or other obligations.

> Sale restrictions: As of December 31, 2018, around 62,000 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 units and provisions requiring the consent of certain representatives of the original seller prior to sale.
> Preemptive rights on preferential terms: Around 7,000 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 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.
> Restrictions on the termination of rent agreements: Around 97,000 units are affected by restrictions on the termination of rent 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 ban on the termination of rent agreements.
> Expenses for minimum maintenance and restrictions on maintenance and modernization measures: Due to the expiry of minimum maintenance obligations in several portfolios, the number of residential units affected by minimum maintenance obligations has fallen to around 54,000. As several minimum maintenance obligations in varying amounts no longer apply, the weighted average of

	Change in parameters			
	Market rent residential	Market rent increase residential	Stabilized vacancy rate residential	Discounting and capitalized interest rates total
	-2.0%/+2.0%	-0.2%/+0.2% points	-1%/+1% point	-0.25%/+0.25% points
	-2.4/2.4	-8.5/10.1	1.9/-1.9	10.0/-8.3
	-2.2/2.3	-6.2/7.1	1.3/-1.7	7.4/-6.4
	-2.2/2.3	-6.0/6.8	1.8/-1.8	6.9/-6.1
	-2.4/2.4	-5.8/6.5	2.1/-2.2	6.0/-5.4
	-2.3/2.3	-6.0/6.7	2.0/-2.0	6.5/-5.8
	-2.2/2.2	-6.5/7.5	1.4/-1.8	7.6/-6.7
	-2.0/2.0	-6.8/7.9	0.8/-1.6	8.6/-7.4
	-2.2/2.2	-6.1/6.9	1.6/-1.7	7.1/-6.2
	-2.6/2.6	-5.5/6.1	2.4/-2.4	5.3/-4.8
	-2.3/2.3	-6.1/6.9	1.9/-1.9	6.8/-6.0
	-2.4/2.4	-6.1/6.9	2.1/-2.0	6.4/-5.7
	-2.3/2.3	-6.7/7.8	2.1/-2.1	7.2/-6.3
	-2.5/2.5	-6.5/7.5	2.1/-2.1	7.0/-6.1
	-2.4/2.3	-6.0/6.7	2.1/-2.2	6.2/-5.5
	-2.4/2.3	-7.1/8.1	1.4/-1.8	8.1/-7.0
	-2.3/2.4	-6.0/6.9	1.9/-1.9	6.6/-5.9
	-2.3/2.3	**-6.5/7.5**	**1.8/-1.9**	**7.4/-6.4**
	-2.6/2.6	-5.9/6.6	2.5/-2.5	5.7/-5.1
	-2.3/2.3	**-6.5/7.5**	**1.8/-1.9**	**7.4/-6.4**
	-1,6/1,6	n. a.	n. a.	7,3/-6,7

the annual necessary spending on maintenance and modernization has changed to € 15.94 per m². Furthermore, around 53,000 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 60,000 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 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.

Due to their structure and content, the aforementioned contractual obligations have no significant effect on the valuation of the investment properties.

24 Financial Assets

in € million	Dec. 31, 2017 non-current	Dec. 31, 2017 current	Dec. 31, 2018 non-current	Dec. 31, 2018 current
Joint venture investments valued at equity	7.0	–	29.1	–
Other investments	644.7	–	792.1	–
Loans to other investments	33.4	–	33.4	–
Securities	3.6	–	4.0	–
Other non-current loans	4.3	–	10.2	–
Derivatives	5.0	0.5	20.0	0.8
	698.0	**0.5**	**888.8**	**0.8**

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

The other investments include € 672.8 million (Dec. 31, 2017: € 613.3 million) in shares in Deutsche Wohnen SE and € 87.0 million (Dec. 31, 2017: 0,0 million) in shares in OPPCI Juno, Paris, at fair value.

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

Derivatives include positive market values from cross currency swaps in the amount of € 15.7 million (Dec. 31, 2017: € 5.0 million), together with positive market values in the amount of € 4.3 million (Dec. 31, 2017: € 0.0 million) from embedded derivatives and other interest rate derivatives of Victoria Park.

25 Other Assets

in € million	Dec. 31, 2017 non-current	Dec. 31, 2017 current	Dec. 31, 2018 non-current	Dec. 31, 2018 current
Right to reimbursement for transferred pensions	5.3	–	4.7	–
Receivables from insurance claims	1.6	17.8	1.2	16.6
Miscellaneous other assets	6.9	80.6	6.3	97.8
	13.8	**98.4**	**12.2**	**114.4**

The right to reimbursement for transferred pensions is in connection with the indirect obligation shown under provisions for pensions arising from pension obligations 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 pre-retirement part-time work arrangement obligations amounting to € 0.2 million (Dec. 31, 2017: € 0.5 million).

26 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 financial year 2018 mainly results from reimbursement claims referring to paid capital gains tax including solidarity surcharge in the amount of € 65.5 million.

27 Inventories

The raw materials and supplies recognized relate to repair materials for our craftsmen's organization.

28 Trade Receivables

The trade receivables break down as follows:

in € million	Impaired		Not impaired						Carrying amount
	Gross amount	Impairment 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	Corresponds to maximum risk of loss*
Receivables from the sale of investment properties	5.6	-3.1	186.7	18.8	2.6	34.6	3.0	10.4	258.6
Receivables from the sale of real estate properties	–	–	71.0	–	–	–	–	–	71.0
Contract assets	–	–	107.7	3.4	1.2	0.2	–	–	112.5
Receivables from property letting	80.7	-36.3	–	–	–	–	–	–	44.4
Receivables from other management	–	–	0.5	–	–	–	–	–	0.5
Receivables from other supplies and services	6.0	-0.1	–	–	–	–	–	–	5.9
As of Dec. 31, 2018	**92.3**	**-39.5**	**365.9**	**22.2**	**3.8**	**34.8**	**3.0**	**10.4**	**492.9**
Receivables from the sale of investment properties	4.9	-4.2	79.1	82.3	8.6	20.6	7.2	2.7	201.2
Receivables from the sale of real estate properties	–	–	–	–	–	–	–	–	–
Contract assets	–	–	–	–	–	–	–	–	–
Receivables from property letting	69.6	-37.4	–	–	–	–	–	–	32.2
Receivables from other management	–	–	0.5	–	–	–	–	–	0.5
Receivables from other supplies and services	1.2	-0.2	–	–	–	–	–	–	1.0
As of Dec 31, 2017	75.7	-41.8	79.6	82.3	8.6	20.6	7.2	2.7	234.9

* 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.

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

The receivables from the sale of real estate inventories and the contract assets reported in the current fiscal year result entirely from the takeover of BUWOG.

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 rental of residential 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 underlying average receivables portfolio excludes individually impaired receivables that were fully depreciated.

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. Receivables from property letting were already subject to corresponding impairments under IAS 39.

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

Impairment losses on trade receivables developed as follows:

in € million	
Impairment losses as of Jan. 1, 2018	41.8
Addition	24.1
Addition due to business combinations	6.9
Utilization	-30.8
Reversal	-2.5
Impairment losses as of Dec. 31, 2018	**39.5**
Impairment losses as of Jan. 1, 2017	27.0
Addition	22.2
Addition due to business combinations	20.0
Utilization	-27.3
Reversal	-0.1
Impairment losses as of Dec. 31, 2017	41.8

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 € 8.1 million, was set up depending on the lease term. In cases involving payment difficulties, the provision corresponded to between 40% and 95% of the receivables and amounted to € 4.9 million in total. The risk provisions for former tenants correspond to 95% of the receivables and amount to € 13.4 million in total.

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	2017	2018
Expenses for the derecognition of receivables	3.4	2.8
Income from the receipt of derecognized receivables	5.4	3.8

29 Cash and Cash Equivalents

Cash and cash equivalents include cash on hand, checks and deposits at banking institutions totaling € 547.7 million (Dec. 31, 2017: € 266.2 million).

€ 57.2 million (Dec. 31, 2017: € 36.3 million) of the bank balances are restricted with regard to their use.

30 Real Estate Inventories

Recognized real estate inventories in the amount of € 307.1 million (December 31, 2017: € 0.0 million) mainly concern all development projects that result from the inclusion of the BUWOG Group. 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 item also includes undeveloped land that will be used for future project developments. Because of the intention to sell, valuation is not made in accordance with IAS 40 but according to IAS 2 at amortized cost less accumulated depreciation or at net realizable value, whichever is lower.

31 Assets Held for Sale

The assets held for sale include properties totaling € 105.9 million (Dec. 31, 2017: € 142.6 million) for which notarized purchase contracts had already been signed as of the reporting date.

32 Total Equity

Development of the Subscribed Capital

in €

As of Jan. 1, 2018	485,100,826.00
Capital increase against cash contributions on May 11, 2018	26,000,000.00
Capital increase against non-cash contributions on June 12, 2018 (scrip dividend)	6,977,108.00
As of Dec. 31, 2018	**518,077,934.00**

Development of the Capital Reserves

in €

As of Jan. 1, 2018	5,966,315,814.06
Premium from capital increase on May 11, 2018	969,800,000.00
Premium from capital increase for scrip dividend on June 12, 2018	254,580,716.70
Transaction costs on the issue of new shares (after allowing for deferred taxes)	-7,436,753.64
Other changes not affecting net income	163,397.27
As of Dec. 31, 2018	**7,183,423,174.39**

On May 11, 2018, Vonovia SE increased the share capital in return for a cash contribution, partially using the 2016 authorized capital and excluding a subscription right, by € 26,000,000.00 from € 485,100,826.00 to € 511,100,826.00.

The 26,000,000 new no-par-value registered shares were placed with institutional investors in the scope of a private placement by means of an accelerated bookbuilding procedure and carry dividend rights as of January 1, 2018.

The shares were granted at a placement price of € 38.30 per share, delivering issue proceeds to Vonovia SE in the amount of € 995.8 million before commission and expenses.

Authorized Capital

The 2016 and 2017 authorized capital was canceled by way of a resolution passed by the Annual General Meeting on May 9, 2018, in Bochum, and a new 2018 authorized capital was created in the amount of € 242,550,413.00. Shareholder subscription rights for the 2018 authorized capital can be excluded.

Retained Earnings

As of December 31, 2018, retained earnings of € 9,942.0 million (Dec. 31, 2017: € 8,471.6 million) were recognized. This figure includes actuarial gains and losses of € -69.0 million (Dec. 31, 2017: € -64.0 million), which cannot be reclassified and therefore may no longer be recognized in profit or loss in subsequent reporting periods. The changes not affecting net income in the amount of € -150.7 million mainly include additional purchases of shares in BUWOG and Victoria Park, which are not classified as a linked transaction.

Other reserves

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 under other comprehensive income as well as the balance resulting from currency translation are recognized within this reserve.

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.

Dividend

The Annual General Meeting held on May 9, 2018, resolved to pay a dividend for the 2017 fiscal year in the amount of € 1.32 per share.

As in the previous year, Vonovia offered its shareholders the option of choosing between being paid the dividend in cash or being granted new shares. During the subscription period, 40.9% of shareholders opted for the stock dividend as opposed to the cash dividend. As a result, 6,977,108 new shares were issued using the company's authorized capital pursuant to Section 5b of the Articles of Association ("2016 authorized capital") at a subscription price of € 37.488 per share, i. e. a total amount of € 261,557,824.70. The total amount of the dividend distributed in cash came to € 378,775,265.62.

Equity Attributable to Hybrid Capital Investors

In December 2014, Vonovia issued a hybrid bond with a nominal volume of € 1.0 billion via a subsidiary, Vonovia Finance B. V., Amsterdam/Netherlands (issuer). This subordinated hybrid bond is of unlimited duration and can only be terminated by Vonovia on certain contractually fixed dates or occasions.

Up until the first termination date in December 2021, the hybrid bond shall bear interest at a rate of 4.0% p. a. If the bond is not terminated, then the coupon for the next five-year period increases automatically (step-up clause). The bond terms and conditions do not provide for any unconditional legal obligations to pay interest. Interest that is not paid out is carried forward to the new account and accumulated. If a resolution is passed on a dividend, or if a voluntary payment is made in connection with comparable subordinated bonds, then this triggers an interest payment obligation for this bond.

Pursuant to IAS 32, the hybrid bond is to be classified as equity in full. The interest payments to be made to the bondholders are recognized directly in equity.

Non-controlling Interests

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

Development of non-controlling interests in 2018

in € million	
As of Jan. 1, 2018	608.8
Non-controlling interests in profit for the period	96.3
Changes in other comprehensive income during the period	1.4
First-time consolidations (mainly BUWOG and Victoria Park)	554.0
Further purchases of shares in BUWOG	-47.9
Further purchases of shares in Victoria Park	-155.4
BUWOG squeeze-out	-249.8
Dividends paid to minority shareholders	-10.7
Other changes not affecting net income	-14.4
As of Dec. 31, 2018	**782.3**

The further purchases of shares in BUWOG and Victoria Park are no longer to be considered a linked transaction, meaning that they are reported under non-controlling interests with a neutral impact.

33 Provisions

	Dec. 31, 2017		Dec. 31, 2018	
in € million	non-current	current	non-current	current
Provisions for pensions and similar obligations	513.7	–	520.6	–
Provisions for taxes (current income taxes excl. deferred taxes)	–	155.3	–	180.3
Other provisions				
Environmental remediation	16.7	0.2	14.8	0.2
Personnel obligations	61.7	65.8	60.2	66.6
Outstanding trade invoices	–	50.0	–	61.7
Miscellaneous other provisions	15.1	105.2	21.1	141.7
Total other provisions	93.5	221.2	96.1	270.2
Total provisions	**607.2**	**376.5**	**616.7**	**450.5**

Provisions for Pensions and Similar Obligations

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 4,003 (Dec. 31, 2017: 4,030) eligible persons.

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) in the version dated October 2003. 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.

The 2002 pension scheme (VO 2002) for Vonovia employees replaces the pension systems that existed until December 31, 2001. For employees who joined the company prior to 1991, existing claims arising from the previous pension commitment as of December 31, 2001, are protected in the form of a status of possession. After this point, these employees acquire rights to future pension benefits in accordance with VO 2002. With the introduction of VO 2002, the pension regulations for employees joining the company after 1990 was updated with regard to changes in legislation and court rulings. Pension components acquired before the date VO 2002 replaced the previous pension systems remain in existence. As part of VO 2002, retirement, invalidity and surviving dependent benefits are provided in the form of lifelong pensions. The pension is calculated as the sum of annually acquired pension components that form a fixed percentage of salary. Salary components exceeding the income limit for the assessment of contributions to statutory pension insurance are weighted in a quadruple manner. For new pension commitments beginning in 2002, a pension guarantee of 1.0% p. a. is provided. For all other employees, the provisions of Section 16 of the German Occupational Pensions Improvement Act (BetrAVG) apply.

The following overview summarizes the most important basic data of the closed pension plans:

	VO 1 Veba Immobilien	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			
Remuneration up to state pension assessment limit	25%	27%	Depends on individual grouping
Remuneration in excess of state pension assessment limit	25%	72%	
Total pension model based on final salary	Yes	Yes	No
Net benefit limit incl. state pension	None	90%	None
Gross benefit limit	70%	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	None	Age of 55 (half)
Legal basis	Works agreement	Works agreement	Commitment to executives in individual contracts
Number of eligible persons	310	381	442

	VO 60 Eisenbahnges.	Viterra commitment to Management Board members (with plan assets)	Deferred compensation until 1999
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			
Remuneration up to state pension assessment limit	48%	75%	Not applicable
Remuneration in excess of state pension assessment limit	48%	75%	Not applicable
Total pension model based on final salary	Yes	No	No
Net benefit limit incl. state pension	None	None	None
Gross benefit limit	75%	None	None
Adjustment of pensions	Section 16, (1,2) BetrAVG	Annual according to development of cost of living	Section 16, (1,2) BetrAVG, min. 8% every 3 years
Supplementary periods	None	None	Age of 55
Legal basis	Works agreement	Commitment to Management Board members in individual contracts	Commitment to executives in individual contracts
Number of eligible persons	142	6	29

	VO guideline Gagfah M	VO 2017 VBL-Ersatzversorgung
Type of benefits	Retirement, invalidity and surviving dependent benefits	Retirement, invalidity and surviving dependent benefits
Pensionable remuneration	Final salary	Yes
Max. pension level		Yes
Remuneration up to state pension assessment limit	No	No
Remuneration in excess of state pension assessment limit	No	No
Total pension model based on final salary	Yes	No
Net benefit limit incl. state pension	None	None
Gross benefit limit	75%	None
Adjustment of pensions	Section 16, (1,2) BetrAVG	1%
Supplementary periods	Age of 55	None
Legal basis	Works agreement	Individual agreement
Number of eligible persons	372	112

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 Labour 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 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, 2017	Dec. 31, 2018
Actuarial interest rate	1.70	1.70
Pension trend	1.75	1.75
Salary trend	2.75	2.75

The new 2018 G mortality tables of Prof. Dr. Klaus Heubeck published in 2018 have been applied for the first time to the biometric assumptions. The Heubeck 2005 G mortality tables were taken as a basis in the 2017 fiscal year. The application resulted in a changeover effect in the amount of € 5.3 million.

The defined benefit obligation (DBO) developed as follows:

in € million	2017	2018
DBO as of Jan. 1	544.0	535.0
Additions due to business combinations	2.4	4.3
Interest expense	9.1	8.9
Current service cost	9.4	10.6
Actuarial gains and losses:		
Changes in the biometric assumptions	-4.7	8.5
Transfer	0.1	-
Benefits paid	-25.3	-25.5
DBO as of Dec. 31	**535.0**	**541.8**

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

in € million	Dec. 31, 2017	Dec. 31, 2018
Active employees	115.1	111.6
Former employees with vested pension rights	88.3	96.6
Pensioners	331.6	333.6
DBO as of Dec. 31	**535.0**	**541.8**

Plan assets comprise solely reinsurance contracts. The fair value of the plan assets has developed as follows:

in € million	2017	2018
Fair value of plan assets as of Jan. 1	22.5	22.4
Additions due to business combinations	0.3	0.3
Return calculated using the actuarial interest rate	0.4	0.4
Actuarial gains:		
Changes in the financial assumptions	0.4	0.5
Benefits paid	-1.2	-1.3
Fair value of plan assets as of Dec. 31	**22.4**	**22.3**

The actual return on plan assets amounted to € 0.8 million during the fiscal year (2017: € 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, 2017	Dec. 31, 2018
Present value of funded obligations*	36.1	36.4
Present value of unfunded obligations	498.9	505.4
Total present value of defined benefit obligations	535.0	**541.8**
Fair value of plan assets*	-22.4	-22.3
Net liability recognized in the balance sheet	512.6	**519.5**
Other assets to be recognized	1.1	1.1
Provisions for pensions recognized in the balance sheet	**513.7**	**520.6**

* Largely attributable to the "Viterra Management Board commitment" and "Gagfah Management Board commitment" pension plans.

In 2018, actuarial losses of € 8.0 million (excluding deferred taxes) were recognized in other comprehensive income.

The weighted average term of the defined benefit obligations is 15.0 years.

The following table contains the projected, 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
2019	26.1
2020	25.3
2021	25.1
2022	24.7
2023	24.4
2024–2028	121.5

Sensitivity Analyses

An increase or decrease in the material actuarial assumptions would have led to the following DBO as of December 31, 2018, providing the other assumptions did not change:

in € million		DBO
Actuarial interest rate	Increase by 0.5%	504.3
	Decrease by 0.5%	584.2
Pension trend	Increase by 0.25%	553.7
	Decrease by 0.25%	529.9

An increase in life expectancy of 5.0% would have resulted in an increase in the DBO of € 24.0 million as of December 31, 2018.

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 € 4.7 million (Dec. 31, 2017: € 5.3 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.

Development of Other Provisions During the Fiscal Year

in € million	As of Jan. 1, 2018	Additions due to changes in scope of consolidation	Additions	Reversals	Interest accretion to provisions	Netting plan assets	Utilization	As of Dec. 31, 2018
Other provisions								
Environmental remediation	16.9	–	–	–	0.1	–	-2.0	15.0
Personnel obligations	127.5	3.7	47.4	-9.3	0.3	0.3	-43.1	126.8
Outstanding trade invoices	50.0	–	54.6	-8.7	–	–	-34.2	61.7
Miscellaneous other provisions	120.3	38.8	58.8	-21.6	0.1	–	-33.6	162.8
	314.7	**42.5**	**160.8**	**-39.6**	**0.5**	**0.3**	**-112.9**	**366.3**

Development of Other Provisions in the Previous Year

in € million	As of Jan. 1, 2017	Additions due to changes in scope of consolidation	Additions	Reversals	Interest accretion to provisions	Netting plan assets	Utilization	As of Dec. 31, 2017
Other provisions								
Environmental remediation	20.3	–	–	-1.0	0.2	–	-2.6	16.9
Personnel obligations	138.4	13.5	55.1	-9.9	0.2	0.4	-70.2	127.5
Outstanding trade invoices	60.0	7.7	41.7	-4.5	–	–	-54.9	50.0
Miscellaneous other provisions	91.9	29.2	32.6	-13.8	-0.1	–	-19.5	120.3
	310.6	**50.4**	**129.4**	**-29.2**	**0.3**	**0.4**	**-147.2**	**314.7**

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. 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 remediation 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) of € 17.8 million (Dec. 31, 2017: € 18.3 million) (see note [50] Share-based Payment).

The material individual cost items under miscellaneous other provisions include costs associated with legal disputes in the amount of € 18.7 million (2017: € 9.4 million), allocations to the provisions for pre-retirement part-time work arrangements in the amount of € 14.0 million (2017: € 7.4 million) and € 0.1 million (2017: € 6.6 million) in costs in connection with tax returns.

34 Trade Payables

	Dec. 31, 2017		Dec. 31, 2018	
in € million	non-current	current	non-current	current
Liabilities				
from property letting	–	68.2	–	68.8
from other supplies and services	2.4	62.5	4.4	170.3
	2.4	**130.7**	**4.4**	**239.1**

35 Non-derivative Financial Liabilities

	Dec. 31, 2017		Dec. 31, 2018	
in € million	non-current	current	non-current	current
Non-derivative financial liabilities				
Liabilities to banks	2,602.3	602.7	4,893.5	306.6
Liabilities to other creditors	9,857.1	921.6	12,544.0	2,272.0
Deferred interest from non-derivative financial liabilities	–	76.8	–	119.9
	12,459.4	**1,601.1**	**17,437.5**	**2,698.5**

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, € 113.9 million (Dec. 31, 2017: € 75.8 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, 2018**	First-time consolidation	New loans	Scheduled repayments	Unscheduled repayments	Adjusted for effective interest method	Other adjustments	exchange rate differences	**As of Dec. 31, 2018**
Bond	598.9					0.7			599.6
Bonds (USD)	204.8					10.3			215.1
Bonds (EMTN)	8,688.6		3,600.0	-500.0		-28.3			11,760.3
Bond (Hybrid)	697.3					1.9			699.2
Commercial Paper	410.2		813.0	-803.0		-0.2			420.0
Portfolio loans									
Berlin-Hannoversche Hypothekenbank (Landesbank Berlin)	489.3		50.5	-2.1	-38.5	0.2			499.4
Berlin-Hannoversche Hypothekenbank, Landesbank Berlin and Landesbank Baden-Württemberg	341.3			-4.2	-17.3	0.7			320.5
Deutsche Hypothekenbank	176.8			-5.0		-2.7			169.1
Nordrheinische Ärzteversorgung	31.6			-0.7	-1.2				29.7
Norddeutsche Landesbank	116.7			-3.4		0.1			113.4
Mortgages	2,228.2		207.1	-50.4	-94.5	7.2			2,297.6
Working capital facility			100.0	-100.0					-
BUWOG:									
Mortgages		1,958.9	203.9	-39.3	-190.3	4.9			1,938.1
Victoria Park:									
Bonds		101.6		-38.3		-2.0		1.1	62.4
Mortgages		804.2	89.7	-13.4		-5.4		16.6	891.7
Other deferred interest	76.8	2.5					40.6		119.9
	14,060.5	**2,867.2**	**5,064.2**	**-1,559.8**	**-341.8**	**-12.6**	**40.6**	**17.7**	**20,136.0**

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

in € million	**As of Jan. 1, 2017**	First-time consoli-dation	New loans	Scheduled repayments	Unschedu-led repay-ments	Adjusted for effective interest method	Other adjust-ments	**As of Dec. 31, 2017**
Bond	598.3					0.6		598.9
Bonds (USD)	943.7			-554.9			-184.0	204.8
Bonds (EMTN)	7,437.8		2,000.0	-750.0		0.8		8,688.6
Bond (Hybrid)	695.4					1.9		697.3
Commercial Paper			410.2					410.2
Taurus	1,055.9			-2.7	-1,017.7	-35.5		-
Portfolio loans								
Berlin-Hannoversche Hypothekenbank (Landesbank Berlin)	500.5			-8.4	-3.5	0.7		489.3
Berlin-Hannoversche Hypothekenbank, Landesbank Berlin and Landesbank Baden-Württemberg	398.9			-4.2	-54.5	1.1		341.3
Corealcredit Bank AG	147.1			-1.8	-145.9	0.6		-
Deutsche Hypothekenbank	186.4			-4.8	-1.9	-2.9		176.8
HSH Nordbank	17.3			-16.4	-0.7	-0.2		-
Nordrheinische Ärzteversorgung	33.3			-0.6	-1.1			31.6
Norddeutsche Landesbank	119.9			-3.3		0.1		116.7
Mortgages	1,163.9	16.6	490.7	-33.1	-156.2	3.0		1,484.9
Conwert:								
Bond		65.0		-65.0				-
Mortgages		1,152.7	19.6	-59.5	-362.5	-7.0		743.3
Other deferred interest	72.6	2.9					1.3	76.8
	13,371.0	**1,237.2**	**2,920.5**	**-1,504.7**	**-1,744.0**	**-36.8**	**-182.7**	**14,060.5**

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 € 33.5 million lower than the recognized value (Dec. 31, 2017: € 23.5 million).

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:

in € million	**Nominal obligation Dec. 31, 2018**	Maturity	Average interest rate	**Repayment of the nominal obligations is as follows:** 2019	2020	2021	2022	2023	from 2024
Bond*	600.0	2019	3.13%	600.0	–	–	–	–	–
Bond (US dollar)*	184.9	2023	4.58%	–	–	–	–	184.9	–
Bond (EMTN)*	500.0	2021	3.63%	–	–	500.0	–	–	–
Bond (EMTN)*	500.0	2022	2.13%	–	–	–	500.0	–	–
Bond (EMTN)*	500.0	2020	0.88%	–	500.0	–	–	–	–
Bond (EMTN)*	500.0	2025	1.50%	–	–	–	–	–	500.0
Bond (EMTN)*	1,250.0	2020	1.63%	–	1,250.0	–	–	–	–
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	2019	0.03%	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)*	500.0	2026	1.50%	–	–	–	–	–	500.0
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 (Hybrid)*	700.0	2019	4.63%	700.0	–	–	–	–	–
Commercial paper*	420.0	2019	-0.23%	420.0	–	–	–	–	–
Portfolio loans									
Berlin-Hannoversche Hypothekenbank (Landesbank Berlin) (1)*	499.4	2028	1.64%	–	–	–	–	–	499.4
Berlin Hannoversche Hypothekenbank, Landesbank Berlin and Landesbank Baden-Württemberg*	321.4	2020	3.71%	4.2	317.2	–	–	–	–
Deutsche Hypothekenbank*	162.7	2021	3.98%	5.2	5.5	152.0	–	–	–
Nordrheinische Ärzteversorgung	29.7	2022	3.49%	0.7	0.8	0.8	27.4	–	–
Norddeutsche Landesbank (2)*	32.8	2020	3.99%	2.3	30.5	–	–	–	–
	80.9	2023	3.76%	1.2	1.2	1.3	1.3	75.9	–
Mortgages	2,328.9	2043	1.49%	129.6	481.2	383.7	199.7	291.0	843.7
BUWOG:									
Mortgages	1,892.9	2029	1.97%	184.4	57.9	84.5	71.7	203.4	1,291.0
Victoria Park	82.0	2023	3.76%	1.1	1.2	1.2	1.3	1.3	75.9
Bond	58.5	2020	4.50%	–	58.5	–	–	–	–
Mortgages	872.3	2023	1.79%	32.4	165.9	327.9	163.7	0.4	182.0
	20,034.4			**2,580.0**	**2,868.7**	**1,450.2**	**2,563.8**	**2,255.6**	**8,316.1**

* Under the conditions of existing loan agreements, Vonovia is obliged to fulfil certain financial covenants.

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

in € million	Nominal obligation Dec. 31, 2017	Maturity	Average interest rate	Repayment of the nominal obligations is as follows: 2018	2019	2020	2021	2022	from 2023
Bond*	600.0	2019	3.13%	–	600.0	–	–	–	–
Bond (US dollar)*	184.9	2023	4.58%	–	–	–	–	–	184.9
Bond (EMTN)*	500.0	2021	3.63%	–	–	–	500.0	–	–
Bond (EMTN)*	500.0	2022	2.13%	–	–	–	–	500.0	–
Bond (EMTN)*	500.0	2020	0.88%	–	–	500.0	–	–	–
Bond (EMTN)*	500.0	2025	1.50%	–	–	–	–	–	500.0
Bond (EMTN)*	1,250.0	2020	1.63%	–	–	1,250.0	–	–	–
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)*	500.0	2018	0.14%	500.0	–	–	–	–	–
Bond (EMTN)*	1,000.0	2024	1.25%	–	–	–	–	–	1,000.0
Bond (EMTN)*	500.0	2022	0.75%	–	–	–	–	500.0	–
Bond (ENTM)*	500.0	2027	1.75%	–	–	–	–	–	500.0
Bond (EMTN)*	500.0	2025	1.13%	–	–	–	–	–	500.0
Bond (ENTM)*	500.0	2019	-0.15%	–	500.0	–	–	–	–
Bond (Hybrid)	700.0	2019	4.63%	–	700.0	–	–	–	–
Commercial Paper	410.2	2018	-0.20%	410.2	–	–	–	–	–
Portfolio loans									
Berlin-Hannoversche Hypothekenbank (Landesbank Berlin)*	489.5	2018	3.10%	489.5	–	–	–	–	–
Berlin Hannoversche Hypothekenbank, Landesbank Berlin und Landesbank Baden-Württemberg*	342.9	2020	3.65%	4.2	4.2	334.5	–	–	–
Deutsche Hypothekenbank*	167.7	2021	3.98%	5.0	5.2	5.5	152.0	–	–
Nordrheinische Ärzteversorgung	31.6	2022	3.49%	0.7	0.7	0.7	0.8	28.7	–
Norddeutsche Landesbank*	35.1	2020	3.99%	2.3	2.3	30.5	–	–	–
	82.0	2023	3.76%	1.1	1.2	1.2	1.3	1.3	75.9
Mortgages	2,266.6	2046	1.65%	164.1	164.8	149.8	253.6	172.6	1,361.7
	14,060.5			**1,577.1**	**1,978.4**	**2,272.2**	**907.7**	**1,702.6**	**5,622.5**

* Under the conditions of existing loan agreements, Vonovia is obliged to fulfil certain financial covenants.

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

Of the nominal obligations to creditors, € 4,907.8 million (Dec. 31, 2017: € 2,898.9 million) are secured by land charges and other collateral (account pledge agreements, assignments, pledges of company shares and guarantees). In the event of a breach of the covenants, failure to repay or insolvency, the securities provided are used to satisfy the claims of the creditors.

The nominal interest rates on the financial liabilities to banks and other creditors are between -0.2% and 8.0% (average approx. 1.9%). 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 Chapter [42] Financial Risk Management).

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

Based on the tap issuance master agreement dated April 20, 2017, with supplements dated August 30, 2017, November 9, 2017, and January 5, 2018 (€ 15,000,000,000 debt issuance program), Vonovia issued two bonds worth € 500 million each via its Dutch financing company in January 2018. The bonds were issued at an issue price of 99.330%, a coupon of 0.75% and with a maturity of six years for one tranche, and at an issue price of 99.439%, a coupon of 1.50% and with a maturity of ten years for the other.

Based on the updated tap issuance master agreement dated March 14, 2018 (€ 20,000,000,000 debt issuance program), Vonovia issued bonds in four tranches worth € 2,100 million in total via its Dutch financing company in March 2018. The bonds were issued (1) in an amount of € 600 million at an issue price of 100.00%, with a coupon at three-month EURIBOR plus margin and a maturity of 4.75 years, (2) in an amount of € 500 million at an issue price of 99.188%, with a coupon of 1.50% and a maturity of eight years, (3) in an amount of € 500 million at an issue price of 98.967%, with a coupon of 2.125% and a maturity of twelve years and (4) in an amount of € 500 million at an issue price of 97.896%, with a coupon of 2.75% and a maturity of twenty years.

Vonovia also issued a bond worth € 500 million via its Dutch financing company on July 3, 2018. The bond was issued at an issue price of 99.437%, with a coupon of 0.875% and a maturity of five years.

Commercial Paper Program

In November 2017, Vonovia concluded a master commercial paper agreement via its Dutch financing company with a total volume of € 500 million with Commerzbank AG as lead arranger and several banks as traders. This master program was increased to a total volume of € 1,000 million in September 2018. Issues in the amount of € 420 million were outstanding under this program as of December 31, 2018.

36 Derivatives

	Dec. 31, 2017		Dec. 31, 2018	
in € million	non-current	current	non-current	current
Derivatives				
Purchase price liabilities from put options/rights to reimbursement		4.2		36.8
Cash flow hedges	8.7		15.2	
Stand-alone derivatives			54.6	
Deferred interest from derivatives		0.2		4.6
	8.7	**4.4**	**69.8**	**41.4**

Regarding derivative financial liabilities please refer to notes [41] Additional Financial Instrument Disclosures and [44] Cash Flow Hedges and Stand-alone Interest Rate Swaps.

37 Liabilities from Finance Leases

The following table shows the total minimum lease payments and the reconciliation to their present value for the Spree-Bellevue property in the amount of € 94.6 million (Dec. 31, 2017: € 94.1 million) and the finance leases for heat generation plants in the amount of € 4.8 million (Dec. 31, 2017: € 5.2 million).

	Dec. 31, 2017			Dec. 31, 2018		
in € million	Total minimum lease payments	Interest portion	Present value	Total minimum lease payments	Interest portion	Present value
Due within 1 year	4.9	0.3	4.6	5.0	0.3	4.7
Due in 1 to 5 years	26.4	4.3	22.1	26.2	4.1	22.1
Due after 5 years	204.3	131.7	72.6	198.9	126.3	72.6
	235.6	**136.3**	**99.3**	**230.1**	**130.7**	**99.4**

As part of finance leases, expenses of € 5.3 million (2017: € 5.3 million) were recognized for the Spree-Bellevue property and expenses of € 0.6 million (2017: € 0.6 million) for finance leases for heat generation plants in the fiscal year under review. As of the reporting date, there were no significant non-cancellable subtenancies on the Spree-Bellevue property.

38 Liabilities to Non-controlling Interests

The liabilities to non-controlling interests relate especially to the obligations to pay a guaranteed dividend under the valid profit-and-loss transfer agreements.

39 Financial Liabilities from Tenant Financing

The financial liabilities from tenant financing as of the reporting date include € 118.3 million (Dec. 31, 2017: € 7.7 million) in tenant financing contributions. In addition, the financial liabilities from tenant financing include € 42.5 million (Dec. 31, 2017: € 0.0 million) in maintenance and improvement contributions deposited by tenants (EVB).

40 Other Liabilities

in € million	Dec. 31, 2017 non-current	Dec. 31, 2017 current	Dec. 31, 2018 non-current	Dec. 31, 2018 current
Advance payments received	–	32.8	–	23.2
Miscellaneous other liabilities	65.3	73.1	42.5	574.6
	65.3	**105.9**	**42.5**	**597.8**

The advance payments received include on-account payments of € 18.9 million (Dec. 31, 2017: € 24.2 million) from tenants for ancillary costs after offsetting against the corresponding trade receivables.

The Annual General Meeting of BUWOG AG held on October 2, 2018, in Vienna passed a resolution on the transfer of the shares held by the minority shareholders to the main shareholder, Vonovia SE, in return for a cash settlement of € 29.05 per share (squeeze-out). As of December 31, 2018, this results in a liability in the amount of € 335.6 million.

The miscellaneous other liabilities include purchase price liabilities in the amount of € 139.1 million (Dec. 31, 2017: € 62.6 million) for the acquisition of further shares in companies that are already consolidated.

Other Notes and Disclosures

41 Additional Financial Instrument Disclosures

Measurement categories and classes: in € million	Carrying amounts Dec. 31, 2018
Assets	
Cash and cash equivalents	
Cash on hand and deposits at banking institutions	547.7
Trade receivables	
Receivables from the sale of properties	258.6
Receivables from property letting	44.4
Other receivables from trading	6.4
Receivables from sale of real estate inventories (Development)	183.7
Financial assets	
Investments valued at equity	29.1
Loans to other investments	33.4
Other non-current loans	10.2
Non-current securities	4.0
Other investments	792.1
Derivative financial assets	
Cash flow hedges (cross currency swaps)	16.3
Stand-alone interest rate swaps and interest rate caps as well as embedded derivatives	4.5
Liabilities	
Trade payables	243.5
Non-derivative financial liabilities	20,136.0
Derivative financial liabilities	
Purchase price liabilities from put options/rights to reimbursement	36.8
Stand-alone interest rate swaps and interest rate caps	54.6
Other swaps	19.8
Liabilities from finance leases	99.4
Liabilities from tenant financing	160.8
Liabilities to non-controlling interests	33.2

	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 17/IAS 28	Fair value Dec. 31, 2018	Fair value hierarchy level
	547.7					547.7	1
	258.6					258.6	2
	44.4					44.4	2
	6.4					6.4	2
	183.7					183.7	2
					29.1	29.1	n. a.
	33.4					48.1	2
	10.2					15.8	2
				4.0		4.0	1
				792.1		792.1	2
		-11.0	27.3			16.3	2
		4.5				4.5	2
	243.5					243.5	2
	20,136.0					20,471.2	2
		36.8				36.8	3
		54.6				54.6	2
		-2.6	-17.2			19.8	2
					99.4	198.0	2
	160.8					160.8	2
	33.2					33.2	2

Measurement categories and classes: in € million	Measurement category in acc. with IAS 39	Carrying amounts Dec. 31, 2017
Assets		
Cash and cash equivalents		
Cash on hand and deposits at banking institutions	LaR	266.2
Trade receivables		
Receivables from the sale of properties	LaR	201.2
Receivables from property letting	LaR	32.2
Other receivables from trading	LaR	1.5
Financial assets		
Investments valued at equity	n. a.	7.0
Loans to other investments	LaR	33.5
Other non-current loans	LaR	4.3
Non-current securities	AfS	3.6
Other investments	AfS	644.7
Derivative financial assets		
Cash flow hedges (cross currency swaps)	n. a.	5.5
Liabilities		
Trade payables	FLAC	133.1
Non-derivative financial liabilities	FLAC	14,060.5
Derivative financial liabilities		
Purchase price liabilities from put options/rights to reimbursement	FLHfT	4.2
Other swaps	n. a.	8.9
Liabilities from finance leases	n. a.	99.3
Liabilities to non-controlling interests	FLAC	33.9

Loans and Receivables	LaR
Available-for-Sale financial assets	AfS
Financial Liabilities Held-for-Trading	FLHfT
Financial Liabilities measured at Amortized Cost	FLAC

Amounts recognized in balance sheet in accordance with IFRS						
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 17/IAS 28	Fair value Dec. 31, 2017	Fair value hierarchylevel
266.2					266.2	1
201.2					201.2	2
32.2					32.2	2
1.5					1.5	2
				7.0	7.0	n. a.
33.5					54.0	2
4.3					4.3	2
			3.6		3.6	1
			644.7		644.7	2
	-11.3	16.8			5.5	2
133.1					133.1	2
14,060.5					14,713.7	2
	4.2				4.2	3
	-1.7	10.6			8.9	2
				99.3	203.5	2
33.9					33.9	2

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 € 4.7 million (December 31, 2017: € 5.3 million).
> Amount by which the fair value of plan assets exceeds the corresponding obligation: € 1.1 million (December 31, 2017: € 1.1 million).
> Provisions for pensions and similar obligations: € 520.6 million (December 31, 2017: € 513.7 million).

IFRS 13 defines fair value as a price that would be received by selling an asset or paid to transfer a liability in the principal market for the asset or liability or, in the absence of a principal market, in the most advantageous market. The fair value is to be determined using valuation parameters that are as market-based as possible as inputs. The valuation hierarchy (fair value hierarchy) categorizes the inputs for the measurement technique in three levels, giving the highest priority level to the most market-based inputs:

Level 1 inputs: quoted prices (unadjusted) in active markets for identical assets or liabilities that the entity can access at the measurement date.

Level 2 inputs: valuation parameters other than quoted prices included within Level 1 that are observable for the asset or liability, either directly or indirectly.

Level 3 inputs: unobservable valuation parameters for the asset or liability.

When inputs used to measure the fair value are categorized within different levels of the fair value hierarchy, the fair value measurement is categorized in its entirety in the same level of the fair value hierarchy as the lowest level input that is material to the entire measurement.

Should the level of the input parameters used for a financial instrument change in a period subsequent to initial recognition, the financial instrument is reclassified to the new hierarchy level as of the end of that reporting period. No financial instruments were reclassified to different hierarchy levels during the reporting period.

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, 2018	Level 1	Level 2	Level 3
Assets				
Investment properties	43,490.9			43,490.9
Financial assets				
Non-current securities	4.0	4.0		
Other investments	792.1	672.8	119.3	
Assets held for sale				
Investment properties (contract closed)	105.9		105.9	
Derivative financial assets				
Cash flow hedges (cross currency swaps)	20.8		20.8	
Liabilities				
Derivative financial liabilities				
Purchase price liabilities from put options/rights to reimbursement	36.8			36.8
Cash flow hedges	19.8		19.8	
Stand-alone derivatives	54.6		54.6	

in € million	Dec. 31, 2017	Level 1	Level 2	Level 3
Assets				
Investment properties	33,182.8			33,182.8
Financial assets				
Non-current securities	3.6	3.6		
Other investments	644.7	613.3	31.4	
Assets held for sale				
Investment properties (contract closed)	142.6		142.6	
Derivative financial assets				
Cash flow hedges (cross currency swaps)	5.5		5.5	
Liabilities				
Derivative financial liabilities				
Purchase price liabilities from put options/rights to reimbursement	4.2			4.2
Cash flow hedges	8.9		8.9	

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 note [23] “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.

Non-current securities are measured using the quoted prices in active markets (Level 1).

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.

For the consolidated financial statements, Vonovia's own credit risk, in principle, was relevant for interest rate swaps. This credit risk is derived for material risks from rates observable on the capital markets and ranges of between 40 and 180 basis points, depending on the residual maturities of financial instruments. Regarding the positive market values of the cross currency swaps, a counterparty risk of 90 basis points was taken into account.

The calculated cash flows of the cross currency swap result from the forward curve for USD/EUR. The cash flows are discounted on the basis of the reference interest rate of each currency (LIBOR and EURIBOR) and translated into euros at the current exchange rate (Level 2).

The fair values of the cash and cash equivalents, trade receivables as well as 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.

The following table shows the development of the put options recognized at fair value:

		Change in	Change			
in € million	As of Jan. 1	Scope of consolidation	affecting net income	cash effective	not affecting net income	As of Dec. 31
2018						
Purchase price liabilities from put options/ rights to reimbursement	4.2	35.2	-1.1	-	-1.5	**36.8**
2017						
Purchase price liabilities from put options/ rights to reimbursement	**57.2**	10.1	-13.9	-1.3	-47.9	**4.2**

The change in the scope of consolidation relates to put options for shares held by minority shareholders as part of the first-time consolidation of BUWOG.

For further information, we refer to note [4] "Scope of Consolidation and Business Combinations."

The sensitivity analysis has shown that if the value of the company deviates by 10% in each case, the purchase price liability from put options granted as of the reporting date would differ by € +3.7 million or € -3.6 million (Dec. 31, 2017: € +0.4 million or € -0.4 million). The changes would be recognized in full in net interest.

in € million	From interest	Income from other non-current loans	Dividends from other investments	From subsequent measurement			Financial result affecting income 2018	Measurement cash flow hedges	Measurement financial instruments categorized as equity instruments	Total financial result 2018
				Impairment losses	Derecognized receivables	Derecognized liabilities				
2018										
Debt instruments carried at (amortized) cost	3.5	2.2	–	21.6	18.9	–	46.2			46.2
Debt instruments measured at FV through P&L	–	–	23.1	–	–	–	23.1			23.1
Derivatives measured at FV through P&L with reclassification	-29.7	–	–	–	–	–	-29.7			-29.7
Debt instruments measured at FVOCI with reclassification	–	–	–	–	–	–	–	3.5		3.5
Equity instruments measured at FVOCI without reclassification	–	–	–	–	–	–	–		60.0	60.0
Financial liabilities measured at (amortized) cost	-401.4	–	–	–	–	0.9	-400.5			-400.5
	-427.6	**2.2**	**23.1**	**21.6**	**18.9**	**0.9**	**-360.9**	**3.5**	**60.0**	**-297.4**

in € million	From interest	Income from other non-current loans	Dividends from other investments	From subsequent measurement			Financial result affecting income 2017	Measurement cash flow hedges	Measurement financial instruments categorized as equity instruments	Total financial result 2017
				Impairment losses	Derecognized receivables	Derecognized liabilities				
2017										
Debt instruments carried at (amortized) cost	2.5	1.6	–	-22.2	1.3	–	-16.8			-16.8
Debt instruments measured at FV through P&L	-1.3	–	20.1	–	–	–	18.8			18.8
Derivatives measured at FV through P&L with reclassification	–	–	–	–	–	–	–	31.8		31.8
Debt instruments measured at FVOCI with reclassification	–	–	–	–	–	–	–		133.4	133.4
Equity instruments measured at FVOCI without reclassification	-314.5	–	–	–	–	0.9	-313.6			-313.6
Financial liabilities measured at (amortized) cost	**-313.3**	**1.6**	**20.1**	**-22.2**	**1.3**	**0.9**	**-311.6**	**31.8**	**133.4**	**-146.4**

42 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 (chapter "Structure and Instruments of the Risk Management System"). 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

a) Currency Risks

The cash-effective currency risks arising in connection with the still existing USD bond were eliminated by the simultaneous contracting of cross currency swaps. Fixed and expected purchase price payments in connection with the acquisition of Victoria Park were secured through the conclusion of foreign currency forwards. In addition, currency fluctuations from the operating business in Swedish kronor (SEK) are to be expected. Vonovia is subject to no further material currency risks in the scope of its usual business activities.

b) Interest Rate Risks

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 EUR 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.

Preceding this chapter, there is a sensitivity analysis with regard to purchase price liabilities from put options. A sensitivity analysis for cash flow hedges is provided under note [44] Cash Flow Hedges and Stand-alone Interest Rate Swaps.

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 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 Finance and Treasury 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.

The following table shows the forecast for undiscounted cash flows of the non-derivative financial liabilities and derivative financial instruments for the 2018 reporting year.

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

in € million	Carrying amount as of Dec. 31, 2018	2019		2020		2021 to 2025	
		Interest	Repayment	Interest	Repayment	Interest	Repayment
Non-derivative financial liabilities							
Liabilities to banks	5,200.1	94.2	325.0	88.7	1,026.3	263.8	2,960.5
Liabilities to other creditors	14,816.0	134.6	2,255.0	195.2	1,842.4	616.8	6,972.4
Deferred interest from other non-derivative financial liabilities	119.9	119.9	–	–	–	–	–
Liabilities from finance leases	99.4	5.8	–	9.8	–	26.9	–
Financial liabilities from tenant financing	–	–	104.7	–	1.9	–	9.5
Derivative financial liabilities							
Purchase price liabilities from put options/rights to reimbursement	36.8	–	0.7	–	2.2	–	33.9
Cash flow hedges stand-alone interest rate derivatives	65.6	22.7	–	22.0	–	67.8	–
Cash flow hedges (cross currency swap) USD in €	-15.7	-10.4	–	-10.4	–	-31.3	-185.0
€		8.5	–	8.5	–	25.4	185.0
Deferred interest from swaps	3.8	3.8					

in € million	Carrying amount as of Dec. 31, 2017	2018		2019		2020 to 2024	
		Interest	Repayment	Interest	Repayment	Interest	Repayment
Non-derivative financial liabilities							
Liabilities to banks	3,205.0	62.6	655.5	58.3	157.1	156.3	1,426.5
Liabilities to other creditors	10,778.7	102.7	921.4	178.3	1,821.3	600.3	6,018.2
Deferred interest from other non-derivative financial liabilities	76.8	76.8	–	–	–	–	–
Liabilities from finance leases	99.3	5.9	–	5.9	–	31.3	–
Derivative financial liabilities							
Purchase price liabilities from put options/rights to reimbursement	4.2	–	–	–	–	–	4.2
Cash flow hedges (interest)	8.7	3.8	–	3.0	–	10.2	–
Cash flow hedges (cross currency swap) USD in €	-5.0	-10.3	–	-10.0	–	-38.0	-183.0
€		8.5	–	8.5	–	33.9	184.9
Deferred interest from swaps	-0.3	-0.3	–	–	–	–	–

In April 2014, Vonovia issued a subordinated hybrid bond with terms and conditions stating that the issuer has its first special right of termination after five years. In line with the principle of prudence, the nominal value of these bonds has been recognized in the repayments from the year 2019, although the contractual term extends well beyond this period.

Credit Line

The framework loan agreements with Commerzbank and Société Générale concluded in December 2017, each with a volume of € 250 million, were terminated with effect from October 4, 2018. Vonovia has concluded a syndicated revolving credit facility of € 1,000 million with several banks, led by Commerzbank AG, via its Dutch financing company to replace these loan agreements. This unsecured credit line runs until October 2021 and is subject to interest on the basis of EURIBOR plus a mark-up. This credit line had not been used as of December 31, 2018.

Within the BUWOG subsidiaries, project-specific credit lines with various credit institutions were available in the amount of € 316.6 million on the reporting date, with € 62.3 million available for alternative use as a guarantee line. The nominal amount of these agreements totals € 609.7 million. These credit lines can be utilized based on the progress of the construction work, provided that corresponding evidence is furnished, taking the contractually agreed payment requirements into account.

Furthermore, there are two guarantee lines in place between Vonovia and Commerzbank, one for € 10 million, from which bills of exchange of approximately € 4.3 million had been drawn as of the end of the fiscal year, and one for € 50 million, from which bills of exchange had been drawn in the full amount. There are further guarantee credit lines within the conwert subgroup, namely with Raiffeisen Bank International AG in the amount of € 5 million and with Landesbank Baden-Württemberg in the amount of € 0.75 million. Approximately € 0.15 million of the latter had been drawn as of December 31, 2017. In addition, Commerzbank has issued Vonovia a bank guarantee of around € 334.4 million to secure the cash settlement entitlements of the minority shareholders of BUWOG AG as part of the squeeze-out.

Within the BUWOG subportfolio, there are four guarantee lines that can be used on a revolving basis and that correspond to a total amount of € 48 million with UniCredit Bank Austria AG, Atradius Credit Insurance N.V., Swiss Re International SE and VHV Allgemeine Versicherung AG. As of December 31, 2018, € 17.8 million of these guarantee lines had been used. In addition, four project-specific development financing arrangements with Berliner Volksbank eG, Berliner Sparkasse AG, HypoVereinsbank UniCredit Bank AG and UniCredit Bank Austria AG allow for the possibility of making use of bills of exchange, bonds and/or guarantees. On the reporting date, bills of exchange of € 6.6 million had been used. In addition, there are lines in the amount of € 18.6 million available at at least one of the credit institutions referred to above for project-specific payment guarantees, € 18.0 million of which had been used by the balance sheet date.

In November 2017, Vonovia concluded a master commercial paper agreement via its Dutch financing company with a total volume of € 500 million with Commerzbank AG as lead arranger and several banks as traders. This master program was increased to a total volume of € 1,000 million in September 2018. Issues in the amount of € 420 million were outstanding under this program as of December 31, 2018.

All in all, Vonovia has cash on hand and deposits at banking institutions of € 547.7 million on the reporting date (Dec. 31, 2017: € 266.2 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.

43 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 pursue the company's growth and portfolio optimization strategy 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, 2017	Dec. 31, 2018
Total equity	16,691.2	19,664.1
Total assets	37,516.3	49,387.6
Equity ratio	44.5%	39.8%

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.

44 Cash Flow Hedges and Stand-alone Interest Rate Swaps

On the reporting date, the nominal volume of cash flow hedges held in euros amounts to € 680.9 million (Dec. 31, 2017: € 582.0 million). The interest rates on the two remaining hedging instruments are 0.793% and 3.760% with original swap periods of 4.75 and 10 years.

In connection with the € 600 million bond with a variable coupon issued in March 2018, the company has used a corresponding interest rate hedging transaction to fix the interest rate at 0.793% for 4.75 years.

In line with the planned early repayment of the corporate bond that fell due in September 2018 with a variable coupon of € 500 million, the corresponding interest rate hedge was also terminated.

For the three hedging instruments that are maintained within a so-called passive hedge account, € 9.6 million was reclassified to profit or loss in the reporting year in line with the expected cash flows from the underlying hedged items. This reduced the value recognized under other comprehensive income to € 47.6 million.

All derivatives are included in netting agreements with the issuing banks. Whereas the cross currency swaps were all recognized with positive market values, basically the euro interest rate swaps have an inherently negative market value 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	Face value	Beginning of term	End of term	Current average interest rate (incl. margin)
Bonds (EMTN)				
Hedged items	600.0	Mar. 22, 2018	Dec. 22, 2022	3-M-EURIBOR margin 0,45%
Interest rate swaps	600.0	Mar. 22, 2018	Dec. 22, 2022	0.793%
Norddeutsche Landesbank (2)				
Hedged items	80.9	June 28, 2013	June 30, 2023	3-M-EURIBOR margin 1.47%
Interest rate swaps	80.9	June 28, 2013	June 30, 2023	2.290%

In 2013, two cross currency swaps were contracted in equal amounts with each of J.P. 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 million, fell due in October 2017 in line with the bonds. The hedging instruments, each for an amount of USD 125 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:

in € million	Face value US-$	Face value €	Beginning of term	End of term	Interest rate US-$	Interest rate €	Hedging rate US-$/€
J.P. Morgan Securities plc Morgan Stanley & Co. International plc							
Hedged items	250.0	184.9	Oct. 2, 2013	Oct. 2, 2023	5.00%		
CCS	250.0	184.9	Oct. 2, 2013	Oct. 2, 2023		4.58%	1.3517

In connection with the acquisition of the BUWOG Group as of March 26, 2018, 22 stand-alone interest rate swaps with a nominal volume of € 918.9 million were assumed. In the course of the reporting year, one hedging instrument with a volume of € 24.2 million was terminated at due date, while another with a volume of € 3.5 million was terminated prematurely. As of December 31, 2018, the hedged nominal volume was € 880.2 million.

In connection with the acquisition of the Victoria Park Group as of June 28, 2018, 13 stand-alone interest rate swaps and 6 interest rate caps with a nominal volume of € 415.7 million were assumed. In the course of the reporting year, one interest rate cap (€ 24 thousand) was terminated on the one hand while, on the other, respectively two new interest rate swaps and interest rate caps (in a total amount of about € 0.1 million) were concluded. In addition, at the time of first-time consolidation, 14 embedded derivatives (loan termination rights) with a positive fair value of € 4.5 million had still been identified. The nominal value hedged in Swedish kronor corresponds to a volume of € 497.0 million as of the reporting date.

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 were shown at their negative clean fair values totaling € -15.2 million as of December 31, 2018 (Dec. 31, 2017: € -8.7 million). The corresponding deferred interest amounted to € -4.6 million (Dec. 31, 2017: € -0.2 million). At the same time, positive market values from cross currency swaps in the amount of € 15.7 million (Dec. 31, 2017: € 5.0 million), together with positive market values in the amount of € 4.3 million from embedded derivatives and other interest rate derivatives of Victoria Park were disclosed. The corresponding deferred interest amounted to € 0.8 million (Dec. 31, 2017: € 0.5 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 CCS	Other	Currency risk	Interest risk	As of Dec. 31
2018	-68.9	7.0	-3.6	-6.7	8.8	**-63.3**
2017	-93.2	-117.4	6.6	126.1	9.0	**-68.9**

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

In the reporting year, after allowing for deferred taxes, negative cumulative ineffectiveness amounts to € 2.7 million (2017: € 4.6 million), improving net interest by € 1.9 million.

Cashflow Hedges

in € million	2017	2018
Change in unrealized gains/losses	-168.0	0.4
Taxes on the change in unrealized gains/losses	57.3	3.0
Net realized gains/losses	199.8	3.1
Taxes on net realized gains/losses	-64.7	-1.0
Total	**24.4**	**5.5**

On the basis of the valuation as of December 31, 2018, 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	Ineffective portions affecting net income	Total
2018			
+ 50 basis points	8.1	23.4	**31.5**
- 50 basis points	-5.9	-41.1	**-47.0**
2017			
+ 50 basis points	2.2	–	**2.2**
- 50 basis points	-2.2	–	**-2.2**

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 € -1.5 million (or € +1.3 million), while ineffectiveness affecting net income in the amount of € +1.0 million (or € -1.0 million) would result at the same time. In the previous year, a change in the other reserves not affecting net income of € -1.6 million (or € +0.6 million) was recognized in connection with ineffectiveness affecting net income in the amount of € +1.4 million (or € -0.6 million).

45 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.

46 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, 2017	Dec. 31, 2018
Guarantees in connection with Development	–	42.9
Payment guarantees	–	7.9
Rent surety bonds	0.9	1.3
Other	7.0	5.9
	7.9	**58.0**

The increase in contingent liabilities is primarily due to guarantees in connection with the Development business that was added to Vonovia's portfolio in connection with the acquisition of the BUWOG Group. These mainly relate to guarantees resulting from the ordinary course of business issued in accordance with corresponding national regulations.

Vonovia is involved in legal disputes resulting from normal business activities. These relate, in particular, to tenancy law, distribution law and construction law disputes, as well as company law proceedings relating to acquired participating interests. 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.

47 Other Financial Obligations

The future minimum lease payment obligations resulting from non-cancellable operating leases are due as follows:

Total minimum lease payments

in € million	End of contract term	Due within 1 year	Due in 1 to 5 years	Due after 5 years	Total
Dec. 31, 2018					
Rents	2019–2024	10.6	18.0	5.5	34.1
Lease contracts	2019–2022	10.5	7.7	–	18.2
Leasehold contracts	2019–2109	13.4	53.6	552.4	619.4
		34.5	**79.3**	**557.9**	**671.7**
Dec. 31, 2017					
Rents	2018–2022	3.9	7.0	–	10.9
Lease contracts	2018–2021	12.9	15.3	–	28.2
Leasehold contracts	2018–2206	9.4	37.8	399.5	446.7
		26.2	**60.1**	**399.5**	**485.8**

Payments of € 39.9 million (2017: € 29.7 million) under rental, tenancy and lease contracts were recognized as expenses in the reporting period.

The Vonovia leasehold contracts generally have a term of 99 years. The average remaining term of these contracts was approx. 43 years as of December 31, 2016. The owners of inheritable building rights are in particular the German state, church institutions, German federal states, municipalities and Deutsche Post AG, Bonn.

In addition to obligations under operating leases, other financial obligations include:

in € million	Dec. 31, 2017	Dec. 31, 2018
Other financial obligations		
Cable TV service contracts	323.7	295.7
IT service contracts	14.6	41.9
Supply contracts	–	13.9
Surcharges under the German Condominium Act	3.1	4.5
Other	–	4.0
	341.4	**360.0**

The obligations under cable TV service contracts are set against future income from the marketing of the cable TV service. The caretaker service contracts were gradually terminated and assumed by Vonovia's own craftsmen's organization.

48 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 with a view to enhancing its value, investing in existing 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 four segments: **Rental, Value-add, Recurring Sales and Development.** We also report the **Other segment,** which is not relevant from a corporate management perspective, in our segment reporting. This includes the disposal, only as and when the right opportunities present themselves, of entire buildings or land (Non-Core Disposals) 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.

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 both 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** (formerly known as "Value-add Business") 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 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. Energy supply is a new service that we have been offering our tenants since 2018.

The **Recurring Sales segment** (formerly part of the "Sales" segment) includes the regular and sustainable disposals of individual condominiums and single-family houses from our portfolio. It does not include the sale of entire buildings or land (Non-Core Disposals). 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. In the previous reporting period, Recurring Sales and Non-Core Disposals were shown combined in the Sales segment. As a result, the prior-year figures have been adjusted accordingly for the current reporting period.

The **Development segment** encompasses the project development of new residential buildings. This 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. As far as the prior-year reporting period is concerned, a fair value step-up is shown for those new buildings that fell within the sphere of responsibility of the Value-add segment in organizational terms. The segment reporting for 2017 does not yet show any fair value step-ups for new buildings in the Adjusted EBITDA.

A Group-wide planning and controlling system ensures 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 **Adjusted EBITDA Total** represents the **Group's adjusted earnings** before interest, taxes, depreciation and amortization adjusted for items that are not related to the period, recur irregularly or that are atypical for business operation and excluding effects from adjustments in value of investment properties.

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

in € million	Rental	Value-add	Recurring Sales	Develop-ment	Segments total	Other*	Consolida-tion*	Group
Jan. 1 – Dec. 31, 2018								
Segment income	1,894.2	1,462.2	356.1	225.1	3,937.6	741.4	-648.2	4,030.8
thereof external income	1,894.2	203.9	356.1	225.1	2,679.3	741.4	610.1	4,030.8
thereof internal income		1,258.3			1,258.3	–	-1,258.3	
Carrying amount of assets sold			-298.5		-298.5	-635.2		
Revaluation from disposal of assets held for sale			35.7		35.7	32.3		
Expenses for maintenance	-289.7				-289.7			
Production costs development				-181.8	-181.8			
Operating expenses	-289.4	-1,341.0	-14.2	-22.6	-1,667.2	-9.3	609.4	
Net income from fair value adjust-ments of new construction/develop-ment to hold				18.7	18.7		-18.7	
Adjusted EBITDA Total	1,315.1	121.2	79.1	39.4	1,554.8	129.2	-57.5	1,626.5
Non-recurring items								-106.6
Period adjustments from assets held for sale								0.5
Income from investments in other real estate companies								14.0
EBITDA IFRS								1,534.4
Net income from fair value adjust-ments of investment properties								3,517.9
Depreciation and amortization								-737.9
Income from other investments								-23.1
Financial income								32.1
Financial expenses								-449.1
EBT								3,874.3
Income taxes								-1,471.5
Profit for the period								**2,402.8**

* The income for the Rental, Value-add, Recurring Sales and Development 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 income/costs in the "Other" and "Consolidation" columns do not form part of the Management Board's segment management.

in € million	Rental	Value-add	Recurring Sales	Development	Segments total	Other*	Consolidation*	Group
Jan. 1 – Dec. 31, 2017								
Segment income	1,667.9	1,170.5	305.9	–	3,144.3	900.5	-446.8	3,598.0
thereof external income	1,667.9	161.6	305.9	–	2,135.4	900.5	562.1	3,598.0
thereof internal income	–	1,008.9	–	–	1,008.9	–	-1,008.9	
Carrying amount of assets sold			-265.7	–	-265.7	-870.3		
Revaluation from disposal of assets held for sale			35.1		35.1	35.4		
Expenses for maintenance	-258.0				-258.0			
Production costs development					–			
Operating expenses	-261.2	-1,068.4	-13.1	–	-1,342.7	-15.7	418.9	
Net income from fair value adjustments of new construction/development to hold				6.7	6.7		-6.7	
Adjusted EBITDA Total	1,148.7	102.1	62.2	6.7	1,319.7	49.9	-34.6	1,335.0
Non-recurring items								-86.9
Period adjustments from assets held for sale								10.7
Income from investments in other real estate companies								13.0
EBITDA IFRS								1,271.8
Net income from fair value adjustments of investment properties								3,434.1
Depreciation and amortization								-372.2
Income from other investments								-20.1
Financial income								46.8
Financial expenses								-353.0
EBT								4,007.4
Income taxes								-1,440.5
Profit for the period								**2,566.9**

* The income for the Rental, Value-add, Recurring Sales and Development 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 income/costs in the "Other" and "Consolidation" columns do not form part of the Management Board's segment management. The Sales segment reported in the previous year has been split into Recurring Sales and Non-Core Disposals (shown under "Other") and the costs associated with the transaction holding area have been allocated to the Rental segment.

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 and Development. The total of these key figures produces the Group's Adjusted EBITDA Total. 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 and expenses for refinancing and equity increases (where not treated as capital procurement costs).

The following table gives a detailed list of the non-recurring items for the reporting period:

in € million	Jan. 1 – Dec. 31, 2017	Jan. 1 – Dec. 31, 2018
Severance payments/pre-retirement part-time work arrangements	13.9	18.3
Business model optimisation/development of new fields of business	22.5	0.8
Acquisition costs incl. integration costs*	48.9	87.8
Refinancing and equity measures	1.6	-0.3
Total non-recurring items	**86.9**	**106.6**

* Including takeover costs and one-time expenses in connection with acquisitions, such as HR measures relating to the integration process. Figures for the previous year shown in line with the current reporting structure for 2018.

In the 2018 fiscal year, the **non-recurring items** eliminated in the Adjusted EBITDA as a whole came to € 106.6 million, up 22.7% on the prior-year value of € 86.9 million. The acquisition costs including integration costs for 2018 include € 20.0 million for acquisitions in earlier years, which are offset against tax income in the same amount, meaning that they do not affect the profit for the period. Taking this into account, the non-recurring items in the fiscal year came to € 86.6 million, on a par with the prior-year value of € 86.9 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	Other	Total
Jan. 1 – Dec. 31, 2018						
Revenue from ancillary costs (IFRS 15)	685.2	0.9	–	–	–	686.1
Income from the disposal of investment properties	–	–	186.0	–	575.4	761.4
Income from disposal of real estate inventories (Development)	–	–	–	225.1	–	225.1
Other revenue from contracts with customers	14.6	45.7				60.3
Revenue from contracts with customers	**699.8**	**46.6**	**186.0**	**225.1**	**575.4**	**1,732.9**
thereof period-related				58.1		58.1
thereof time-related income	763.8	46.6	186.0	167.0	575.4	1,738.8
Income from rental income (IAS 17)	1,894.2	3.6	–	–	–	1,897.8
Revenue from ancillary costs (IAS 17)	64.0	–	–	–	–	64.0
Income from sale of assets held for sale (IFRS 5)	–	–	170.1	–	166.0	336.1
Other revenue	**1,958.2**	**3.6**	**170.1**	**–**	**166.0**	**2,297.9**
Revenues	**2,658.0**	**50.2**	**356.1**	**225.1**	**741.4**	**4,030.8**

in € million	Rental	Value-add	Recurring Sales	Development	Other	Total
Jan. 1 – Dec. 31, 2017						
Revenue from ancillary costs (IFRS 15)	610.5	0.1	–	–	–	610.6
Income from the disposal of investment properties	–	–	122.2	–	344.7	466.9
Income from disposal of real estate inventories (Development)	–	–	–	–	–	–
Other revenue from contracts with customers	15.4	32.2	–	–	–	47.6
Revenue from contracts with customers	**625.9**	**32.3**	**122.2**	**–**	**344.7**	**1,125.1**
thereof period-related	–	–	–	–	–	–
thereof time-related income	625.9	32.3	122.2	–	344.7	1,125.1
Income from rental income (IAS 17)	1,667.9	4.2	–	–	–	1,672.1
Revenue from ancillary costs (IAS 17)	61.3	–	–	–	–	61.3
Income from sale of assets held for sale (IFRS 5)	–	–	183.7	–	555.8	739.5
Other revenue	**1,729.2**	**4.2**	**183.7**	**–**	**555.8**	**2,472.9**
Revenues	**2,355.1**	**36.5**	**305.9**	**–**	**900.5**	**3,598.0**

External income 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 is allocated based on the registered office of the unit providing the service.

	External income		Assets	
in € million	2018	2017	2018	2017
Germany	3,598.6	3,249.1	42,670.5	36,147.7
Austria	345.9	341.7	2,789.5	549.4
Sweden	59.5	0.0	1,977.0	0.0
France	0.0	0.0	87.0	0.0
Other countries	26.8	7.2	61.5	12.2
Total	**4,030.8**	**3,598.0**	**47,585.5**	**36,709.3**

49 Related Party Transactions

Vonovia had business relationships with unconsolidated subsidiaries in the 2018 fiscal year. These transactions generally resulted from the normal exchange of deliveries and services and are shown in the table below:

	Purchased services		Receivables		Liabilities	
in € million	2017	2018	2017	2018	2017	2018
Associated companies	–	0.6	–	0.4	–	1.5

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 paid to 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	2017	2018
Short-term employee benefits (without share-based payment)	7.0	6.5
Post-employment benefits	1.8	1.3
Share-based payment	10.5	3.2
	19.3	**11.0**

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 note [50] Share-based Payment

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

Information on the individual remuneration of the Management Board and Supervisory Board members, as well as a description of the remuneration system, are given in the remuneration report, which is part of the combined management report, and in note [51] Remuneration.

50 Share-based Payments

Management Board

Under the long-term incentive plan (LTIP), the former Management Board members were granted a total of 931,030 notional shares (SARs = stock appreciation rights) in 2013. These were paid out in five annual tranches with a cliff vesting of 20% per calendar year of the total number of notional shares granted. In 2018, the last annual tranche was paid out to Rolf Buch, resulting in income pursuant to IFRS 2 of € 0.2 million (2017: € 2.5 million).

As part of the new LTIP plan, the Management Board members are granted annually on a fixed number of phantom stocks (performance share units or "PSU"), which are paid out at the end of a four-year performance period based on the extent to which a pre-defined target achievement level has been reached. The level of target achievement that determines the payout amount under the new LTIP plan is calculated based on the following parameters: Relative Total Shareholder Return (RTSR), Performance of NAV per Share, Performance of FFO I per Share and the Customer Satisfaction Index (CSI), which are all assigned an equal weighting of 25%. As a result, this new LTIP plan 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 notional shares that had been granted but not paid out from the new LTIP plan as of December 31, 2018, 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	Rolf Buch	Klaus Freiberg	Helene von Roeder	Daniel Riedl	Dr. A. Stefan Kirsten	Gerald Klinck	Thomas Zinnöcker
2015-2018	Dec. 31, 2018	2,294,640	764,880	–	–	764,880	573,660	1,649,273
2016-2018	Dec. 31, 2018	–	318,221	–	–	318,221	318,221	–
2016-2019	Dec. 31, 2019	1,600,476	711,322	–	–	711,322	711,322	113,614
2017-2020	Dec. 31, 2020	1,338,004	563,370			563,370	563,370	–
2018-2021	Dec. 31, 2021	501,357	211,098	96,751	96,751	87,957	87,957	–

The LTIP plan program resulted in expenses pursuant to IFRS 2 totaling € 5.9 million in the 2018 reporting year (2017: € 8.0 million), with € 2.1 million attributable to Rolf Buch, € 1.2 million to Klaus Freiberg, € 0.1 million to both Helene von Roeder and Daniel Riedl, € 1.0 million to both Dr. A. Stefan Kirsten and Gerald Klinck and € 0.4 million to Thomas Zinnöcker.

For further information, please refer to the remuneration report.

Executives Below Management Board Level

In 2014, Vonovia resolved a virtual share program (LTIP) for executives at the highest level of management below the Management Board with effect from January 1, 2014. Notional shares were granted under this LTIP, subject to a waiting period of three calendar years, for the last time on January 1, 2015. The last tranche was paid out in 2018, with expenses of k € 19 being incurred for the last time in 2018 (2017: € 0.5 million).

In 2016, a new LTIP plan was launched for the first level of management, replacing the LTIP that was launched in 2014, to bring the targets for the Management Board and other employees in management positions below Management Board level even closer into line with shareholder interests.

The LTIP plan is based largely on the LTIP launched for the Management Board in 2015, 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.

The value of the total notional shares that had been granted but not paid out from the new LTIP plan as of December 31, 2018, 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, 2018
2016	Dec. 31. 2019	1,485,478
2017	Dec. 31. 2020	996,735
2018	Dec. 31. 2021	371,620

The LTIP plan program results, in accordance with IFRS, in expenses of € 1.5 million in the 2018 reporting year (2017: € 1.0 million).

Employees

An employee share program was resolved on the basis of a works agreement in 2014. The program started in the first quarter of 2015 and the shares granted are 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 € 90.00 and € 360.00 at the most are granted to the eligible employees, depending on their gross annual salary, without the employees having to make any contribution of their own.

The new employee share program resulted in expenses totaling € 1.8 million in the 2018 reporting year (2017: € 1.5 million), which have been offset directly against the capital reserves.

51 Remuneration

Remuneration of the Supervisory Board

The members of the Supervisory Board received total remuneration of € 1.8 million during the 2018 fiscal year (2017: € 1.8 million) for their work.

Total Remuneration of the Management Board

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

Total remuneration of the Management Board in €	Rolf Buch, CEO		Klaus Freiberg, COO		Helene von Roeder, CFO since May 9, 2018	
	2017	**2018**	**2017**	**2018**	**2017**	**2018**
Fixed remuneration	1,150,000	1,150,000	600,000	600,000	–	386,957
Compensation payment	–	–	–	–	–	64,874
Cash remuneration/deferred compensation	355,000	355,000	160,000	160,000	–	103,188
Fringe benefits	24,006	26,651	27,603	27,600	–	13,157
Total	1,529,006	1,531,651	787,603	787,600	–	568,176
Annual variable remuneration (bonus)	700,000	700,000	440,000	528,000	–	283,768
Multi-year variable remuneration (LTIP plan)						
2017–2020	2,040,633	–	859,224	–	–	–
2018–2021	–	1,902,392	–	801,007	–	516,592
(number of shares)	(61,469)	(48,669)	(25,882)	(20,492)	–	(13,216)
Total	2,740,633	2,602,392	1,299,224	1,329,007	–	800,360
Total remuneration	**4,269,639**	**4,134,043**	**2,086,827**	**2,116,607**	**–**	**1,368,536**

Total remuneration of the Management Board in €	Daniel Riedl, CDO since May 9, 2018		Dr. A. Stefan Kirsten, CFO until May 9, 2018		Gerald Klinck, CCO until May 9, 2018		Total remuneration	
	2017	**2018**	**2017**	**2018**	**2017**	**2018**	**2017**	**2018**
Fixed remuneration	–	386,957	600,000	215,217	600,000	215,217	2,950,000	2,954,348
Compensation payment	–	15,111	–	–	–	–	–	64,874
Cash remuneration/deferred compensation	–	103,188	160,000	53,333	160,000	57,391	835,000	832,100
Fringe benefits	–	18,932	32,723	24,105	24,503	7,317	108,835	117,762
Total	–	524,188	792,723	292,655	784,503	279,925	3,893,835	3,969,084
Annual variable remuneration (bonus)	–	283,768	440,000	157,826	440,000	157,826	2,020,000	2,111,188
Multi-year variable remuneration (LTIP plan)								
2017–2020	–	–	859,224	–	859,224	–	4,618,305	–
2018–2021	–	516,592	–	333,753	–	333,753	–	4,404,089
(number of shares)	–	(13,216)	(25,882)	(8,539)	(25,882)	(8,539)	(139,115)	(112,671)
Total	–	800,360	1,299,224	491,579	1,299,224	491,579	6,638,305	6,515,277
Total remuneration	**–**	**1,324,548**	**2,091,947**	**784,234**	**2,083,727**	**771,504**	**10,532,140**	**10,484,361**

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

Pension Obligations to Members of the Management Board

Rolf Buch, Helene von Roeder, Dr. A. Stefan Kirsten and Gerald Klinck are/were paying their contractual share of € 355,000 (Rolf Buch), € 103,188 (Helene von Roeder), € 53,333 (Dr. A. Stefan Kirsten) and € 57,391 (Gerald Klinck) respectively, based on their fixed remuneration, into the deferred compensation scheme. Klaus Freiberg has opted for a cash payout for his entitlement of € 160,000. In Daniel Riedl's case, the annual pension contribution of € 103,188 made by BUWOG is paid into an external pension fund.

The pension obligations to members of the Management Board from deferred compensation comprise the following:

	Contribution total as of December 31,		Defined benefit obligation as of December 31,	
€	**2017**	**2018**	**2017**	**2018**
Rolf Buch	949,253	966,356	3,064,938	3,969,413
Helene von Roeder	–	265,457	–	265,677
Dr. A. Stefan Kirsten	367,388	116,396	2,179,047	–*
Gerald Klinck	491,198	192,180	1,257,330	–*

* For Dr. A. Stefan Kirsten and Gerald Klinck, these figures relate to the service cost up until May 9, 2018. In respect of Dr. A. Stefan Kirsten and Gerald Klinck, the pension obligations in accordance with the IFRS as of December 31, 2018, are recognized in pension obligations (DBO) to former members of the Management Board.

Remuneration of Former Management Board Members and Their Surviving Dependents

Total remuneration of former Management Board members and their surviving dependents amounts to € 6.2 million for the 2018 fiscal year (2017: € 2.0 million). The total remuneration includes the severance payment in accordance with the provisions set out in the contract of employment of Dr. A. Stefan Kirsten. This payment applies in connection with the amicable termination of his Management Board contract as of May 9, 2018.

The pension obligations (DBO) to former members of the Management Board and their surviving dependents amount to € 19.1 million (2017: € 14.3 million).

52 Auditor's 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	2017	2018
Audits	3.7	3.2
Other confirmation services	1.0	0.6
Tax consultancy services	0.3	–
	5.0	**3.9**

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. Consolidated interim financial statements were also reviewed.

The other confirmation services include reviews of reconciliations on the interest threshold based on audit standard IDW PS 900, business audits performed in accordance with Section 2 of the Act on the Code of Professional Practice for German Public Auditors (WPO) on compliance with the regulations governing loans granted by the German government-owned development bank KfW, business audits pursuant to ISAE 3000 relating to various housing assistance reports and the voluntary business audits of tax compliance management systems in accordance with IDW PS 980. Other confirmation services also include services associated with the issue of comfort letters pursuant to audit standard IDW PS 910 of the Institute of Public Auditors in Germany, the issue of valuation certificates and project audits relating to IT migrations.

53 Subsequent Events

Vonovia SE successfully sold its roughly 16.8 million shares in Deutsche Wohnen SE ("Deutsche Wohnen") to institutional investors with effect as of February 1, 2019, by means of an accelerated bookbuilding procedure; the shares were sold for a price of € 41.50 per share. This corresponds to a customary market discount of 4.8% on the closing price of € 43.59 as of January 31, 2019. This results in total proceeds of € 698.1 million. The acquisition costs at the time amounted to € 405.5 million, resulting in a book gain of € 292.6 million from this disposal in the 2019 annual financial statements of Vonovia SE.

The IFRS consolidated financial statements included the shares in Deutsche Wohnen with a fair value of € 672.8 million as of December 31, 2018. This means that, over the course of time, € 267.3 million in fair value increases had been recognized under other comprehensive income directly in other reserves. This amount will be reclassified to retained earnings, not affecting net income, pursuant to the designation under IFRS 9 when the transaction is completed.

The increase in fair value between December 31, 2018, and the transaction date of January 31, 2019, in the amount of € 25.3 million will also be recognized in other comprehensive income. Transaction costs will be recognized affecting net income.

On February 12, 2019, Vonovia terminated the subordinated bond of € 700 million in due form with effect from April 8 via Vonovia Finance B. V. and announced the corresponding repayment.

With effect from January 29, 2019, and as part of its EMTN program, Vonovia placed a bond with a nominal volume of € 500 million and a coupon of 1.800% maturing on June 29, 2025, via its Dutch subsidiary Vonovia Finance B. V. The first interest payment date is June 29, 2019.

The conversion of BUWOG AG, Vienna/Austria, into BUWOG Group GmbH, Vienna/Austria, was entered in the Vienna/Austria commercial register with effect from January 25, 2019.

54 Declaration of Conformity with the German Corporate Governance Code

In February 2019, the Management Board and the Supervisory Board declared compliance with the recommendations of the German Corporate Governance Code in accordance with Section 161 of the German Stock Corporation Act (AktG) and made the declaration permanently available on the company's website (www.vonovia.de).

55 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 2018 fiscal year of € 909,643,381.62, an amount of € 135,000,000.00 be added to other revenue reserves and an amount of € 746,032,224.96 on the 518,077,934 shares of the share capital as of December 31, 2018, be paid as a dividend, corresponding to € 1.44 per share, to the shareholders and the remaining amount of € 28,611,156.66 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 of the share capital as of December 31, 2018.

As with the 2017 financial year, the dividend for the 2018 fiscal year, payable after the Annual General Meeting in May 2019, will again include the election of a non-cash dividend in shares, to the extent deemed economically sensible by the Supervisory Board."

Bochum, Germany, February 25, 2019

Rolf Buch
(CEO)

Klaus Freiberg
(COO)

Helene von Roeder
(CFO)

Daniel Riedl
(CDO)