Consolidated Financial Statements

Income Statement

Income statement

Euro 000s	**1 Oct 2017 to 30 Sep 2018**	1 Oct 2016 to 30 Sep 2017	Notes
Sales	4,069,671	4,177,900	
less electricity and natural gas taxes	166,911	168,384	
Sales after electricity and natural gas taxes	**3,902,760**	**4,009,516**	1
Changes in inventories	−30,930	−15,053	2
Own work capitalised	19,076	19,152	3
Other operating income	418,258	320,598	4
Cost of materials	2,957,761	3,078,743	5
Employee benefit expenses	422,744	418,678	6
Other operating expenses	459,323	408,141	7
Income from companies recognised at equity	−110	11,942	8
Other income from shareholdings	1,133	1,666	8
Restructuring result	821	–	
EBITDA	**471,180**	**442,259**	
Depreciation	180,680	182,748	9
EBITA	**290,500**	**259,511**	
Goodwill amortisation	33,706	–	14
EBIT	**256,794**	**259,511**	
of which result of IAS 39 derivative measurement	31,591	38,900	
of which EBIT before result of IAS 39 derivative measurement	225,203	220,611	
Financing income	12,577	14,624	10
Financing expenses	59,669	68,515	11
EBT	**209,702**	**205,620**	
Taxes on income	77,289	73,135	12
Annual net income	**132,413**	**132,485**	
of which non-controlling interests	2,411	11,145	
of which earnings attributable to MVV Energie AG shareholders (annual net income after minority interests)	**130,002**	**121,340**	13
Basic and diluted earnings per share (Euro)	**1.97**	**1.84**	

Statement of Comprehensive Income

Statement of income and expenses recognised in group equity

Euro 000s	**1 Oct 2017 to 30 Sep 2018**	1 Oct 2016 to 30 Sep 2017
Annual net income	**132,413**	**132,485**
Cash flow hedges	24,195	32,266
Currency translation differences	1,376	2,814
Reclassifiable share of companies recognised at equity	166	–
Items that may subsequently be reclassified to profit or loss	**25,737**	**35,080**
Actuarial gains and losses	893	7,555
Non-reclassifiable share of companies recognised at equity	14,370	−11,439
Items that will not be reclassified to profit or loss	**15,263**	**−3,884**
Total comprehensive income	**173,413**	**163,681**
Non-controlling interests	7,369	17,644
Total comprehensive income attributable to MVV Energie AG shareholders	**166,044**	**146,037**

Balance Sheet

Balance sheet

Euro 000s	**30 September 2018**	30 September 2017	Notes
Assets			
Non-current assets			
Intangible assets	315,923	345,064	14
Property, plant and equipment	2,588,247	2,519,369	15
Investment properties	2,451	2,404	16
Interests in companies recognised at equity	189,414	180,015	17, 18
Other financial assets	57,662	56,541	20
Other receivables and assets	309,020	189,270	21
Deferred tax assets	30,420	33,435	33
	3,493,137	**3,326,098**	
Current assets			
Inventories	160,962	282,529	22
Trade receivables	381,729	351,104	23
Other receivables and assets	765,978	343,443	21
Tax receivables	27,586	18,908	24
Securities	–	7	
Cash and cash equivalents	310,589	370,301	25
Assets held for sale	–	20,498	26
	1,646,844	**1,386,790**	
	5,139,981	**4,712,888**	
Equity and debt			
Equity			27
Share capital	168,721	168,721	
Capital reserve	455,241	455,241	
Accumulated net income	777,222	705,028	
Accumulated other comprehensive income	−20,761	−56,772	
Capital of MVV	**1,380,423**	**1,272,218**	
Non-controlling interests	244,791	248,884	
	1,625,214	**1,521,102**	
Non-current debt			
Provisions	181,370	198,689	28, 29
Tax provisions	–	4,987	28
Financial debt	1,163,138	1,299,227	30
Other liabilities	403,883	310,268	31
Deferred tax liabilities	173,809	162,983	33
	1,922,200	**1,976,154**	
Current debt			
Other provisions	138,988	134,794	28, 29
Tax provisions	54,879	31,803	28
Financial debt	222,858	148,413	30
Trade payables	340,256	351,179	32
Other liabilities	835,147	548,369	31
Tax liabilities	439	1,074	33
	1,592,567	**1,215,632**	
	5,139,981	**4,712,888**	

Statement of Changes in Equity

Statement of changes in equity

	Equity contributed		Equity generated						
				Accumulated other comprehensive income					
Euro 000s	Share capital of MVV Energie AG	Capital reserve of MVV Energie AG	Accumulated net income	Currency translation differences	Fair value measure-ment of financial instruments	Actuarial gains and losses	**Capital of MVV**	Non-controlling interests	**Total capital**
Balance at 1 Oct 2016	**168,721**	**455,241**	**640,654**	**14,780**	**−34,590**	**−61,659**	**1,183,147**	**243,208**	**1,426,355**
Other income and expenses recognised directly in equity	–	–	–	2,717	27,627	−5,647	24,697	6,499	31,196
Result of business operations	–	–	121,340	–	–	–	121,340	11,145	132,485
Total comprehensive income	**–**	**–**	**121,340**	**2,717**	**27,627**	**−5,647**	**146,037**	**17,644**	**163,681**
Dividends paid	–	–	−59,316	–	–	–	−59,316	−13,422	−72,738
Change in scope of consolidation	–	–	−103	–	–	–	−103	21	−82
Other changes	–	–	2,453	–	–	–	2,453	1,433	3,886
Balance at 30 Sep 2017	**168,721**	**455,241**	**705,028**	**17,497**	**−6,963**	**−67,306**	**1,272,218**	**248,884**	**1,521,102**
Balance at 1 Oct 2017	**168,721**	**455,241**	**705,028**	**17,497**	**−6,963**	**−67,306**	**1,272,218**	**248,884**	**1,521,102**
Other income and expenses recognised in equity	–	–	–	1,089	19,909	15,044	36,042	4,958	41,000
Result of business operations	–	–	130,002	–	–	–	130,002	2,411	132,413
Total comprehensive income	**–**	**–**	**130,002**	**1,089**	**19,909**	**15,044**	**166,044**	**7,369**	**173,413**
Dividends paid	–	–	−59,316	–	–	–	−59,316	−17,753	−77,069
Capital increase/ reduction at subsidiaries	–	–	–	–	–	–	–	8,634	8,634
Change in scope of consolidation	–	–	1,508	−31	–	–	1,477	−2,343	−866
Balance at 30 Sep 2018	**168,721**	**455,241**	**777,222**	**18,555**	**12,946**	**−52,262**	**1,380,423**	**244,791**	**1,625,214**

Cash Flow Statement

Cash flow statement [1]

Euro 000s	**1 Oct 2017 to 30 Sep 2018**	1 Oct 2016 to 30 Sep 2017
Annual net income before taxes on income	209,702	205,620
Amortisation, depreciation and write-ups on intangible assets, property, plant and equipment and investment properties	214,386	175,612
Financial result	47,092	53,891
Interest received	7,550	7,490
Change in non-current provisions	126	11,566
Other non-cash income and expenses	−440	−17,307
Result of disposal of non-current assets	−28,512	668
Cash flow before working capital and taxes	**449,904**	**437,540**
Change in other assets [2]	29,044	129,029
Change in other liabilities [2]	−71,387	13,574
Change in current provisions	−12,545	−40,435
Income taxes paid	−63,528	−66,114
Cash flow from operating activities	**331,488**	**473,594**
Payments for investments in intangible assets, property, plant and equipment and investment properties	−269,376	−177,271
Proceeds from disposals of intangible assets, property, plant and equipment and investment properties	56,577	3,980
Proceeds from subsidy payments	14,808	14,472
Proceeds from sale of fully consolidated companies	–	150
Proceeds from sale of other financial assets	281	26,063
Payments for acquisition of fully consolidated companies and other business units	−4	−5,165
Payments for other financial assets	−14,073	−26,873
Cash flow from investing activities	**−211,787**	**−164,644**
Proceeds from taking up of loans	190,250	263,773
Payments for redemption of loans	−250,597	−407,561
Dividends paid	−59,316	−59,316
Dividends paid to non-controlling interests	−17,753	−13,422
Change due to changes in capital at minority interests	7,914	20
Interest paid	−49,703	−54,779
Cash flow from financing activities	**−179,205**	**−271,285**
Cash-effective changes in cash and cash equivalents	−59,504	37,665
Change in cash and cash equivalents due to currency translation	−208	−405
Cash and cash equivalents at 1 October 2017 (2016)	370,301	333,041
Cash and cash equivalents at 30 September 2018 (2017)	**310,589**	**370,301**
of which cash and cash equivalents at 30 September 2018 (2017) with restraints on disposal	1,226	1,218

1 Further information about cash flow statement in Note 37
2 Previous year’s figures adjusted; further information about this in Note 37

Cash flow – aggregate presentation

Euro 000s	**1 Oct 2017 to 30 Sep 2018**	1 Oct 2016 to 30 Sep 2017
Cash and cash equivalents at 1 October 2017 (2016)	**370,301**	**333,041**
Cash flow from operating activities	331,488	473,594
Cash flow from investing activities	−211,787	−164,644
Cash flow from financing activities	−179,205	−271,285
Change in cash and cash equivalents due to currency translation	−208	−405
Cash and cash equivalents at 30 September 2018 (2017)	**310,589**	**370,301**

Notes to MVV's 2018 Consolidated Financial Statements

Information about the company

MVV Energie AG has its legal domicile in Mannheim, Germany. Its business address is at Luisenring 49, 68159 Mannheim. It is the parent company of the MVV Group, which acts as an energy generator, distributor and service provider. Its business is managed in the reporting segments of Customer Solutions, New Energies, Supply Reliability, Strategic Investments and Other Activities.

Basis of preparation

MVV's consolidated financial statements have been prepared pursuant to § 315e (1) of the German Commercial Code (HGB) in accordance with the International Financial Reporting Standards (IFRS) issued by the International Accounting Standards Board (IASB) and the interpretations (IFRIC) of the IFRS Interpretations Committee (IFRS IC). The consolidated financial statements thus fully conform with the IFRS and IFRIC published by the IASB and the IFRS IC to the extent that these had been adopted by the European Union at the end of the period under report and required mandatory application as of 30 September 2018.

The consolidated financial statements have been prepared as of the balance sheet date for the annual financial statements of MVV Energie AG and refer to the 2018 financial year (1 October 2017 to 30 September 2018). The consolidated financial statements are compiled in euros. Unless otherwise indicated, all amounts are stated in thousand euros (Euro 000s).

The income statement has been prepared using the total cost method. In the interests of clarity, individual items have been presented in summarised form in the income statement and balance sheet and listed and commented on separately in the notes.

The Executive Board of MVV Energie AG is responsible for the preparation, completeness and accuracy of the consolidated financial statements and the combined management report. The Executive Board prepared the consolidated financial statements and combined management report on 13 November 2018 and subsequently forwarded these to the Supervisory Board for approval.

Changes in accounting policies

The International Accounting Standards Board (IASB) and the IFRS Interpretations Committee (IFRS IC) have revised or newly adopted some standards and interpretations which require mandatory application for the first time in the 2018 financial year. None of the standards and interpretations not listed in the table below has any (material) implications for MVV:

Amended standards and interpretations

	EU endorsement	Effective date[1]	Implication
IAS 7 Disclosure Initiative	6 Nov 2017	1 Jan 2017	The amendments to IAS 7 require disclosures to be made on changes in those financial liabilities whose incoming and outgoing payments are presented in the cash flow from financing activities in the cash flow statement. Provided in the form of a table, this information will supplement the note disclosures on the cash flow statement.

1 Applicable in financial years beginning on or after the date stated

The IASB and the IFRS IC published standards and interpretations not yet requiring mandatory application in the 2018 financial year and of which no voluntary premature application has been made. None of the standards and interpretations not listed in the table below is expected to have any material implications for MVV:

Amended standards and interpretations

		EU endorsement	Effective date[1]
IFRS 9	Financial Instruments: Classification and Measurement of Financial Assets	22 Nov 2016	1 Jan 2018
IFRS 15	Revenue from Contracts with Customers	22 Sep 2016	1 Jan 2018
IFRS 15	Clarification to Revenue from Contracts with Customers	31 Oct 2017	1 Jan 2018
IFRS 16	Leases	31 Oct 2017	1 Jan 2019

1 Applicable in financial years beginning on or after the date stated

The IASB published the definitive version of IFRS 9 "Financial Instruments" in July 2014. The new standard replaces the existing provisions of IAS 39 "Financial Instruments: Recognition and Measurement" and requires mandatory application in financial years beginning on or after 1 January 2018. This standard was adopted into European law in November 2016. MVV Energie AG will make first-time application of the standard from the beginning of the 2019 financial year.

IFRS 9 includes revised provisions governing the classification and measurement of financial instruments, the impairment of financial assets and the recognition of hedge relationships.

In future, the classification of financial assets will be based on the business model and the contractual cash flow characteristics of the respective financial instrument. Where the requirements for the "hold" business model and the contractual cash flow characteristics of the respective debt instrument are met, these debt instruments will continue to be recognised at amortised cost. Where, in respect of the business model, only the conditions for "hold and sell" and simultaneously the conditions for the contractual cash flow characteristics of the respective debt instrument are met, fair value changes for these debt instruments will be recognised in other comprehensive income with the exception of changes resulting from amended loss allowances. All other debt instruments will be recognised in future at fair value, with changes in value being credited or charged to the income statement. Equity instruments will require recognition at fair value in future. Here, fair value adjustments may be recognised either in the income statement or in other comprehensive income. The previous exception allowing equity instruments to be recognised at cost in specific circumstances no longer applies. The requirements governing financial liabilities set out in IAS 39 have largely been retained. Apart from the exception relating to the classification of equity instruments, the new requirements for classifying financial instruments will not have any material quantitative implications for MVV. Due to the amended requirements for equity instruments, we expect the value of other shareholdings to appreciate by a medium single-digit million euro amount.

Unlike IAS 39 requirements, the new impairment model in IFRS 9 accounts not only for losses that have already materialised, but also for expected losses (expected loss model). This means that impairments of financial assets are recognised at an earlier point in time. Moreover, when determining loss allowances greater reference will have to be made to prospective information. This will mainly affect trade receivables. Loss allowances for trade receivables without significant financing components and for contract assets are calculated using the simplified approach set out in IFRS 9. First-time application of the new impairment model will lead to an increase no greater than Euro 2 million in loss allowances. This item will be recognised in equity in the 2019 opening balance sheet.

The revised hedge accounting requirements are intended to create a closer relationship between a company's risk management strategy and the conclusion of a hedging relationship. Furthermore, IFRS 9 has extended the range of hedged items eligible for hedge accounting and simplified the effectiveness measurement and thus the conditions governing eligibility for hedge accounting. MVV will be able to maintain its existing hedging relationships under IFRS 9. Furthermore, under IFRS 9 the changes in the fair value of an option designated as a hedging instrument have to be recognised as hedging costs in other comprehensive income. The amounts recognised in other comprehensive income are subsequently reflected in the hedged item either on a transaction or on a period basis. This adjustment requires retrospective implementation. MVV's existing hedging relationships are affected to a very minor extent by this amendment.

The IASB published the new standard IFRS 15 "Revenue from Contracts with Customers" in May 2014. This was adopted in European law in September 2016. It includes completely revised revenue recognition requirements and replaces the existing standards and interpretations IAS 11 "Construction Contracts", IAS 18 "Revenue", IFRIC 13 "Customer Loyalty Programmes", IFRIC 15 "Agreements for the Construction of Real Estate", IFRIC 18 "Transfers of Assets from Customers" and SIC-31 "Revenue – Barter Transactions Involving Advertising Services". It lays down a framework to determine whether, when and at what amount revenues require recognition.

In future, the revenues requiring recognition will be determined by reference to a five-step model. Moreover, IFRS 15 includes extended note disclosure requirements. The standard requires first-time mandatory application in all financial years beginning after 1 January 2018. MVV will apply this standard for the first time at the beginning of the 2019 financial year. First-time application is basically required to be retrospective.

In April 2016, the IASB published clarifications to IFRS 15 relating in particular to the identification of separate performance obligations, the delineation of principals and agents and the recognition of licensing income. The EU adopted these clarifications in European law on 31 October 2017.

In a project addressing implementation of IFRS 15, MVV has assessed the potential implications of applying IFRS 15 for its consolidated financial statements. The following main implications were identified:

- For allocations in the renewable energies business, the clarifications relating to the constellation of principal or agent status will lead in future to a reduction in sales and an equivalent reduction in cost of materials. The level of netting will depend on future developments in the market premium and is expected to amount to between Euro 250 million and Euro 350 million.

- Balance sheet reclassifications will arise between the assets currently recognised and contractual assets and between the liabilities currently recognised and contractual liabilities.

  These will result above all from building cost grants and advance payments received.

- The capitalisation of contract acquisition costs will result in a slight extension in the balance sheet. These costs will be amortised over the average contractual term. Contract acquisition costs for terms of less than one year will be directly expensed.

- Furthermore, in connection with the introduction of IFRS 15 we have also converted the period over which building cost grants are written back to 20 years. The resultant increase in equity amounts to around Euro 30 million.

MVV has selected the cumulative retrospective method for the initial application date.

The new standard IFRS 16 “Leasing” introduced new lease accounting requirements which will in future replace the existing requirements and definitions in IAS 17, IFRIC 4, SIC-15 and SIC-27. The previous classification of leases at the lessee as operating or finance leases has been abolished and replaced by a uniform right-of-use model. One exception relates to contracts with terms of less than twelve months and low-value assets. An accounting option is provided for these contracts. Implementation of the new standard will mean that in future operating leases will also trigger capital retention in the form of a right-of-use asset and a liability. This approach is largely comparable with that currently taken to recognise finance leases. For lessors, the accounting model does not differ to any significant extent from that in IAS 17 “Leases”.

The provisions of IFRS 16 will require mandatory application in financial years beginning on or after 1 January 2019. MVV will prematurely apply the new standard for the first time in its financial year beginning on 1 October 2018. This is because the company will also apply IFRS 15 for the first time from this date. One material implication identified is that the Group will recognise right-of use assets for its operating leases and lease liabilities in the same amount. This is expected to extend the balance sheet by between Euro 65 million and Euro 95 million. In the income statement, the new accounting requirements will lead to an amendment in the recognition of lease expenses. This is because IFRS 16 replaces straight-line expenses for operating leases in adjusted EBIT with the amortisation of right-of-use assets and interest expenses for lease liabilities.

No material implications are expected for finance leases.

MVV will draw on the options provided for current and low-value leases. With regard to the transitional requirements, MVV will apply the modified retrospective approach.

Consolidation methods

The financial statements included in consolidation have been prepared on the basis of uniform accounting policies as of 30 September 2018.

Subsidiaries are fully consolidated upon acquisition, i.e. from the time when the Group gains control. Their inclusion in the consolidated financial statements ends when they are no longer controlled by the parent company. Capital consolidation is based on the purchase method. Non-controlling interests held in the earnings and net assets of fully consolidated companies are not attributable to the Group. In the consolidated balance sheet, they are recognised within equity, separately from the equity attributable to shareholders in the parent company. Subsidiaries that due to materiality considerations have not been fully consolidated in MVV's consolidated financial statements have been reported under other majority shareholdings.

Interests in associates and joint ventures are consolidated using the equity method.

Shareholdings in companies not included by way of full consolidation or by application of the equity method have been accounted for pursuant to IAS 39.

Receivables and liabilities between consolidated companies are offset against each other, as are income and expenses. Material intercompany results have also been eliminated.

Scope of consolidation and changes in scope of consolidation

In addition to MVV Energie AG, all material German and foreign subsidiaries in which MVV Energie AG directly or indirectly holds a majority of the voting rights have been included in MVV's consolidated statements. Furthermore, subsidiaries at which contractual provisions result in control by MVV are included in the consolidated financial statements irrespective of whether MVV holds a majority of voting rights.

Scope of consolidation

Number of companies	**Fully consolidated companies**	**Companies recognised at equity**
30 September 2017	163	34
Additions	34	6
Disposals	25	3
30 September 2018	**172**	**37**

The acquired fully consolidated companies involve project companies acquired at the Juwi subgroup, the takeover of an existing energy from waste plant in Dundee/Scotland and a biogas plant in Dresden. The additions to fully consolidated companies also include newly founded companies – mainly project companies at the Juwi and Windwärts subgroups – and additions resulting from a change in the status of other majority shareholdings. The fully consolidated companies thereby added did not lead to any material changes in MVV's net asset, financial and earnings situation. Disposals of fully consolidated companies mostly relate to mergers at the Juwi and Energieversorgung Offenbach subgroups.

The changes in companies recognised at equity also mainly relate to the Juwi subgroup. These involve sales and additions resulting from changes of status due to sales of shares.

Currency translation

Foreign currency transactions are recognised at the spot rate applicable at the time the consolidated companies executed the transaction. Monetary assets and liabilities stated in foreign currencies are translated at each balance sheet date at the rate valid on the balance sheet date. Currency translation differences are recognised either within operating earnings or in the financial result in line with their respective allocation.

Annual financial statements of foreign group companies are translated into euros (the reporting currency of the Group) in accordance with the functional currency concept and using the modified reporting date method. MVV determines the functional currency for each of its companies.

Assets and liabilities are translated from their respective national currencies into euros at the mean exchange rate valid on the balance sheet date. Income and expense items are translated using annual average exchange rates. Currency differences resulting from the use of different exchange rates for the balance sheet and the income statement are recognised directly in equity under accumulated other comprehensive income (currency translation differences).

Currency translation has been based on the following main exchange rates:

Currency translation

	Reporting date rate		Average rate	
1 Euro	**30 Sep 2018**	30 Sep 2017	**1 Oct 2017 to 30 Sep 2018**	1 Oct 2016 to 30 Sep 2017
Czech crown (CZK)	25.731	25.981	25.591	26.671
British pound (GBP)	0.887	0.882	0.885	0.872
US dollar (USD)	1.158	1.181	1.190	1.105
South African rand (ZAR)	16.445	15.944	15.570	14.783

Source: European Central Bank

Accounting policies

Assets and liabilities are measured at amortised cost in all cases with the exception of certain assets, liabilities and derivative financial instruments which IAS 39 and IFRS 13 require to be measured at fair value where this can be reliably determined. Non-current receivables and debt are recognised at fair value. Assets and liabilities are netted where the relevant requirements are met. Income and expenses derived from assets and liabilities are recognised under earnings from operations or in the financial result depending on the respective balance sheet item. Period deferrals are accounted for where necessary. Items are recognised directly in equity where International Accounting Standards so require and are presented separately in the statement of changes in equity.

The underlying principles of recognition and measurement applied when preparing MVV's consolidated financial statements are set out below.

Intangible assets

Intangible assets were mainly acquired in return for payment and are carried at cost, reduced where appropriate by subsidies received. They are subject to straight-line amortisation based on their pattern of consumption. Useful lives are based on economic aspects or contract terms and range between 1 and 50 years. With the exception of goodwill, there are no intangible assets with useful lives classified as indefinite. Where MVV has to purchase CO_2 emission rights with holding periods longer than one year, these are recognised as intangible assets at cost. Rights allocated free of charge are recognised at Euro 0. As the CO_2 emission rights constitute non-amortisable assets, they are not subject to amortisation, but nevertheless reduced by any impairment losses arising pursuant to IAS 36.

Property, plant and equipment

Property, plant and equipment is stated at cost, less proportionate depreciation to account for the decline in value of the assets. In the case of internally generated property, plant and equipment, the costs of manufacture are based on allocable direct costs and a commensurate share of directly allocable overhead expenses. Borrowing costs are recognised as a component of costs when they can be directly attributed to the acquisition or manufacture of a qualifying asset. Such costs are recognised as soon as the asset in question requires a significant period of time to be prepared for its intended use or sale. During the commissioning phase, the net balance of income and expenses incurred is capitalised. Income in excess of the expenses incurred is recognised not as a reduction to cost, but through profit or loss.

The cost of assets is reduced by public subsidies received (investment grants). Public subsidies are recognised when it is sufficiently certain that these will be granted and the relevant conditions have been met. Investment grants relate exclusively to asset-based subsidies. These grants are reported separately from investments in the non-current asset schedule.

Items of property, plant and equipment are subject to straight-line depreciation consistent with their pattern of consumption. Depreciation is undertaken pro rata temporis in the year of addition. Scheduled depreciation is based on the following useful lives:

Useful lives in years	
Buildings	3 – 100
Technical equipment and machinery	2 – 50
Transmission grids	2 – 69
Plant and operating equipment	1 – 50

MVV leases specific items of property, plant and equipment (leased items). Lease contracts for items of property, plant and equipment in which MVV bears the main risks and rewards resulting from ownership of the leased item are classified as finance leases. Assets in connection with finance leases are capitalised at the beginning of the lease term at the lower of the fair value of the leased item and the present value of the minimum leasing payments, with equivalent lease liabilities being recognised under non-current and current liabilities.

Each leasing instalment is divided into its respective interest and principal components in such a way that the lease liabilities charge consistent interest. The interest component of the leasing instalment is expensed in the income statement. Items of property, plant and equipment governed by finance leases are depreciated over the shorter of their economic useful life or the term of the lease.

Investment properties

Investment properties are measured at amortised cost. In the context of impairment tests, their fair values are regularly determined by way of independent surveys. As these do not constitute observable market prices, measurement is allocable to Level 3 of the IFRS 13 measurement hierarchy.

Impairment of intangible assets, property, plant and equipment and investment properties

The carrying amounts of intangible assets, property, plant and equipment and investment properties are assessed for indications of impairment at each balance sheet date. An impairment test pursuant to IAS 36 is performed if there are any such indications. Goodwill and intangible assets with indefinite useful lives are not subject to scheduled amortisation, but are rather tested for impairment at least once a year. This also applies when changes in circumstances or indications of impairment arise.

Where the carrying amount of an asset is higher than its recoverable amount (the higher of its fair value less disposal costs or its value in use), the carrying amount is written down to the recoverable amount. The fair value represents the best estimate of the recoverable amount. The recoverable amounts must be determined for each individual asset, unless the asset does not generate any largely independent cash flows. In this case, the amount should be stated for which an independent third party would acquire the cash generating unit at the balance sheet date. The fair values/values in use of the cash generating units are determined based on the cash flow forecasts approved by the management and supervisory bodies of MVV Energie AG. Such cash flow forecasts are based on experience and results in previous financial years, as well as on expectations as to future market developments. They refer to the expected development in key macroeconomic figures derived from economic and financial studies.

Key assumptions used in the forecasts concern the development in the price of crude oil, natural gas and coal on the global markets, the price of electricity and gas on wholesale and end consumer markets and the development in market shares and the relevant regulatory framework.

The cash flow forecasts cover a detailed budgeting period of three years. Figures for subsequent financial years are based on an extrapolation of the results of the final financial year in the detailed budget period. Reference is made to current estimates of growth rates. These growth rates correspond to the average long-term growth rates in the markets in which the companies operate and are consistent with external sources of information concerning market expectations. Impairment losses are recognised when the recoverable amount of the asset falls short of its carrying amount. Where the recoverable amount exceeds the carrying amount in subsequent periods, the assets are written up to a maximum of amortised cost.

Goodwill is not written up. Should the carrying amount of a cash generating unit to which goodwill has been allocated exceed its recoverable amount, then the goodwill thereby allocated is written down first. Any further write-down requirement is then accounted for by means of a prorated reduction in the carrying amounts of the other assets at the cash generating unit. However, assets are not written down below their respective present values.

Receivables and other assets

Receivables and other assets include trade receivables, other receivables and assets and tax receivables. Apart from derivative financial instruments, these are measured at amortised cost. Initial measurement is carried out as of the performance date. Any write-downs required are based on the expected level of default risk. The values of receivables are generally corrected by means of a write-down account.

Trade receivables include accruals/deferrals to cover energy and water sales not yet read or invoiced as of the balance sheet date. Part-payments made in the context of annual consumption invoicing are deducted from the receivables. Default risks existing at the balance sheet date are covered by adequate write-downs. Receivables are derecognised immediately upon becoming uncollectible. The carrying amounts reported are basically equivalent to their respective fair values.

CO_2 emission rights with remaining terms of less than a year and requiring purchase or exchange by MVV are recognised at cost as other assets, while rights allocated free of charge have been recognised at Euro 0.

Inventories

Inventories consist of raw materials and supplies, unfinished and finished products and services and project rights, advance payments made for such and commodity trading assets. They are measured at the lower of cost or net sale value. The commodity trading assets are measured at fair value less disposal costs. Cost of acquisition or manufacture for raw materials is calculated using the average cost method. The manufacturing costs of unfinished and finished products and services and project rights comprise production-related full costs. These consist of allocable direct costs and a commensurate share of the material and production overheads required based on normal capacity utilisation rates. Risks resulting from any impairment in utility are accounted for with suitable deductions.

Cash and cash equivalents

Cash and cash equivalents consist of cash on hand and credit balances at banks with original terms of less than three months.

Non-current assets and liabilities held for sale

Non-current assets which can be sold in their current state and whose sale is highly probable are recognised as non-current assets held for sale. Liabilities due to be dispensed with in a transaction together with assets are reported separately as liabilities held for sale.

Unless the relevant specific standards are applicable, non-current assets held for sale are no longer subject to scheduled depreciation and amortisation. Unless stipulated in another standard, they are measured at fair value less expected disposal costs, where this is lower than the carrying amount. Gains or losses resulting from the measurement of individual non-current assets held for sale or disposal groups are recognised under earnings from continuing operations until their ultimate disposal. Any losses resulting from the measurement of discontinued operations at fair value less disposal costs are recognised as earnings from discontinued operations.

Deferred taxes

Deferred taxes are stated for temporary differences between the tax balance sheets and IFRS balance sheets at individual companies arising from the measurement of assets and liabilities for tax purposes on the one hand and for external IFRS accounting on the other, as well as from consolidation processes impacting on earnings. Moreover, deferred tax assets are also recognised for tax reduction claims resulting from the expected utilisation in subsequent years of existing losses carried forward. Such claims are capitalised if the utilisation of these losses carried forward is certain within a five-year forecast horizon based on existing business plans. Deferred taxes are calculated based on the tax rates valid or expected at the individual organisational units upon realisation. Account is taken of the tax regulations valid or already adopted at the balance sheet date.

Provisions

Provisions are recognised for all legal or constructive obligations to third parties at the balance sheet date as a result of past events, when it is probable that a future outflow of resources will be required to settle the obligations and the amounts can be reliably estimated. Provisions are recognised at their expected performance amounts and are not netted with refund claims. Provisions based on a large number of events of the same nature are recognised at the expected value of the potential results.

All non-current provisions are recognised at their expected performance amounts as of the balance sheet date. Non-current provisions are discounted.

Financial instruments

Primary financial instruments: Loans, securities, trade receivables, other cash receivables and cash and cash equivalents are measured at fair value upon addition, taking due account of transaction costs.

Upon subsequent measurement, financial assets are recognised either at fair value or at amortised cost. The subsequent measurement of financial assets in the “financial assets available for sale” category is generally based on their fair values.

Pursuant to IAS 39, changes in fair values are recognised directly in equity, taking due account of deferred taxes. Upon disposal, these changes are recognised through profit or loss. The asset is written down through profit or loss if there are any objective indications of impairment. Permanent recoveries in value are recognised with write-ups to amortised cost. Assets whose fair values cannot be reliably estimated are measured at amortised cost. The subsequent measurement of financial assets in the “loans and receivables” and “financial instruments held to maturity” categories is based on amortised cost, with application of the effective interest method where appropriate. The amortised cost of a financial asset is equivalent to the fair value of the consideration provided, adjusted to account for impairments, interest payments and principal repayments. Impairment losses are recognised for any identifiable risks, especially those resulting from expected payment defaults or reductions in expected cash flows. Impairment losses are charged directly to period earnings.

Purchases and sales of financial assets executed on customary market terms are recognised on the date of the transaction, i.e. on the date on which the company assumed the liability to purchase or sell the assets. Purchases and sales executed on customary market terms require transfer of the assets within a period determined by market regulations or conventions.

The fair values of financial instruments traded on organised markets are determined by reference to the bid prices listed on the stock market on the balance sheet date. The fair values of financial instruments for which there is no active market are estimated with due application of valuation techniques. These methods are based on recent transactions performed on customary market terms, on the current value of other instruments which are essentially the same instruments, on analysis of discounted cash flows or on option price models. Pursuant to IFRS 13, due account is also taken of market and credit risks when determining fair values.

Financial assets are retired when the contractual rights to cash flows from the asset expire or when the financial asset is transferred, provided that all principal risks and rewards relating to ownership of the asset are also transferred and the power to dispose over the asset has been ceded.

Financial debt, trade payables and other financial liabilities are measured at amortised cost, with application of the effective interest method where appropriate. In the case of financial debt, cost is equivalent to the amount disbursed. In the case of trade payables and other liabilities, cost is equivalent to the fair value of the consideration received.

Financial liabilities are retired when the underlying obligation has been met, terminated or has expired.

No use is made of the fair value option.

Derivative financial instruments: Derivative financial instruments particularly include interest rate and currency derivatives, as well as commodity derivatives, in this case mainly for electricity, gas, coal and CO_2. Derivative financial instruments are measured at fair value both upon initial recognition and in subsequent periods and are reported under other assets or other liabilities. The amounts recognised are derived from market values or using recognised valuation methods (present value method or option pricing models based on current market parameters). In particular, certain long-term energy contracts and interest rate derivatives are, where no market prices are available, measured using recognised valuation methods based on internal fundamentals. Changes in the value of interest rate and currency derivatives relating to operations are recognised as income or expenses under earnings from operations or in the financial result. Changes in the value of all other derivative financial instruments are recognised as income or expenses under other operating income and expenses. Derivatives deployed in cash flow hedges have to be treated separately. Where they additionally meet IAS 39 hedge accounting requirements, changes in the fair value of the effective portion of the hedging instrument are recognised directly in equity under fair value measurement of financial instruments. When the underlying transaction is recognised in the income statement, the hedging instrument is also recognised through profit or loss and thus compensates for the impact of the underlying transaction. Alongside cash flow hedge accounting, risks may also be hedged with fair value hedges. Here, changes in the fair values of derivatives serving to hedge a fair value and eligible to be qualified as fair value hedges are recognised through profit or loss at the same time as the risk thereby hedged. For fair value hedges, changes in the value of primary financial instruments arising due to exchange rate movements may additionally be hedged by the currency-related changes in other primary financial instruments or currency derivatives.

Pending transactions intended to secure market prices in the field of energy trading fall within the scope of IAS 39 and are recognised as derivative financial instruments, while the hedged items (sales contracts) are generally not covered by IAS 39. The accounting treatment under IAS 39 relates in particular to commodities futures transactions. To limit volatility, application is made of the own use exemption or of cash flow hedge accounting, particularly in the electricity and gas businesses.

For closed foreign currency positions, fair value hedges are designated and recognised in accordance with fair value hedge accounting requirements.

Interest rate risks are limited by drawing in particular on interest swaps. These instruments secure the cash flow from financial liabilities with floating interest rates by means of cash flow hedges.

Discretionary decisions in the application of accounting policies

Discretionary decisions have to be made when applying the accounting policies. This has not had any material influence on the values of the assets and liabilities reported in the financial statements.

Measurement uncertainties

The preparation of consolidated financial statements in accordance with IFRS requires assets and liabilities to be measured. Here, it is also necessary to make assumptions and estimates which could impact on the values stated for the assets and liabilities, income and expenses thereby recognised and the disclosure of contingent liabilities.

The following section provides information on the most important forward-looking assumptions and other major sources of uncertainty involved in estimates made at the balance sheet date, as a result of which there is a risk that a material adjustment will be required in the carrying amounts of assets and liabilities in the next financial year.

The fair values of assets and liabilities and the useful lives of assets have been determined on the basis of management assessment. The same applies to the calculation of any impairments of assets.

The impairment test performed on goodwill and assets requires an estimation of the recoverable amount of the cash generating unit to which the goodwill or asset is allocated. The recoverable amount is primarily calculated on the basis of the value in use of the cash generating unit. In special individual cases, it is calculated based on the fair value of the cash generating unit. For the impairment test, reference is made to the higher of the two values. To estimate the value in use, MVV has to estimate the cash flow surpluses expected to be generated by the cash generating unit in future and furthermore to select an appropriate discount rate to calculate the present value of the cash flow. All assumptions and estimates are based on circumstances and assessments at the balance sheet date or at the date during the financial year on which event-specific impairment becomes necessary. Any deviation in underlying conditions could result in differences arising between such estimates and actual values. Appropriate amendments are made in such cases to the assumptions and if need be to the carrying amount of the goodwill and assets.

Moreover, assumptions also have to be made when calculating actual and deferred taxes. In particular, the possibility of generating corresponding future taxable income plays a key role in the assessment as to whether it will be possible to use deferred taxes.

The uncertainties arising when measuring the provisions to be recognised are countered with the best possible estimates. Among other methods, the calculations have also been based on probability considerations.

The measurement of sales and cost of materials is dependent on estimates to the extent that consumption deferrals have been undertaken as of the balance sheet date for trade receivables and payables already incurred but not yet invoiced.

Compensation liabilities for partnerships are recognised at prorated fair value. This is determined by compiling a company valuation, taking due account of current budgets and the yield curve.

When assessing measurement uncertainties, reference is always made to the best information available concerning circumstances at the balance sheet date. Actual amounts may differ from estimates. The carrying amounts recognised in the financial statements which are subject to these uncertainties have been stated in the balance sheet and the accompanying information provided in the notes.

The amendments made to estimates in the 2018 financial year due to IAS 8 did not lead to any notable adjustments in the relevant income, expenses, assets or liabilities.

NOTES TO INCOME STATEMENT

1. Sales after electricity and natural gas taxes

Sales include all revenues generated by the typical business activities of the Group. They are recognised upon the transfer of significant risks and rewards to customers or upon performance of the respective services, provided that receipt of the payment can reliably be expected. The composition of sales broken down into individual segments can be found in Segment Reporting in Note 36.

MVV's main products are electricity, heating energy, gas, water and waste incineration and disposal. Furthermore, the Group generates substantial sales from services and from solar and wind power project development services.

External sales by products are structured as follows:

Sales by product group

Euro 000s	**FY 2018**	FY 2017
Electricity	2,094,628	2,147,090
Heating energy	359,409	371,210
Gas	547,945	647,841
Water	86,988	87,405
Other sales	813,790	755,970
	3,902,760	**4,009,516**

Other sales mainly include sales from project development services and customer-specific construction contracts.

In group currency, sales at our foreign subsidiaries amounted to Euro 206,095 thousand (previous year: Euro 230,122 thousand). The reduction in this share of sales is chiefly due to the lower number of projects realised abroad.

Customer-specific construction contracts are recognised at percentage of completion. This means that prorated sales and the cost of sales incurred are recognised at the percentage of completion, based on the contractual arrangements with the customers, reached by the balance sheet date and as soon as the results of the construction contract can be reliably estimated.

Percentage of completion is calculated on the basis of the project costs incurred by the balance sheet date as a proportion of the total costs of the project. In the balance sheet, the sales posted in line with percentage of completion are reduced by advance payments received and recognised under trade receivables. As soon as the result of a construction contract cannot be reliably estimated, the revenues from the contract are only recognised at the level of contract costs incurred and probably collectible. Losses on contracts are immediately expensed in full as soon as they are expected.

Mainly due to the lower number of projects realised, sales from customer-specific construction contracts fell to Euro 56,629 thousand (previous year: Euro 110,562 thousand).

2. Changes in inventories

Changes in inventories mainly relate to unfinished projects and project rights.

3. Own work capitalised

Own work capitalised relates above all to the construction and expansion of distribution grids.

4. Other operating income

Other operating income

Euro 000s	**FY 2018**	FY 2017
Income from IAS 39 derivatives	264,399	205,514
Reversal of provisions	42,851	45,490
Income from sales of assets held for sale	30,802	–
Reversal of write-downs and receipts of receivables already retired	13,058	10,149
Exchange rate gains	5,428	4,035
Reimbursements of damages claims	5,400	7,692
Agency agreements and personnel supplies	4,836	4,952
Benefits to employees	4,185	3,815
Rental income	3,667	3,864
Income from emission rights	2,996	58
Credits and refunds	2,756	3,946
Income from sales of assets and write-ups	1,734	10,398
Miscellaneous	36,146	20,685
	418,258	**320,598**

Other operating income particularly relates to positive measurement items for energy trading transactions requiring measurement under IAS 39. Measurement items relating to energy transactions are reported on a gross basis. This valuation-dependent income is offset by corresponding expenses.

The income from sales of assets held for sale resulted from the sale of the fibre optic network at MVV Energie AG and of assets relating to multi-utility contracts at MVV ImmoSolutions GmbH.

5. Cost of materials

Cost of materials

Euro 000s	FY 2018	FY 2017
Raw materials, supplies and purchased goods	2,115,723	2,270,860
Procurement of wind turbines and solar power systems	285,650	253,461
Purchased services	556,388	554,422
	2,957,761	**3,078,743**

Expenses for purchased services mainly relate to expenses for grid utilisation fees, concession duties, maintenance and repair expenses, disposal costs for residual waste and other third-party services.

6. Employee benefit expenses

Employee benefit expenses

Euro 000s	FY 2018	FY 2017
Wages and salaries	345,592	341,935
Social security expenses and welfare expenses	57,838	57,307
Pension expenses	19,314	19,436
	422,744	**418,678**

MVV had an annual average of 6,006 employees (previous year: 6,057). This total includes 10 executives (previous year: 10), 5,680 employees (previous year: 5,727), 281 trainees (previous year: 292) and 35 interns/students (previous year: 38).

The executives are members of the management in key functions, i.e. authorised representatives and division heads at MVV Energie AG.

7. Other operating expenses

Other operating expenses

Euro 000s	FY 2018	FY 2017
Expenses for IAS 39 derivatives	232,808	166,614
Expenses for advisory services	32,634	24,886
Contributions, fees and duties	31,990	33,685
Rental, leasehold and leasing expenses	22,759	21,523
Maintenance, repair and IT service expenses	21,844	19,083
Additions to write-downs and receivables defaults	14,511	21,217
Operating taxes (including energy taxes)	12,819	11,535
Employee benefit and welfare expenses	12,312	11,618
Public relations expenses	11,411	12,460
Personnel supplies	10,008	10,620
Facility management	7,344	7,048
Exchange rate losses	7,169	4,320
Service contracts	5,397	6,012
Losses incurred on sales of assets	4,025	3,930
Hospitality expenses	2,186	1,952
Office materials and specialist literature	1,744	2,261
Expenses for emission rights	203	6,099
Miscellaneous	28,159	43,278
	459,323	**408,141**

Other operating expenses include negative measurement items for energy trading transactions requiring measurement under IAS 39. Measurement items relating to energy trading transactions are reported on a gross basis. These valuation-dependent expenses are countered by other operating income offsetting this item.

8. Income from companies recognised at equity and other income from shareholdings

Interests in associates and joint ventures are recognised initially at cost and subsequently at the amortised value of the prorated net assets. The carrying amounts are increased or reduced annually to account for prorated earnings, dividends paid and other changes in equity. Any goodwill thereby recognised is included in the value of the shareholding, rather than being reported separately. Impairment losses are recognised on the at-equity carrying amount when the recoverable amount falls short of the carrying amount. When the reasons for impairment losses previously recognised on the at-equity carrying amount no longer apply, the carrying amount is correspondingly written up through profit or loss. This does not apply to any goodwill previously written down.

Income from companies recognised at equity and other income from shareholdings

Euro 000s	**FY 2018**	FY 2017
Income from companies recognised at equity	−110	11,942
Income from other shareholdings	1,144	1,873
Expenses/income from sales of financial assets	−11	−207
	1,023	**13,608**

The changes in the income from companies recognised at equity were mainly due to the amended inclusion of Beegy GmbH and the subsequent measurement of those companies on which MVV exercises significant influence.

9. Depreciation and amortisation

Depreciation and amortisation

Euro 000s	**FY 2018**	FY 2017
Depreciation	180,680	182,748
of which impairment losses	–	2,565

10. Financing income

Financing income

Euro 000s	**FY 2018**	FY 2017
Income from currency translation in connection with financing activities	3,547	4,591
Interest income from finance leases	3,240	3,238
Interest income from current account, overnight and fixed-term deposits	774	1,122
Income from IAS 39 measurement	625	1,008
Other interest and similar income	4,391	4,665
	12,577	**14,624**

11. Financing expenses

Financing expenses

Euro 000s	**FY 2018**	FY 2017
Interest expenses from current account, non-current and current loans	35,627	40,239
Expenses from currency translation in connection with financing activities	3,654	6,380
Compounding of provisions	2,826	2,113
Expenses for IAS 39 measurement	1,705	2,521
Other interest and similar expenses	15,857	17,262
	59,669	**68,515**

The other interest and similar expenses were reduced by Euro 3,127 thousand due to the capitalisation of borrowing interest (previous year: Euro 1,489 thousand). The assumed financing cost rate ranged from 1.4 % to 1.9 % in the financial year under report and amounted to 1.4 % in the previous year.

12. Taxes on income

Taxes on income

Euro 000s	FY 2018	FY 2017
Actual taxes	72,163	54,168
Deferred taxes	5,126	18,967
	77,289	**73,135**

Current tax expenses include trade tax and corporate income tax, including the solidarity surcharge, as well as foreign taxes on income.

The calculation of deferred taxes in Germany is based on tax rates applicable at individual companies. This tax rate results from the unchanged corporate income tax rate of 15 %, the unchanged solidarity surcharge of 5.5 % and the respectively applicable trade tax rate (currently 12 % to 16 %). The equivalent calculations for foreign companies are based on the respective national tax rates. Where the requirements of IAS 12 are met, deferred tax assets and liabilities are stated on a net basis for each company or fiscal unit.

The deferred tax expenses result from tax expenses of Euro 6,673 thousand (previous year: Euro 10,048 thousand) that are attributable to the change in the write-down on losses carried forward and to the recognition through profit or loss of losses carried forward, as well as from deferred tax income of Euro 1,547 thousand (previous year: expenses of Euro 8,919 thousand) attributable to the arising and/or reversal of temporary differences.

Actual tax expenses were reduced by Euro 1,348 thousand by using tax losses not previously recognised (previous year: Euro 3,172 thousand).

The following table presents the reconciliation of expected tax expenses with those actually reported. The tax rate applicable for the tax reconciliation amounts to 30.3 % (previous year: 30.3 %) and comprises the corporate income tax rate, the solidarity surcharge and an average trade tax rate of 14.5 % (previous year: 14.5 %).

Reconciliation of income tax expenses

Euro 000s	FY 2018	FY 2017
Earnings before taxes (EBT)	**209,702**	**205,620**
Expected tax expenses based on tax rate of 30.3 % (previous year: 30.3 %)	**63,540**	**62,303**
Deviations resulting from trade tax assessment base	1,851	1,759
Deviations from expected tax rate	–3,076	1,985
Utilisation of losses carried forward, change in write-downs for losses and losses for which no deferred taxes are recognised	6,590	10,066
Non-deductible expenses	3,300	5,336
Tax-exempt income	–6,939	–15,267
Income from shareholdings recognised at equity	4,725	991
Permanent differences	–7,220	3,635
Taxes for previous years	5,510	1,446
Goodwill impairments	10,212	
Miscellaneous	–1,204	881
Effective tax expenses	**77,289**	**73,135**
Effective tax rate (%)	**36.9**	**35.6**

13. Share of earnings attributable to MVV Energie AG shareholders and earnings per share

Share of earnings attributable to MVV Energie AG shareholders and earnings per share

	FY 2018	FY 2017
Share of earnings attributable to MVV Energie AG shareholders (Euro 000s)	130,002	121,340
Number of shares (weighted average in 000s)	65,907	65,907
Earnings per share (Euro)	1.97	1.84
Dividend per share (Euro)	0.90	0.90

The number of individual registered shares in MVV Energie AG amounts to 65,906,796.

The dividend for the 2018 financial year is consistent with the proposal made by the Executive and Supervisory Boards and requires approval by the Annual General Meeting on 8 March 2019. The proposal provides for the distribution of a dividend of Euro 59,316 thousand. The proposals for the amount of dividend and appropriation of earnings for the 2017 financial year were approved by the Annual General Meeting held on 9 March 2018. Accordingly, a dividend of Euro 59,316 thousand was distributed.

NOTES TO BALANCE SHEET

14. Intangible assets

Intangible assets includes concessions, industrial property rights, customer lists and similar rights and values, goodwill and advance payments. Concessions, industrial property rights and similar rights and values chiefly consist of software, rights eligible for capitalisation and customer lists. Intangible assets of Euro 0 thousand are subject to restrictions on disposal (previous year: Euro 5,631 thousand).

MVV Energie AG only performs a low volume of research and development. The amount of research and development expenses qualifying under IFRS came to Euro 714 thousand in the 2018 financial year (previous year: Euro 401 thousand). The development expenses capitalised under IAS 38 came to Euro 228 thousand in the year under report (previous year: Euro 730 thousand). These relate to the development of a global project database for solar and wind power projects at the Juwi subgroup.

In connection with the assumption of a disposal contract, which accounts for the major share of additions to intangible assets in the current financial year, the company acquired an energy from waste plant in Dundee/Scotland.

The impairment tests performed in the 2018 financial year were based on determining the recoverable amount/value in use. This involves discounting expected cash flows at the shareholdings with discount rates (weighted costs of capital) of 5.9 % to 12.8 % before taxes. The discount rates are determined on the basis of available market data. The budget period for the underlying cash flows generally amounts to three years. Growth rates of up to 0.5 % were assumed for perpetuity in the impairment tests performed in the 2018 financial year.

Within a sensitivity analysis, the impairments resulting from any increase/reduction in the capitalisation discount rate by 0.5% were calculated. Apart from impairment losses recognised at the Juwi and MVV Enamic subgroups, this did not result in any notable changes in the ongoing values.

The carrying amounts stated for goodwill are structured as follows:

Goodwill carrying amounts

Euro 000s	**30 Sep 2018**	30 Sep 2017
Juwi subgroup	74,970	98,970
Energieversorgung Offenbach subgroup	75,894	75,894
MVV Enamic subgroup	27,417	35,416
Windwärts subgroup	6,073	6,073
MVV Energie CZ subgroup	6,280	6,211
MVV Umwelt subgroup	5,583	5,583
Other subgroups	552	2,259
	196,769	**230,406**

For the purposes of performing impairment tests, goodwill was allocated to cash generating units. These correspond to the legal subgroups.

Goodwill amortisation chiefly refers to the write-down as of 31 March 2018 of goodwill arising upon the initial consolidation of the Juwi subgroup as well as to the write-down of goodwill at the MVV Enamic subgroup.

Current market changes both in Germany and abroad necessitated a strategic realignment at the Juwi subgroup and, associated with this, a new budget which was adopted in February 2018. These factors were the triggering events for impairment tests. As the fair value less costs to sell exceeds the value in use, this was taken as the recoverable amount in an impairment test and compared with the carrying amount of this unit. One component of the carrying amount is the goodwill of Euro 99 million allocated to the New Energies reporting segment. As no binding sales transactions or market prices are available for the unit, the fair value was determined using discounted cash flow methods (fair value Level 3). The measurements were based on medium-term budgets adopted in February 2018. A discount rate of 10.1 % before taxes was used for the measurement date as of 31 March 2018.

The goodwill write-down at the MVV Enamic subgroup was chiefly due to reduced earnings prospects following the sale of the GSW contract portfolio at this cash generating unit. Within the impairment test, the value in use was taken as the recoverable amount and compared with the carrying amount of the MVV Enamic subgroup, which is allocated to the Customer Solutions reporting segment. The future value in use was determined using a discount rate of 6.4 % before taxes.

Intangible assets

Euro 000s	Concessions, industrial property rights and similar rights and values	Goodwill	Advance payments	**Total**
Gross value at 1 October 2016	323,536	242,847	7,955	574,338
Change in scope of consolidation	2,193	4,919	128	7,240
Currency adjustments	55	363	–	418
Additions	5,733	–	2,869	8,602
Subsidy payments received	−78	–	–	−78
Disposals	−1,168	–	–	−1,168
Reclassifications	8,364	–	−7,437	927
Reclassifications pursuant to IFRS 5	−4,318	−4,892	–	−9,210
Gross value at 30 September 2017	**334,317**	**243,237**	**3,515**	**581,069**
Amortisation at 1 October 2016	−210,419	−12,738	–	−223,157
Currency adjustments	−68	−93	–	−161
Scheduled amortisation	−15,237	–	–	−15,237
Impairment losses	−771	–	–	−771
Disposals	889	–	–	889
Reclassifications pursuant to IFRS 5	2,432	–	–	2,432
Amortisation at 30 September 2017	**−223,174**	**−12,831**	**–**	**−236,005**
Net value at 30 September 2017	**111,143**	**230,406**	**3,515**	**345,064**
Gross value at 1 October 2017	334,317	243,237	3,515	581,069
Currency adjustments	14	92	–	106
Additions	21,945	–	4,298	26,243
Disposals	−10,267	–	−34	−10,301
Reclassifications	1,640	–	−1,455	185
Gross value at 30 September 2018	**347,649**	**243,329**	**6,324**	**597,302**
Amortisation at 1 October 2017	−223,174	−12,831	–	−236,005
Currency adjustments	−15	−23	–	−38
Scheduled amortisation	−14,882	–	–	−14,882
Impairment losses	–	−33,706	–	−33,706
Disposals	3,252	–	–	3,252
Amortisation at 30 September 2018	**−234,819**	**−46,560**	**–**	**−281,379**
Net value at 30 September 2018	**112,830**	**196,769**	**6,324**	**315,923**

15. Property, plant and equipment

Property, plant and equipment

Euro 000s	Land, leasehold rights and buildings, including buildings on third-party land	Technical equipment and machinery	Other assets, plant and operating equipment	Advance payments and construction in progress	**Total**
Gross value at 1 October 2016	914,923	4,445,541	212,066	159,978	5,732,508
Change in scope of consolidation	–	12	255	–	267
Currency adjustments	1,839	798	−9	113	2,741
Additions	2,201	44,779	6,832	114,858	168,670
Subsidy payments received	−77	−4,778	−102	–	−4,957
Disposals	−8,536	−61,927	−9,534	−633	−80,630
Reclassifications	4,105	77,855	1,024	−83,911	−927
Reclassifications pursuant to IFRS 5	–	−2	−29,467	–	−29,469
Gross value at 30 September 2017	**914,455**	**4,502,278**	**181,065**	**190,405**	**5,788,203**
Depreciation at 1 October 2016	−404,304	−2,634,815	−154,081	–	−3,193,200
Currency adjustments	−1,983	−4,043	−35	–	−6,061
Scheduled depreciation	−23,103	−130,322	−11,521	–	−164,946
Write-ups	–	–	7,136	–	7,136
Impairment losses	–	−1,794	–	–	−1,794
Disposals	5,035	60,129	9,117	–	74,281
Reclassifications	–	28	−28	–	–
Reclassifications pursuant to IFRS 5	–	2	15,748	–	15,750
Depreciation at 30 September 2017	**−424,355**	**−2,710,815**	**−133,664**	**–**	**−3,268,834**
Net value at 30 September 2017	**490,100**	**1,791,463**	**47,401**	**190,405**	**2,519,369**
Gross value at 1 October 2017	914,455	4,502,278	181,065	190,405	5,788,203
Change in scope of consolidation	–	500	154	–	654
Currency adjustments	483	236	−1	−46	672
Additions	10,528	47,829	7,714	182,691	248,762
Subsidy payments received	−10	−5,854	−81	−316	−6,261
Disposals	−1,423	−24,019	−10,310	−3,217	−38,969
Reclassifications	6,721	46,265	1,225	−54,396	−185
Gross value at 30 September 2018	**930,754**	**4,567,235**	**179,766**	**315,121**	**5,992,876**
Depreciation at 1 October 2017	−424,355	−2,710,815	−133,664	–	−3,268,834
Currency adjustments	−479	−944	−10	–	−1,433
Scheduled depreciation	−24,455	−131,105	−10,238	–	−165,798
Disposals	1,355	19,926	10,155	–	31,436
Reclassifications	245	−168	2	−79	–
Depreciation at 30 September 2018	**−447,689**	**−2,823,106**	**−133,755**	**−79**	**−3,404,629**
Net value at 30 September 2018	**483,065**	**1,744,129**	**46,011**	**315,042**	**2,588,247**

Property, plant and equipment up to an equivalent value of Euro 46 million (previous year: Euro 64 million) has been provided as security for financial debt. This involves land, buildings, technical equipment and machinery. Property, plant and equipment subject to restrictions on disposal amounts to Euro 119 million (previous year: Euro 128 million).

The reported subsidy payments received involve government grants received in the 2018 financial year chiefly in connection with urban planning measures for the distribution grid. There are no conditions that have not been met or other performance uncertainties in connection with these subsidy payments.

Apart from the construction of a gas-powered CHP plant in Kiel and an energy from waste plant in the UK, the largest additions to advance payments and construction in progress in the 2018 financial year also involved the connection of a CHP plant to the district heating grid in Mannheim.

16. Investment properties

Investment properties involve a piece of land let out in the USA. Rental income amounted to Euro 32 thousand in the financial year under report (previous year: Euro 34 thousand). Direct operating expenses came to Euro 0 thousand (previous year: Euro 0 thousand). The fair value of investment properties is at least equivalent to the carrying amount.

Investment properties

Euro 000s	**FY 2018**	FY 2017
Gross value at 1 October	2,404	2,542
Currency adjustments	47	−138
Gross value at 30 September	**2,451**	**2,404**
Depreciation at 1 October	–	–
Depreciation at 30 September	–	–
Net value at 30 September	**2,451**	**2,404**

17. Joint ventures

MVV operates joint ventures with partners. In view of their size and influence on the Group, the following companies have been identified as material joint ventures:

Together with its shareholders, Uniper Kraftwerke GmbH and Stadtwerke Kiel AG, which is a subsidiary of MVV Energie AG, the company Gemeinschaftskraftwerk Kiel GmbH operates a hard coal-fired power plant in Kiel. Stadtwerke Kiel AG owns a 50 % share of the capital. All significant decisions have to be reached jointly by the shareholders.

Stadtwerke Ingolstadt is responsible for the energy supply in the Ingolstadt region. MVV Energie AG owns a 48.4 % share of the capital in Stadtwerke Ingolstadt Beteiligungen GmbH, which as the financial holding company pools several subsidiaries. All significant decisions have to be reached jointly by the shareholders.

The assets, liabilities, equity and sales, annual net income and other income and expenses at material joint ventures are presented in the following tables:

Statement of comprehensive income for material joint ventures

	Gemeinschaftskraftwerk Kiel GmbH, Kiel		Stadtwerke Ingolstadt Beteiligungen GmbH, Ingolstadt	
Euro 000s	**Financial year**	Previous year	**Financial year**	Previous year
Sales excluding energy taxes	83,649	78,060	186,060	197,794
Scheduled depreciation and amortisation	−1,346	−2,344	−13,851	−13,402
Interest income	2	10	99	106
Interest expenses	−4,936	−4,840	−1,112	−1,127
Income tax expenses/income	−1,850	2,545	−7,475	−8,441
Annual net income	2,637	7,639	17,854	19,328
Other income and expenses	–	–	−5	95
Total comprehensive income for period	**2,637**	**7,639**	**17,849**	**19,423**
Dividends received from material joint ventures	767	767	9,025	9,135

Further key financial figures for material joint ventures

	Gemeinschaftskraftwerk Kiel GmbH, Kiel		Stadtwerke Ingolstadt Beteiligungen GmbH, Ingolstadt	
Euro 000s	**Financial year**	Previous year	**Financial year**	Previous year
Assets	**121,754**	**107,453**	**273,593**	**275,854**
Non-current assets	6,804	8,136	231,451	223,500
Current assets	114,950	99,317	42,142	52,354
of which cash and cash equivalents	19,269	11,008	1,325	883
Equity and debt	**121,754**	**107,453**	**273,593**	**275,903**
Equity	24,081	22,978	65,787	66,584
Non-current provisions	57,794	56,301	5,232	5,053
Non-current debt and other liability items	–	–	99,462	121,474
of which non-current financial debt	–	–	26,366	43,168
Current provisions	30,414	25,981	301	58
Current debt and other liability items	9,465	2,193	102,811	82,734
of which current financial debt	–	–	72,128	58,928

Reconciliation of summarised key financial figures with carrying amounts of material joint ventures

	Gemeinschaftskraftwerk Kiel GmbH, Kiel		Stadtwerke Ingolstadt Beteiligungen GmbH, Ingolstadt	
Euro 000s	**Financial year**	Previous year	**Financial year**	Previous year
Net assets at 1 October	22,978	16,873	66,584	66,036
Profit/loss for period	2,637	7,639	17,854	19,328
Distribution	−1,534	−1,534	−18,646	−18,875
Other income and expenses	–	–	−5	95
Net assets at 30 September	**24,081**	**22,978**	**65,787**	**66,584**
Group share of net assets	12,041	11,489	31,841	32,227
Other items	322	322	−154	−154
Goodwill	–	–	53,759	53,759
Carrying amount of interest in joint ventures	**12,363**	**11,811**	**85,446**	**85,832**

The aggregate profit/loss, total comprehensive income and carrying amounts of non-material joint ventures are presented in the following table:

Summarised key financial figures for non-material joint ventures

Euro 000s	Financial year	Previous year
Profit/loss for period	9,806	−4,657
Total comprehensive income for period	9,806	−4,657
Carrying amount of interest in non-material joint ventures	**44,897**	**34,301**

18. Associates

Given its size and its influence on the Group, Grosskraftwerk Mannheim AG has been identified as a material associate.

Grosskraftwerk Mannheim AG operates what is one of Europe's most efficient hard coal-fired power plants in Mannheim. Overall, MVV owns a 28 % share of the capital in this company. Grosskraftwerk Mannheim AG is a power plant jointly owned by the following shareholders: RWE Generation SE, Essen, EnBW Energie Baden-Württemberg AG, Karlsruhe, and MVV RHE GmbH, Mannheim. Due to its positions on the supervisory board and its votes at the annual general meeting, MVV RHE GmbH exercises significant influence on this company.

The assets, liabilities, equity, sales, annual net income and other income and expenses of Grosskraftwerk Mannheim AG are as follows:

Statement of comprehensive income for material associates

	Grosskraftwerk Mannheim AG, Mannheim	
Euro 000s	Financial year	Previous year
Sales excluding energy taxes	509,634	524,745
Scheduled depreciation and amortisation	−97,071	−97,105
Interest expenses	−64,709	−65,801
Income tax income	116	1
Annual net income	−62,574	−4,662
Other income and expenses	51,330	−41,019
Total comprehensive income for period	**−11,244**	**−45,681**
Dividends received from material associates	–	–

Further key financial figures for material associates

	Grosskraftwerk Mannheim AG, Mannheim	
Euro 000s	Financial year	Previous year
Assets	**1,985,979**	**2,081,990**
Non-current assets	1,817,686	1,919,335
Current assets	168,293	162,655
of which cash and cash equivalents	1,879	216
Equity and debt	**1,985,979**	**2,081,990**
Equity	116,029	127,273
Non-current provisions	629,536	705,497
Non-current debt and other liability items	228,972	1,105,856
of which non-current financial debt	154,000	1,035,000
Current provisions	73,761	79,796
Current debt and other liability items	937,681	63,568
of which current financial debt	876,280	30,285

Reconciliation of summarised key financial figures with carrying amounts of material associates

	Grosskraftwerk Mannheim AG, Mannheim	
Euro 000s	Financial year	Previous year
Net assets at 1 October	127,273	172,954
Profit/loss for period	−62,574	−4,662
Distribution	–	–
Other income and expenses	51,330	−41,019
Other Group adjustments	–	–
Net assets at 30 September	**116,029**	**127,273**
Group share of net assets	32,488	35,636
Other items	1,897	1,897
Carrying amount of investment in associates	**34,385**	**37,533**

The aggregate profits, total comprehensive income and carrying amounts of non-material associates are presented in the following table:

Summarised key financial figures for non-material associates

Euro 000s	**Financial year**	Previous year
Profit/loss for period	1,992	4,333
Total comprehensive income for period	1,992	4,333
Carrying amount of investment in non-material associates	**12,422**	**10,538**

Other comprehensive income at material associates includes items resulting from the measurement of pension obligations and currency translation differences.

The income from shareholdings collected by MVV from associates amounted to Euro 4,852 thousand in the 2018 financial year (previous year: Euro 1,366 thousand).

MVV's share of the contingent liabilities of companies measured at equity amounted to Euro 1,568 thousand (previous year: Euro 1,042 thousand).

The joint venture Gemeinschaftskraftwerk Kiel GmbH and associate Grosskraftwerk Mannheim AG have financial years ending on 31 December, and thus deviating from MVV's financial year. Their results have been recognised at the Group accordingly. As both these companies involve power plants whose costs are fully reimbursed and whose annual net income and distributions remain constant, the deviating balance sheet date does not have implications for MVV. As in the previous year, no publicly listed market prices were available.

19. Subsidiaries with non-controlling interests of material significance to the Group

Given their size and their influence on the Group, the following companies have been identified as material subsidiaries: Stadtwerke Kiel AG, Kiel, Energieversorgung Offenbach AG, Offenbach am Main, and Juwi AG, Wörrstadt.

The statements of comprehensive income and further key financial information concerning the non-controlled interests in the companies are presented in the following tables.

The figures stated represent amounts prior to consolidation.

Statement of comprehensive income for non-controlled interests in Energieversorgung Offenbach AG

Euro 000s	**1 Oct 2017 to 30 Sep 2018**	1 Oct 2016 to 30 Sep 2017
Sales excluding energy taxes	312,318	344,982
Annual net income	17,573	13,637
Other income and expenses	451	2,364
Total comprehensive income for period	**18,024**	**16,001**
Total comprehensive income attributable to non-controlling interests	9,012	8,000
Dividends paid (to non-controlling shareholders)	5,468	5,288

Further key financial figures for non-controlled interests in Energieversorgung Offenbach AG

Euro 000s	**30 Sep 2018**	30 Sep 2017
Assets	**366,392**	**345,315**
Non-current assets	292,814	285,440
Current assets	73,578	59,875
of which cash and cash equivalents	12,597	14,418
Equity and debt	**366,392**	**345,315**
Equity	158,650	151,563
Non-current provisions	33,151	33,466
Non-current debt and other liability items	95,588	107,213
of which non-current financial debt	59,974	72,707
Current provisions	7,759	7,523
Current debt and other liability items	71,244	45,550
of which current financial debt	21,983	1,483

Statement of comprehensive income for non-controlled interests in Stadtwerke Kiel AG

Euro 000s	**1 Oct 2017 to 30 Sep 2018**	1 Oct 2016 to 30 Sep 2017
Sales excluding energy taxes	650,892	715,580
Annual net income	29,235	16,035
Other income and expenses	53	2,002
Total comprehensive income for period	**29,288**	**18,037**
Total comprehensive income attributable to non-controlling interests	14,351	8,838
Dividends paid (to non-controlling shareholders)	9,629	4,802

Statement of comprehensive income for non-controlled interests in Juwi AG

Euro 000s	**1 Oct 2017 to 30 Sep 2018**	18 Dec 2016 to 30 Sep 2017
Sales excluding energy taxes	248,826	33,990
Annual net income	14,863	−27,345
Other income and expenses	−66	92
Total comprehensive income for period	**14,797**	**−27,253**
Total comprehensive income attributable to non-controlling interests	5,457	−10,051
Dividends paid (to non-controlling shareholders)	–	–

Further key financial figures for non-controlled interests in Stadtwerke Kiel AG

Euro 000s	**30 Sep 2018**	30 Sep 2017
Assets	**780,949**	**647,105**
Non-current assets	635,817	571,760
Current assets	145,132	75,345
of which cash and cash equivalents	48,201	17,426
Equity and debt	**780,949**	**647,105**
Equity	240,718	215,424
Non-current provisions	24,082	29,626
Non-current debt and other liability items	350,483	295,253
of which non-current financial debt	305,664	253,585
Current provisions	10,617	11,464
Current debt and other liability items	155,049	95,338
of which current financial debt	36,136	28,910

Further key financial figures for non-controlled interests in Juwi AG

Euro 000s	**30 Sep 2018**	30 Sep 2017
Assets	**314,893**	**249,118**
Non-current assets	103,602	82,937
Current assets	211,291	166,181
of which cash and cash equivalents	27,234	26,375
Equity and debt	**314,893**	**249,118**
Equity	138,875	96,904
Non-current provisions	4,695	597
Non-current debt and other liability items	36,753	84,030
of which non-current financial debt	36,614	83,801
Current provisions	37,306	5,071
Current debt and other liability items	97,264	62,516
of which current financial debt	60,462	58,379

Total non-controlled interests in subsidiaries amounted to Euro 244,787 thousand in the period under report, of which Euro 117,867 thousand related to Stadtwerke Kiel AG, Kiel, Euro 60,710 thousand to Energieversorgung Offenbach AG, Offenbach am Main, Euro 38,927 thousand to Juwi AG, Wörrstadt, and Euro 27,286 thousand to non-material subsidiaries.

20. Other financial assets

Write-downs and the development in other financial assets are reported in the following table, as well as under income from companies recognised at equity and other income from shareholdings (Note 8), financing income (Note 10) and financing expenses (Note 11).

Other financial assets

Euro 000s	Other majority shareholdings	Other shareholdings	Loans in connection with finance leases	General loans and securities	**Total**
Gross value at 1 October 2016	1,347	7,240	42,458	7,305	58,350
Change in scope of consolidation	–	–	–	6,595	6,595
Currency adjustments	16	−1	–	–	15
Additions	90	528	4,109	10,107	14,834
Disposals	−68	−495	–	−17,847	−18,410
Reclassifications	–	–	−3,052	−390	−3,442
Gross value at 30 September 2017	**1,385**	**7,272**	**43,515**	**5,770**	**57,942**
Amortisation at 1 October 2016	−492	−845	−33	–	−1,370
Currency adjustments	−18	–	–	–	−18
Impairment losses	−5	−8	–	–	−13
Amortisation at 30 September 2017	**−515**	**−853**	**−33**	**–**	**−1,401**
Net value at 30 September 2017	**870**	**6,419**	**43,482**	**5,770**	**56,541**
Gross value at 1 October 2017	1,385	7,272	43,515	5,770	57,942
Currency adjustments	6	2	–	–	8
Additions	242	67	229	1,073	1,611
Disposals	−212	−870	–	−79	−1,161
Reclassifications	–	7	−379	156	−216
Gross value at 30 September 2018	**1,421**	**6,478**	**43,365**	**6,920**	**58,184**
Amortisation at 1 October 2017	−515	−853	−33	–	−1,401
Currency adjustments	−4	–	–	–	−4
Disposals	30	853	–	–	883
Amortisation at 30 September 2018	**−489**	**–**	**−33**	**–**	**−522**
Net value at 30 September 2018	**932**	**6,478**	**43,332**	**6,920**	**57,662**

Other financial assets comprise other majority shareholdings, other shareholdings, receivables in connection with finance leases and loans. These items are measured and categorised as follows:

Other majority shareholdings and other shareholdings are measured at amortised cost, corrected where necessary to account for impairments due to cash flows falling short of expectations or default risks materialising. The other shareholdings recognised under other financial assets involve minority shareholdings, associates and joint ventures not included in MVV's consolidated financial statements due to materiality considerations.

The loans included in this line item are classified under loans and receivables, and the respective values are recognised at amortised cost, while leasing receivables are classified under leases. Finance leases are recognised as receivables in the amount of the present value of the minimum leasing payments (net investment value). Loans and leasing receivables have fixed interest rates, with an average interest rate of 4.4 % (previous year: 4.2 %). The average period for which interest rates remain fixed amounts to 5.7 years in the case of fixed-interest loans (previous year: 6.7 years) and to 6.6 years in the case of finance leases (previous year: 6 years). Reclassifications mainly involve reclassifications of the aforementioned items to current financial assets in line with their respective maturities.

Default risks identifiable for financial assets are accounted for with write-downs recognised under income from shareholdings or in the financial result.

Further information about financial instruments can be found in Note 35.

As in the previous year, there were no restrictions on disposal or other encumbrances.

Other financial assets also include the non-current share of finance leases. In several contracting projects, MVV acts as lessor in the context of finance lease agreements. The reconciliation of the present value of minimum leasing payments with gross investments in leases is as follows:

Reconciliation

Euro 000s	**30 Sep 2018**	30 Sep 2017
Present value of minimum leasing payments with maturities < 1 year	**7,260**	**6,842**
Present value of minimum leasing payments with maturities > 1 year		
1 to 5 years	23,928	22,677
longer than 5 years	19,455	22,076
Present value of minimum leasing payments with maturities > 1 year	**43,383**	**44,753**
Total present value of minimum leasing payments	**50,643**	**51,595**
Financing income not yet realised	14,294	13,803
Gross investments in finance leases	**64,937**	**65,398**

21. Other receivables and assets

Other receivables and assets have been broken down into their respective contents and counterparties in the following tables. The hedging relationship has also been stated in the case of derivative financial instruments.

Financial and non-financial receivables and assets

	30 September 2018			30 September 2017		
Euro 000s	**Non-current**	**Current**	**Total**	Non-current	Current	Total
Financial receivables and assets						
Derivative financial instruments	292,690	664,541	957,231	174,259	257,310	431,569
Receivables from security deposits for energy trading transactions	–	194	194	–	126	126
Receivables in connection with finance leases	–	6,916	6,916	–	6,430	6,430
Suppliers with debit balances	–	6,484	6,484	–	4,312	4,312
Loans	–	3,244	3,244	–	6,496	6,496
Receivables from employees	–	352	352	–	207	207
Escrow accounts	–	–	–	–	48	48
Miscellaneous other assets	2,931	33,645	36,576	9,437	36,398	45,835
Non-financial receivables and assets						
Other tax receivables	–	33,306	33,306	–	22,936	22,936
Deferred expenses and accrued income	5,172	9,202	14,374	5,574	8,946	14,520
Emission rights	–	5,475	5,475	–	234	234
Miscellaneous other non-financial assets	8,227	2,619	10,846	–	–	–
	309,020	**765,978**	**1,074,998**	**189,270**	**343,443**	**532,713**

Derivative financial instruments (financial receivables and assets)

	30 September 2018			30 September 2017		
Euro 000s	**Non-current**	**Current**	**Total**	Non-current	Current	Total
Derivative financial instruments	292,690	664,541	957,231	174,259	257,310	431,569
of which without IAS 39 hedges	234,909	643,908	878,817	148,499	248,636	397,135
of which cash flow hedges	57,781	20,633	78,414	25,760	8,674	34,434

Derivative financial instruments rose in value compared with the previous year. This was due to higher market prices and the resultant increase in the fair values of energy trading transactions recognised under IAS 39. These items relate to interest, currency and commodity derivatives for electricity, gas, coal, CO_2 and other certificates.

Further information about financial instruments can be found in Note 35.

Other tax receivables mainly include input tax and energy tax credits.

Non-financial miscellaneous other assets include expenses of Euro 6,818 thousand for the past extension and renewal of infrastructure assets at the two British power plants. These assets are not within MVV's control but are essential for the supply of electricity and steam. The outlays thereby incurred are being deferred over the corresponding contractual term.

Furthermore, this line item also includes input taxes that are not yet deductible.

The current portion of leasing receivables and loans is reported under current financial other assets. Measurement of these items is based on the same principles as for the non-current portions. These principles are outlined under other financial assets.

Furthermore, miscellaneous financial other assets mainly relate to receivables due from a former shareholder of a subsidiary, securities in connection with tender processes and receivables due from third parties for building cost grants.

Other receivables and assets

	30 September 2018			30 September 2017		
Euro 000s	**Non-current**	**Current**	**Total**	Non-current	Current	Total
Other receivables and assets						
from third parties	308,671	761,316	1,069,987	188,880	341,837	530,717
from other majority shareholdings	–	976	976	–	449	449
from companies recognised at equity	349	3,640	3,989	390	1,132	1,522
from other shareholdings	–	46	46	–	25	25
	309,020	**765,978**	**1,074,998**	**189,270**	**343,443**	**532,713**

The write-downs and maturity structures for other receivables and assets have been presented in Note 35.

To reduce the counterparty risk involved in highly fluctuating fair values of energy trading derivatives, security deposits are exchanged with external trading partners. These involve margins. To reduce these counterparty risks, payments are made both within the European Energy Exchange (EEX) and in some cases within the framework of bilateral agreements. These are reflected in the receivables from security deposits for energy trading transactions line item. Receivables from security deposits showed a slight year-on-year increase to Euro 194 thousand (previous year: Euro 126 thousand).

There were no indications of impairment requirements for non-impaired other receivables and assets. All write-downs undertaken were calculated following consideration of each case and were not based on any general allowance.

22. Inventories

Inventories

Euro 000s	**30 Sep 2018**	30 Sep 2017
Raw materials and supplies	40,771	38,868
Finished and unfinished products and services (project rights)	44,977	75,676
Finished and unfinished products, services (other) and merchandise	46,089	51,316
Advance payments	19,421	114,813
Commodity trading assets	9,704	1,856
	160,962	**282,529**

The change in inventories is mainly due to the reduction in the project business. Write-downs of Euro 745 thousand were recognised for inventories (previous year: Euro 150 thousand). Write-ups of Euro 3,725 thousand were included due to higher net disposal prices (previous year: Euro 312 thousand).

The commodity trading assets item includes inventories relating to special gas storage transactions. These items have been measured by reference to wholesale prices as of the balance sheet date and involve Level 2 measurement. The definitions of individual measurement levels can be found in Note 35.

23. Trade receivables

Trade receivables

Euro 000s	**30 Sep 2018**	30 Sep 2017
Trade receivables	381,729	351,104
of which due from other majority shareholdings	293	501
of which due from companies recognised at equity	16,497	14,545
of which due from other shareholdings	697	453

The above table exclusively shows those trade receivables with terms of under one year. Trade receivables with terms of more than one year are of immaterial significance at the Group and have been recognised under other receivables and assets.

The trade receivables recognised as of 30 September 2018 include receivables of Euro 18,272 thousand (previous year: Euro 4,826 thousand) for the settlement of construction contracts in line with their percentage of completion. Revenues of Euro 56,629 thousand were recognised for construction contracts in the year under report (previous year: Euro 110,562 thousand). Total costs incurred for construction contracts not yet complete as of the balance sheet date came to Euro 41,776 thousand (previous year: Euro 33,684 thousand). Construction contracts not yet complete resulted in a profit of Euro 2,812 thousand (previous year: profit of Euro 4,234 thousand). Advance payments received for construction contracts amounted to Euro 24,904 thousand at the balance sheet date (previous year: Euro 22,810 thousand).

Receivables with carrying amounts totalling Euro 499 thousand were sold within the framework of factoring agreements in the 2018 financial year (previous year: Euro 299 thousand). These receivables were fully retired.

The write-downs and maturity structures for trade receivables have been presented in Note 35. Receivables are written down on the basis of their actual age. Furthermore, large receivables are assessed individually to determine their specific write-down requirements. There were no indications of write-down requirements for non-impaired trade receivables.

24. Tax receivables

The tax receivables of Euro 27,586 thousand (previous year: Euro 18,908 thousand) mainly relate to corporate income tax and trade tax refund claims. These have been recognised at nominal value.

The increase in income tax receivables is mainly due to one-off capital gains tax receivables at Juwi AG as a result of a capital reduction at Juwi Energieprojekte GmbH.

25. Cash and cash equivalents

Cash and cash equivalents predominantly comprise credit balances at banks. The acquisition of fully consolidated companies and other business units resulted in the addition of cash and cash equivalents of Euro 824 thousand (previous year: Euro 992 thousand). The disposal of fully consolidated companies and other business units led to the retirement of cash and cash equivalents of Euro 1,269 thousand (previous year: Euro 5,946 thousand).

Within the framework of short-term liquidity management structures, credit balances are exclusively deposited at banks of impeccable creditworthiness. As in the previous year, such balances bear interest at interbank levels.

26. Assets held for sale

The assets classified in the previous year as held for sale were sold in the current financial year. These involved the fibre optic network at MVV Energie AG and multi-utility contracts at MVV ImmoSolutions GmbH.

27. Equity

The structure and development of equity have been presented in the statement of changes in equity.

Share capital: The share capital of MVV Energie AG amounts to Euro 168,721 thousand and is divided into 65,906,796 individual registered shares of Euro 2.56 each. All registered shares are paid up in full. The City of Mannheim directly and indirectly owned 50.1 % of the shares as of 30 September 2018; EnBW Energie Baden-Württemberg AG held 28.8 % and RheinEnergie AG 16.3 % of the shares. The remaining 4.8 % of the shares were in free float.

Authorised capital II: By resolution dated 14 March 2014, the Annual General Meeting of MVV Energie AG authorised the Executive Board until 13 March 2019 to increase the share capital on one or several occasions by a total of up to Euro 51,200 thousand. Shareholders must generally be granted subscription rights; however, the Executive Board may exclude such rights on one or several occasions, in full or in part, for a total of Euro 13,180 thousand. The Executive Board of MVV Energie AG has not yet made any use of this authorisation.

Authorisation to buy back treasury stock: By resolution dated 13 March 2015, the Annual General Meeting authorised the Executive Board until 12 March 2020 to acquire treasury stock up to 10 % of existing share capital upon adoption of the resolution. The Executive Board of MVV Energie AG has not yet made any use of this authorisation.

Capital reserve: The capital reserve relates to MVV Energie AG. This reserve includes external flows of funds requiring inclusion under § 272 HGB. The variance of Euro 3,705 thousand to the capital reserve in the financial statements of MVV Energie AG is due to transaction costs for the capital increases executed in 2006 and 2007, which have been recognised as a reduction to the capital reserve.

Equity generated: In addition to the prorated revenue reserves and accumulated annual net income of MVV Energie AG and of other consolidated companies since the date of initial consolidation, equity generated also includes cumulative changes recognised directly in equity as a result of the fair value measurement of financial instruments, mainly relating to hedge relationships recognised under IAS 39, as well as currency translation differences arising upon the translation of foreign financial statements and actuarial gains and losses for defined benefit plans. Income of Euro 19,909 thousand was recognised directly in equity in the financial year under report in connection with the fair value measurement of financial instruments (previous year: income of Euro 27,627 thousand).

28. Provisions

Provisions

Euro 000s	Balance at 1 Oct 2017	Change in scope of consolidation	Currency adjustments	Utilised	Reversed	Added	Reclassified	Interest component	**Balance at 30 Sep 2018**
Non-current provisions									
Pensions and similar obligations	**77,818**	**–**	**–**	**−2,673**	**–**	**856**	**–**	**1,550**	**77,551**
Tax provisions	**4,987**	**–**	**–**	**–**	**4,987**	**–**	**–**	**–**	**–**
Other provisions									
Personnel-related obligations	50,349	–	−3	−440	1,319	2,863	−11,376	999	41,073
Refurbishment, dismantling and warranty obligations	42,098	556	−10	−2,108	798	839	−4,756	91	35,912
Provisions for litigation and contract risks	3,538	–	–	−54	1,957	363	−411	1	1,480
Miscellaneous contingencies	24,886	−1	10	−118	3,013	3,885	−479	186	25,356
Total other provisions	**120,871**	**555**	**−3**	**−2,720**	**7,087**	**7,950**	**−17,022**	**1,277**	**103,821**
Total non-current provisions	**203,676**	**555**	**−3**	**−5,393**	**12,074**	**8,806**	**−17,022**	**2,827**	**181,372**
Current provisions									
Tax provisions	**31,803**	**–**	**−8**	**−12,656**	**2,032**	**37,774**	**–**	**–**	**54,881**
Other provisions									
Personnel-related obligations	43,125	–	1	−39,478	2,948	29,685	11,376	–	41,761
Services not yet invoiced	24,317	–	−134	−18,300	5,431	54,034	–	–	54,486
Restructuring obligations	3,845	–	–	−3,024	821	–	–	–	–
Refurbishment, dismantling and warranty obligations	11,234	–	14	−7,009	3,866	2,929	4,756	–	8,058
Provisions for litigation and contract risks	11,502	–	−3	−1,764	5,923	1,594	411	–	5,817
Miscellaneous contingencies	40,771	−57	−8	−18,745	17,521	23,943	479	–	28,862
Total other provisions	**134,794**	**−57**	**−130**	**−88,320**	**36,510**	**112,185**	**17,022**	**–**	**138,984**
Total current provisions	**166,597**	**−57**	**−138**	**−100,976**	**38,542**	**149,959**	**17,022**	**–**	**193,865**
Total provisions	**370,273**	**498**	**−141**	**−106,369**	**50,616**	**158,765**	**–**	**2,827**	**375,237**

Provisions broken down by maturity

	30 September 2018			30 September 2017		
Euro 000s	Non-current	Current	Total	Non-current	Current	Total
Provisions for pensions and similar obligations	77,551	–	77,551	77,818	–	77,818
Tax provisions	–	54,881	54,881	4,987	31,803	36,790
Personnel-related provisions	41,073	41,761	82,834	50,349	43,125	93,474
Services not yet invoiced	–	54,486	54,486	–	24,317	24,317
Restructuring obligations	–	–	–	–	3,845	3,845
Refurbishment, dismantling and warranty obligations	35,912	8,058	43,970	42,098	11,234	53,332
Provisions for litigation and contract risks	1,480	5,817	7,297	3,538	11,502	15,040
Miscellaneous contingencies	25,354	28,864	54,218	24,886	40,771	65,657
	181,370	**193,867**	**375,237**	**203,676**	**166,597**	**370,273**

Uncertain tax liabilities are recognised as tax provisions by reference to the best estimate of the anticipated tax payment or the expected amount to the extent that such payments are likely to arise. These items are only recognised as tax liabilities once the respective tax assessment notices are received. Tax provisions include provisions for taxes on income, such as corporate income tax, including the solidarity surcharge, and trade tax.

The provisions for personnel-related obligations category comprises provisions for early retirement expenses and for employee benefit expenses.

The provisions for early retirement expenses mainly relate to legal and constructive obligations towards employees as a result of part-time early retirement agreements. The actuarial assumptions correspond to those used in the measurement of pensions and similar obligations.

The provisions for employee benefit expenses mainly include collectively agreed obligations, such as allowances, compensation payments, bonus payments, employee working hour credits and anniversary bonuses. The provisions for employee benefit expenses include individual items for which utilisation depends on a specified degree of target achievement.

The services not yet invoiced category principally involves supplies and services from third parties which have already been provided but not yet invoiced. These have been measured on the basis of appropriate estimates.

The provisions for refurbishments, dismantling obligations and warranties category mainly includes dismantling obligations in connection with the construction of a gas storage facility and for wind turbines.

The provisions for warranties relate to solar and wind power projects already completed. These provisions have been recognised on the basis of contractual requirements. Recognition here has been based on assessments of individual cases and relevant factors.

The provisions for litigation and contract risks category includes provisions for the litigation risks relating to several individual risks for which the level of claim is uncertain. The value is based on the most likely outcome of the litigation expected on the basis of the information currently available. Furthermore, this category also includes provisions for onerous contracts.

Miscellaneous contingencies include provisions for risks relating to contractual obligations for completed projects and for the renewal of infrastructure assets, provisions for the risks associated with a price adjustment clause, provisions for risks resulting from the review of § 6a of the German Land Transfer Tax Act (GrEstG) by the European Court of Justice and for the risks resulting from a tax audit of interest expenses pursuant to § 233a of the German Tax Code (AO).

The provisions recognised are utilised in line with the terms to which they have been allocated.

29. Provisions for pensions and similar obligations

The company pension plans consist of defined contribution and defined benefit plans.

The pension scheme for MVV employees is largely arranged in line with collective wage and salary agreements specific to the respective companies. This results in indirect pension obligations to employees which are covered almost exclusively by municipal supplementary pension companies (ZVKs). This requires allocations to be made for retirement periods. The payments made in this context serve to finance current pension outlays. According to IFRS requirements, this type of pension plan represents a defined benefit plan, as the individual benefits provided by the ZVKs to former employees of member companies are not dependent on the level of contributions paid into the pension funds. Moreover, as the employees of several member companies are insured by the ZVKs, this type of pension plan is considered a multi-employer plan and thus requires the application of special regulations.

Given the redistribution of the benefits provided by ZVKs among member companies and the lack of adequate information about the age structures, personnel turnover rates and salaries of the employees thereby covered, no information is available on the proportion of future payment obligations (economic obligation) accruing to MVV. In view of this, IFRS does not permit recognition of provisions and the amounts therefore have to be treated by MVV as a defined contribution obligation, even though it is actually a defined benefit pension plan. Contributions to the pension plan are measured as a percentage of compensation subject to the additional pension premium and are borne by employees and employers. The percentage rate of contribution is determined by the ZVKs. MVV expects contributions in the 2019 financial year in the same amount as in the previous year. The contributions are used for the beneficiaries as a collective entity. Should the ZVKs have insufficient funds, then they could increase the mandatory contribution. Should MVV terminate its membership of the ZVKs, then they would be entitled to financial settlement. The amount of settlement is calculated as the present value of beneficiaries' existing entitlement and future claims on the part of their surviving dependants and existing pension entitlements for vested claims at the time at which membership is terminated.

The payments made to municipal supplementary pension companies (ZVKs) and the state pension system are viewed as payments to defined contribution plans. These contributions are recognised as expenses and reported under employee benefit expenses. An amount of Euro 31,165 thousand was paid into the state pension systems in the 2018 financial year (previous year: Euro 30,168 thousand). Moreover, an amount of Euro 15,169 thousand was paid into defined contribution pension schemes (previous year: Euro 15,273 thousand).

Furthermore, there are direct pension obligations resulting from former collectively agreed provisions (measured in terms of duration of company service and employee compensation), as well as individual commitments made to Executive Board members.

Provisions for pensions and similar obligations are recognised exclusively for defined benefit plans.

The principal estimates used when measuring provisions for pensions and similar obligations relate in particular to the discount factor, biometric probabilities and trend assumptions. Any deviations in the development in these estimates could result in differences between the amounts recognised and the obligations actually arising over time. Actuarial gains and losses are fully recognised in the period in which they arise. They are recognised outside the income statement in the statement of income and expenses recognised in group equity. This means that any amendments in estimates have direct implications for MVV.

Pursuant to IAS 19, the pension provisions are calculated using the projected unit credit method. As well as pensions and vested claims known of at the balance sheet date, this method also accounts for pay rises and pension increases expected in future. The calculation made application of the 2018 G Heubeck mortality tables.

The main parameters used to calculate the defined benefit plans as of 30 September 2018 are:

Parameters

	30 Sep 2018	30 Sep 2017
Discount rate	2.1 %	2.0 %
Future pay rises	2.1 – 3.0 %	2.0 – 3.0 %
Future pension increases	1.6 – 2.0 %	1.6 – 2.0 %

The expenses for these pensions and similar obligations structured as defined benefit plans comprise the following items:

Pension provision expenses

Euro 000s	**FY 2018**	FY 2017
Service cost	2,054	2,352
Interest expenses	1,550	1,201
	3,604	**3,553**

The interest expenses for vested pension claims are reported in the income statement under financing expenses (other interest and similar expenses). The other expenses are recognised as employee benefit expenses.

The present value of the defined benefit obligations developed as follows:

Development in pension claims

	30 September 2018			30 September 2017		
Euro 000s	**Present value of defined benefit obligations**	**Fair value of plan assets**	**Total**	Present value of defined benefit obligations	Fair value of plan assets	Total
Balance at 1 October	78,401	583	77,818	87,973	512	87,461
Current service cost	2,054	–	2,054	2,352	–	2,352
Interest expenses (interest income)	1,550	–	1,550	1,201	–	1,201
Remeasurement						
(i) Income from plan assets (excluding amounts included in interest income from plan assets)	–	12	– 12	–	8	– 8
(ii) Actuarial gains/losses	– 1,133	– 13	– 1,120	– 10,529	6	– 10,535
Payments made to beneficiaries	– 2,673	–	– 2,673	– 2,596	–	– 2,596
Contributions to plan assets	–	66	– 66	–	57	– 57
Balance at 30 September	**78,199**	**648**	**77,551**	**78,401**	**583**	**77,818**

The defined benefit pension obligations at the Group are countered by a low volume of plan assets. The amount of provision recognised in the balance sheet is calculated as follows:

Calculation of provision

Euro 000s	FY 2018	FY 2017
Present value of defined benefit obligation	78,199	78,401
Fair value of plan assets	648	583
Provision recognised at 30 September	**77,551**	**77,818**

The plan assets involve contractual trust arrangements (CTAs) managed as trust assets by the trustee Deutsche Pensflex Treuhand e. V. Furthermore, there are insurance contracts with private insurers and an investment fund organised by an international fund company and listed on the capital market.

The actuarial gains and losses recognised in group equity for defined benefit obligations developed as follows:

Accumulated actuarial gains and losses recognised in equity

Euro 000s	FY 2018	FY 2017
Accumulated actuarial gains (+) and losses (–) recognised in equity at 1 October	–13,616	–19,408
Actuarial gains (+) and losses (–) recognised in equity	674	5,792
Accumulated actuarial gains (+) and losses (–) recognised in equity at 30 September	**–12,942**	**–13,616**

Experience adjustments to the present value of the pension claims (changes in assumptions) form part of the actuarial gains and losses attributable to the pension claims in the given year.

Pension payments of Euro 3,194 thousand are forecast for existing pension obligations for the 2019 financial year.

The weighted average duration of the defined benefit plans amounts to 15 years.

The expected maturity of undiscounted pension payments as of the balance sheet date was as follows:

Expected pension payments

Euro 000s	
2019	3,194
2020	3,276
2021	3,286
2022	4,258
2023	3,330
>2023	79,618
	96,962

The sensitivity analysis is based on changes in one assumption while all other assumptions remain constant. That is unlikely to occur in reality. Furthermore, it is possible that changes in several assumptions will correlate with each other. The sensitivity of the defined benefit obligation to actuarial assumptions has been calculated using the same method used to calculate pension provisions in the balance sheet.

The methods and types of assumption used when preparing the sensitivity analysis have not changed compared with the previous year.

Sensitivity analysis

	Impact on obligation		
	Change in assumption by	Increase in assumption	Reduction in assumption
Discount rate	0.50 %	Reduction by 6 %	Increase by 6 %
Future pay rises	0.50 %	–	–
Future pension increases	0.50 %	Increase by 4 %	Reduction by 4 %
Mortality	1 year	Increase by 4 %	–

30. Financial debt

Financial debt

	30 September 2018			30 September 2017		
Euro 000s	Non-current	Current	Total	Non-current	Current	Total
Liabilities						
to banks	1,096,574	212,460	1,309,034	1,224,523	137,354	1,361,877
in connection with finance leases	42,320	2,917	45,237	42,755	3,147	45,902
to other majority shareholdings	–	722	722	–	766	766
to companies recognised at equity	–	1,581	1,581	–	1,581	1,581
to other shareholdings	–	650	650	–	460	460
Other financial debt	24,244	4,528	28,772	31,949	5,105	37,054
	1,163,138	**222,858**	**1,385,996**	**1,299,227**	**148,413**	**1,447,640**

Maturity in years

	30 September 2018			30 September 2017		
Euro 000s	< 1 year	1 – 5 years	> 5 years	< 1 year	1 – 5 years	> 5 years
Liabilities						
to banks	212,460	486,957	609,617	137,354	585,627	638,895
in connection with finance leases	2,917	11,594	30,726	3,147	9,556	33,199
to other majority shareholdings, companies recognised at equity and other shareholdings	2,953	–	–	2,807	–	–
Other financial debt	4,528	13,020	11,224	5,105	16,115	15,835
	222,858	**511,571**	**651,567**	**148,413**	**611,298**	**687,929**

The fixed-rate liabilities to banks of Euro 937 million (previous year: Euro 1,063 million) have an average interest rate of 2.6 % (previous year: 3.1 %), while the floating-rate liabilities to banks of Euro 372 million (previous year: Euro 299 million) have an average interest rate of 2.2 % (previous year: 2 %). The average remaining period for which the rate remains fixed in the case of fixed-rate liabilities comes to seven years (previous year: six years).

At 30 September 2018, MVV had undrawn committed credit lines of Euro 650 million (previous year: Euro 700 million).

Liabilities in connection with finance leases are recognised at the present value of future leasing payments. The fair values of other financial debt items are basically equivalent to the carrying amounts reported.

The liabilities in connection with finance lease contracts involve buildings, various items of technical equipment and plant and operating equipment. The contracts provide for extension options in some cases, but do not include purchase options or price adjustment clauses.

The transition from the present value of future minimum leasing payments to the liabilities reported is as follows:

Present value of minimum leasing payments

Euro 000s	30 Sep 2018	30 Sep 2017
Present value of minimum leasing payments with maturities		
up to 1 year	5,441	6,026
1 to 5 years	19,066	2,856
longer than 5 years	40,499	61,513
Total	**65,006**	**70,395**
Financing costs not yet realised	2,818	1,062
Gross liabilities in connection with finance leases	**67,824**	**71,457**

31. Other liabilities

Other liabilities have been broken down into their respective contents and counterparties in the tables below. The hedging relationship has also been stated in the case of derivative financial instruments. Following initial recognition, liabilities other than derivative financial instruments are measured at amortised cost using the effective interest method. This is basically consistent with their present values.

Other financial and non-financial liabilities

	30 September 2018			30 September 2017		
Euro 000s	**Non-current**	**Current**	**Total**	Non-current	Current	Total
Other financial liabilities						
Derivative financial instruments	235,604	613,421	849,025	143,028	243,666	386,694
Liabilities to employees	–	25,376	25,376	–	24,609	24,609
Customer credit balances	–	6,132	6,132	–	7,310	7,310
Interest liabilities	–	6,618	6,618	–	7,111	7,111
Liabilities for security deposits for energy trading transactions	–	77,258	77,258	–	3,304	3,304
Concession duties	–	2,160	2,160	–	2,000	2,000
Social security liabilities	–	736	736	–	703	703
Miscellaneous other financial liabilities	6,147	19,043	25,190	10,864	25,514	36,378
Other non-financial liabilities						
Advance payments received	7,178	23,959	31,137	–	173,405	173,405
Deferred income and accrued expenses	133,950	3,815	137,765	156,376	4,799	161,175
Liabilities for other taxes	–	44,846	44,846	–	55,948	55,948
Miscellaneous other non-financial liabilities	21,004	11,783	32,787	–	–	–
	403,883	**835,147**	**1,239,030**	**310,268**	**548,369**	**858,637**

Other liabilities

	30 September 2018			30 September 2017		
Euro 000s	**Non-current**	**Current**	**Total**	Non-current	Current	Total
Liabilities	403,883	811,188	1,215,071	310,268	374,964	685,232
of which to companies recognised at equity	6,129	11,749	17,878	3,925	1,561	5,486
Advance payments received for orders	–	23,959	23,959	–	173,405	173,405
	403,883	**835,147**	**1,239,030**	**310,268**	**548,369**	**858,637**

Derivative financial instruments involve interest rate derivatives, currency derivatives and commodity derivatives for electricity, gas, coal, CO_2 and other rights. Further details about financial instruments can be found in Note 35.

Derivative financial instruments (other financial liabilities)

	30 September 2018			30 September 2017		
Euro 000s	**Non-current**	**Current**	**Total**	Non-current	Current	Total
Derivative financial instruments	235,604	613,421	849,025	143,028	243,666	386,694
of which without IAS 39 hedges	194,700	602,313	797,013	112,623	233,861	346,484
of which cash flow hedges	40,904	11,108	52,012	30,405	9,805	40,210

To reduce the counterparty risk involved in highly fluctuating fair values of energy trading derivatives, security deposits (margins) are exchanged with the EEX. Moreover, the Group has entered into bilateral risk reduction agreements in some cases. Liabilities for security deposits for energy trading transactions rose year-on-year to Euro 77 million (previous year: Euro 3 million).

Financial miscellaneous other liabilities mainly relate to liabilities for concession duties and deferred liabilities.

Non-financial liabilities for other taxes chiefly include energy and value added tax liabilities.

Non-financial miscellaneous other liabilities primarily involve building cost grants for house connection costs.

32. Trade payables

Trade payables

Euro 000s	**30 Sep 2018**	30 Sep 2017
Trade payables	340,256	351,179
to other majority shareholdings	101	30
to companies recognised at equity	16,483	14,338
to other shareholdings	24	–

Trade payables are measured at amortised cost. The above table exclusively shows trade payables with terms of under one year. Due to their immaterial significance for the Group, trade payables maturing in the medium to long term have been recognised under other liabilities.

33. Tax liabilities and deferred taxes

The tax liabilities of Euro 439 thousand (previous year: Euro 1,074 thousand) consist of income tax liabilities.

The deferred taxes reported for the 2018 financial year relate to the following items:

Deferred taxes

	30 September 2018		30 September 2017	
Euro 000s	**Deferred tax assets**	**Deferred tax liabilities**	Deferred tax assets	Deferred tax liabilities
Intangible assets	2,287	–14,235	1,372	–22,732
Property, plant and equipment, including investment properties	11,275	–169,013	10,640	–164,218
Inventories [1]	10,822	–5,237	2,531	–4,737
Special item	–	–1,604	–	–1,406
Other assets and positive fair values of derivatives	29,807	–487,427	19,168	–206,715
Provisions for pensions	12,352	–	11,433	–
Non-current other provisions [1]	21,603	–	20,344	–
Current other provisions [1]	4,988	–18,751	6,402	–18,268
Liabilities and negative fair values of derivatives [1]	466,179	–33,111	209,430	–21,286
Losses carried forward [1]	26,676	–	28,494	–
Deferred taxes (gross)	**585,989**	**–729,378**	**309,814**	**–439,362**
Netting	–555,569	555,569	–276,379	276,379
Deferred taxes (net)	**30,420**	**–173,809**	**33,435**	**–162,983**

1 Previous year's figures adjusted to account for impairments recognised separately in 2017 financial year

Of the (net) deferred taxes presented above, Euro 11,568 thousand (previous year: Euro 17,672 thousand) relate to non-current deferred tax assets and Euro 85,387 thousand (previous year: Euro 111,101 thousand) to non-current deferred tax liabilities.

No deferred tax assets have been recognised for corporate income tax loss carryovers of Euro 100,046 thousand (previous year: Euro 84,779 thousand), trade tax loss carryovers of Euro 108,351 thousand (previous year: Euro 87,457 thousand) or for international loss carryovers of Euro 82,128 thousand (previous year: Euro 84,395 thousand).

For temporary differences of Euro 11,008 thousand at shareholdings (previous year: Euro 11,340 thousand), no deferred tax liabilities have been stated for an amount of Euro 3,336 thousand (previous year: Euro 3,436 thousand), as such differences are unlikely to be reversed by dividend distributions or disposal of the companies in the foreseeable future.

Deferred tax assets of Euro 11,390 thousand (previous year: Euro 8,443 thousand) have been recognised as of the balance sheet date for companies that generated a loss in the financial year under report or the previous year. The realisation of these assets is exclusively dependent on the generation of future profits. Based on the budget figures available, we expect these assets to be realised.

Deferred taxes of Euro 2,010 thousand were debited directly to other comprehensive income in group equity in the 2018 financial year (previous year: Euro 7,791 thousand).

The income tax items within other comprehensive income in group equity can be broken down into their components as follows:

Income tax items

	30 September 2018		30 September 2017	
Euro 000s	**Income tax**	**Gross**	Income tax	Gross
Actuarial gains and losses	−226	1,120	−2,979	10,534
Share of total comprehensive income attributable to companies recognised at equity	–	−14,370	–	−11,439
Items that will not be reclassified to profit or loss	**−226**	**15,490**	**−2,979**	**−905**
Cash flow hedges	−9,574	33,770	−12,335	44,601
Currency translation difference	–	1,376	–	2,814
Share of total comprehensive income attributable to companies recognised at equity	–	−166	–	–
Items that will be reclassified to profit or loss	**−9,574**	**34,980**	**−12,335**	**47,415**

34. Contingent claims, liabilities and financial obligations

The volume of obligations for contingent liabilities, claims and financial obligations listed below corresponds to the scope of liability pertaining at the balance sheet date. Contingent claims are treated by analogy with contingent liabilities.

Contingent liabilities involve potential obligations to third parties or existing obligations for which an outflow of resources is unlikely or whose amount cannot be reliably determined. Contingent liabilities are not recognised in the balance sheet.

The company has contingent liabilities of Euro 7 million for warranty agreements (previous year: Euro 7 million). It also has obligations of this nature in the form of guarantees amounting to Euro 1.1 million (previous year: Euro 1 million). As in the previous year, no collateral has been provided for third-party liabilities.

MVV’s has purchase commitments of Euro 177.4 million in connection with investment orders placed and financial obligations (previous year: Euro 46.0 million). This substantial increase mainly relates to investments in a new power plant in Scotland.

The Group has a contingent claim from the State of Baden-Württemberg and the City of Mannheim in connection with a land decontamination measure. This claim has a present value of Euro 3.8 million.

The financial obligations relating to operating leases primarily involve water grids, vehicle pools, IT equipment, land leasehold payments and rental payments for buildings and storage facilities. The minimum leasing payments have the following maturity structure:

Financial obligations for operating leases

	Nominal value	
Euro 000s	**30 Sep 2018**	30 Sep 2017
Operating leases		
up to 1 year	9,445	9,030
1 to 5 years	21,496	20,098
longer than 5 years	26,246	28,746
	57,187	**57,874**

In leases where economic ownership remains with the lessor (operating leases), the assets thereby leased are recognised at the lessor. The leasing expenses incurred are expensed over the term of the lease.

The contracts provide for extension options in some cases but do not include any purchase options. In some cases, rental contracts include price adjustment clauses linked to the consumer price index.

35. Financial instruments

For interest hedges, existing underlying transactions have been included in cash flow hedges with terms of up to ten years as of 30 September 2018 (previous year: nine years). For commodity hedges, the terms of planned hedged items amount to up to three years (previous year: up to five years). Both interest rate hedging instruments and commodity derivatives require net settlements to be paid at contractually fixed dates largely congruent with the hedged items. The hedging instruments mostly involve swaps which generate cash flows throughout their contractual terms.

Income of Euro 24,195 thousand was recognised directly in equity in the 2018 financial year (previous year: income of Euro 32,266 thousand).

The amount reclassified from equity and recognised through profit or loss in the income statement in connection with cash flow hedge accounting was as follows:

Amount reclassified

Euro 000s	FY 2018	FY 2017
Included in EBIT	20,811	3,231
Included in financial and tax results	−8,540	−9,634
Total amounts withdrawn	**12,271**	**−6,403**

The amounts recognised directly in equity and attributable reclassification amounts are presented in the following table:

Amounts recognised in equity

Euro 000s	30 Sep 2018	30 Sep 2017
Cash flow hedges	24,195	32,266
of which changes recognised in equity	36,466	25,863
of which changes recognised through profit or loss	−12,271	6,403

Income of Euro 18 thousand was recognised for the ineffective portion of cash flow hedges in the 2018 financial year (previous year: expenses of Euro 567 thousand). The results of ineffective portions of cash flow hedges are recognised as other operating income or expenses to the extent that they exceed the cumulative fair value change in the respective hedged items. For interest rate hedges, the results are recognised under other interest income and expenses.

Fair value hedges were designated for closed foreign currency positions in the 2018 financial year. The following amounts were recognised in the income statement in connection with these hedging relationships:

Gains and losses recognised in income statement for fair value hedges

Euro	FY 2018	FY 2017
Gains/losses on hedged item	−1,580	−5,223
Gains/losses on hedging instrument	1,270	5,218

The carrying amounts and fair values of financial instruments and their allocation to IAS 39 measurement categories have been presented in the following tables. The classes presented are based on the balance sheet.

IAS 39 measurement categories for carrying amounts at 30 September 2018

Euro 000s	IAS 39 measurement category	Carrying amounts	of which not within scope of IFRS 7	Fair values
Assets				
Financial assets				
of which unconsolidated shareholdings	available for sale	7,410	–	7,410
of which loans excluding finance leases	loans and receivables	10,164	–	10,164
of which loans in connection with finance leases	not applicable	50,248	–	50,248
of which securities	held for trading	–	–	–
Trade receivables < 1 year	loans and receivables	381,729	–	381,729
Other assets				
of which derivatives outside hedge accounting	held for trading	878,817	–	878,817
of which derivatives within hedge accounting	not applicable	78,414	–	78,414
of which other operating assets	loans and receivables	96,761	53,507	96,761
Cash and cash equivalents	loans and receivables	310,589	–	310,589
		1,814,132	**53,507**	**1,814,132**
Liabilities				
Financial debt				
of which financial debt in connection with finance leases	not applicable	45,237	–	45,237
of which other financial debt	amortised cost	1,340,759	–	1,399,468
Trade payables < 1 year	amortised cost	340,256	–	340,256
Other liabilities				
of which derivatives outside hedge accounting	held for trading	797,014	–	797,014
of which derivatives within hedge accounting	not applicable	52,012	–	52,012
of which other operating liabilities	amortised cost	357,218	214,484	357,218
		2,932,496	**214,484**	**2,991,205**

IAS 39 measurement categories for carrying amounts at 30 September 2017

Euro 000s	IAS 39 measurement category	Carrying amounts	of which not within scope of IFRS 7	Fair values
Assets				
Financial assets				
of which unconsolidated shareholdings	available for sale	7,289	–	7,289
of which loans excluding finance leases	loans and receivables	12,266	–	12,266
of which loans in connection with finance leases	not applicable	49,912	–	49,912
of which securities	held for trading	7	–	7
Trade receivables < 1 year	loans and receivables	351,104	–	351,104
Other assets				
of which derivatives outside hedge accounting	held for trading	397,135	–	397,135
of which derivatives within hedge accounting	not applicable	34,434	–	34,434
of which other operating assets	loans and receivables	88,218	37,897	88,218
Cash and cash equivalents	loans and receivables	370,301	–	370,301
		1,310,666	**37,897**	**1,310,666**
Liabilities				
Financial debt				
of which financial debt in connection with finance leases	not applicable	45,902	–	45,902
of which other financial debt	amortised cost	1,401,738	–	1,474,771
Trade payables < 1 year	amortised cost	351,179	–	351,179
Other liabilities				
of which derivatives outside hedge accounting	held for trading	346,484	–	346,484
of which derivatives within hedge accounting	not applicable	40,210	–	40,210
of which other operating liabilities	amortised cost	471,943	391,231	471,943
		2,657,456	**391,231**	**2,730,489**

Given the predominantly short-term remaining terms of trade receivables and payables, other operating receivables and liabilities and cash and cash equivalents, their carrying amounts as of the balance sheet date are basically equivalent to their fair values.

The fair value of other financial debt items is determined as their present value, taking due account of future payments. These items are discounted using the rate valid as of the balance sheet date (Level 2).

With regard to the fair value measurement of financial instruments, reference is made to the information provided on financial instruments in the accounting policies section of these notes.

The following table presents the key parameters for financial instruments measured at fair value. Pursuant to IFRS 7, the individual levels are defined as follows:

Level 1: Measurement based on prices listed on active markets and taken over without amendment

Level 2: Measurement based on directly or indirectly observable factors other than those in Level 1

Level 3: Measurement based on factors not observable on the market.

Measurement at cost: This category includes those financial instruments which IAS 39 requires to be measured at cost. On their transaction dates, these instruments were not in liquid markets, as a result of which their current recognition at cost approximates to their fair value. These items mainly involve other shareholdings and other majority shareholdings.

Fair value hierarchy at 30 September 2018

Euro 000s	Level 1	Level 2	Level 3	At cost
Financial assets				
Unconsolidated shareholdings	–	–	–	7,410
Securities	–	–	–	–
Derivatives outside hedge accounting	235,679	642,309	829	–
Derivatives within hedge accounting	74,109	4,305	–	–
Financial liabilities				
Derivatives outside hedge accounting	202,363	594,401	250	–
Derivatives within hedge accounting	31,804	17,704	1,712	792

Fair value hierarchy at 30 September 2017

Euro 000s	Level 1	Level 2	Level 3	At cost
Financial assets				
Unconsolidated shareholdings	–	–	–	7,289
Securities	7	–	–	–
Derivatives outside hedge accounting	97,157	299,950	28	–
Derivatives within hedge accounting	34,141	293	–	–
Financial liabilities				
Derivatives outside hedge accounting	105,315	240,653	516	–
Derivatives within hedge accounting	13,677	25,519	1,014	–

The derivatives of Euro 1,712 thousand in Level 3 hedge accounting include interest swaps with floor (previous year: Euro 1,014 thousand). The fair value of these derivatives amounts to Euro 1,712 thousand. Any upward or downward change in the volatility factored into the calculation by an absolute figure of 1 would increase the fair value by Euro 143 thousand or reduce it by Euro 138 thousand.

The following reconciliation presents the development in financial instruments recognised in Level 3.

Development in financial instruments recognised in Level 3

Euro 000s	Balance at 1 Oct 2017	Gains/losses in income statement	Gains/losses in other comprehensive income	Balance at 30 Sep 2018
Financial assets				
Derivatives outside hedge accounting	28	801	–	829
Financial liabilities				
Derivatives outside hedge accounting	516	974	–	1,490
Derivatives within hedge accounting	1,014	698	–	1,712

Development in financial instruments recognised in Level 3

Euro 000s	Balance at 1 Oct 2016	Gains/losses in income statement	Gains/losses in other comprehensive income	Balance at 30 Sep 2017
Financial assets				
Derivatives outside hedge accounting	196	−168	–	28
Financial liabilities				
Derivatives outside hedge accounting	433	83	–	516
Derivatives within hedge accounting	–	1,454	−440	1,014

Gains and losses in income statement for Level 3 financial instruments FY 2018

Euro 000s	**Total**	**of which still held at 30 Sep 2018**
Other operating income	801	–
Other operating expenses	−974	–
Financing expenses	−698	–
	−871	**–**

Gains and losses in income statement for Level 3 financial instruments FY 2017

Euro 000s	Total	of which still held at 30 Sep 2017
Other operating income	–	–
Other operating expenses	−251	–
Financing expenses	−1,454	–
	−1,705	**–**

Impairments of financial assets

Euro 000s	Unconsolidated shareholdings	Loans	Trade receivables < 1 year	Other operating assets
Balance at 1 October 2016	1,337	1,766	35,642	1,998
Utilisations/disposals	–	–	11,638	201
Net additions	31	341	14,306	1,892
Reclassifications	–	–	–	−363
Balance at 30 September 2017	**1,368**	**2,107**	**38,310**	**3,326**
Balance at 1 October 2017	1,368	2,107	38,310	3,326
Utilisations/disposals	883	121	14,312	279
Net additions	4	285	11,260	301
Balance at 30 September 2018	**489**	**2,271**	**35,258**	**3,348**

Impairment losses recognised in the 2018 financial year for individual IFRS 7 categories amounted to Euro 0 thousand for unconsolidated shareholdings (previous year: Euro 13 thousand), Euro 13,796 thousand for trade receivables (previous year: Euro 18,619 thousand) and Euro 715 thousand for other operating assets (previous year: Euro 2,598 thousand).

Netting of financial assets and financial liabilities

The financial assets and financial liabilities listed below are subject to netting, enforceable master netting agreements or similar arrangements.

Netting of financial assets at 30 September 2018

Euro 000s	Gross amount of financial assets reported	Gross amount of financial liabilities reported that are netted in balance sheet	Net amount of financial assets reported in balance sheet	Related amounts not netted in balance sheet		Net amount
				Financial instruments	Cash collateral received	
Loans excluding finance leases	10,164	–	10,164	–	–	10,164
Trade receivables < 1 year	519,751	−138,022	381,729	–	–	381,729
Derivative financial instruments	957,231	–	957,231	−738,786	−104,659	113,786
Other operating assets	96,767	−6	96,761	–	–	96,761
Cash and cash equivalents	310,589	–	310,589	−13,982	–	296,607
	1,894,502	**−138,028**	**1,756,474**	**−752,768**	**−104,659**	**899,047**

Netting of financial liabilities at 30 September 2018

Euro 000s	Gross amount of financial liabilities reported	Gross amount of financial assets reported that are netted in balance sheet	Net amount of financial liabilities reported in balance sheet	Related amounts not netted in balance sheet		Net amount
				Financial instruments	Cash collateral received	
Financial debt	1,340,759	–	1,340,759	−5,210	−700	1,346,669
Trade payables < 1 year	460,230	−119,974	340,256	–	–	340,256
Derivative financial instruments	849,026	–	849,026	−738,786	−27,596	1,615,408
Other operating liabilities	375,272	−18,054	357,218	–	–	357,218
	3,025,287	**−138,028**	**2,887,259**	**−743,996**	**−28,296**	**3,659,551**

Netting of financial assets at 30 September 2017

Euro 000s	Gross amount of financial assets reported	Gross amount of financial liabilities reported that are netted in balance sheet	Net amount of financial assets reported in balance sheet	Related amounts not netted in balance sheet: Financial instruments	Related amounts not netted in balance sheet: Cash collateral received	Net amount
Loans excluding finance leases	12,266	–	12,266	–	–	12,266
Securities	7	–	7	–	–	7
Trade receivables < 1 year	528,014	−190,140	337,874	–	–	337,874
Derivative financial instruments	431,569	–	431,569	−145,320	−16,534	269,715
Other operating assets	101,448	–	101,448	–	–	101,448
Cash and cash equivalents	370,301	–	370,301	−12,620	–	357,681
	1,443,605	**−190,140**	**1,253,465**	**−157,940**	**−16,534**	**1,078,991**

Netting of financial liabilities at 30 September 2017

Euro 000s	Gross amount of financial liabilities reported	Gross amount of financial assets reported that are netted in balance sheet	Net amount of financial liabilities reported in balance sheet	Related amounts not netted in balance sheet: Financial instruments	Related amounts not netted in balance sheet: Cash collateral received	Net amount
Financial debt	1,401,738	–	1,401,738	−5,684	−594	1,408,016
Trade payables < 1 year	506,599	−155,420	351,179	–	–	351,179
Derivative financial instruments	386,694	–	386,694	−145,320	−13,356	545,370
Other operating liabilities	506,663	−34,720	471,943	–	–	471,943
	2,801,694	**−190,140**	**2,611,554**	**−151,004**	**−13,950**	**2,776,508**

Net results by measurement category

Financial instruments have been recognised in the income statement with the following net results pursuant to IFRS 7:

Net results (IFRS 7)

Euro 000s	**FY 2018**	FY 2017
Financial assets and financial liabilities held for trading	33,468	41,954
Financial assets available for sale	868	1,433
Loans and receivables	−5,385	−14,887

The presentation of net results takes due account of stand-alone derivatives included in the “financial assets and financial liabilities held for trading” measurement category. The net result in the “financial assets and financial liabilities held for trading” category is largely attributable to fair value measurement pursuant to IAS 39.

The net result in the “financial assets available for sale” category chiefly involves income and distributions from shareholdings, as well as disposal gains.

The net results in the “loans and receivables” category predominantly relate to write-downs and additions.

The interest income and interest expenses in connection with financial assets and financial liabilities measured at cost chiefly result from the total interest income and expenses presented below.

Total interest income and expenses

Euro 000s	**FY 2018**	FY 2017
Total interest income	8,392	8,980
Total interest expenses	41,735	47,222

The financial result also includes interest components for provisions not covered by IFRS 7 disclosure requirements, as a result of which the figures published here differ from the financial result. The interest income reported here mainly results from credit balances at banks, overnight and fixed-term deposits, and loans. The interest expenses largely relate to loan obligations. As in the previous year, total interest income does not include interest on financial assets already impaired.

Financing and price risks

General information about financing and price risks: Due to its business activities, MVV is exposed to various financial risks. These comprise receivables default and liquidity risks, interest and exchange rate risks and market price risks on both procurement and sales markets. MVV’s risk management pursues the objective of identifying developments on financial markets at an early stage and of countering any resultant negative implications. This is stipulated in internal guidelines, discretionary frameworks, responsibilities, separations of functions and checks.

Derivative financial instruments are used to cover against market price risk. For interest rate risks, these mainly involve interest swaps. Currency risks are hedged by concluding forward currency transactions. Commodity derivatives are deployed in the field of energy trading. The use of commodity derivatives for proprietary energy trading is only permitted within narrow limits and is monitored and managed with a separate limit system.

Receivables default risks: The risk of economic loss arising as a result of a business partner failing to meet its contractual payment obligations is referred to as receivables default risk. This encompasses both the risk of direct default and the risk of reduced creditworthiness. In its trading activities, MVV maintains its business relationships predominantly with banks and other trading partners of good credit standing.

Receivables default risks towards contractual partners are inspected upon conclusion of the contract and monitored continuously. This risk is limited by setting trading limits for transactions with business partners and, where appropriate, by demanding cash collateral. Where possible, default risk is already reduced in advance by means of suitable framework agreements with trading partners. Risk clusters only apply to an immaterial extent at various subsidiaries that have sales contracts with just one customer.

MVV is exposed to receivables default risks in its sales business, as customers may potentially fail to meet their payment obligations. This risk is limited by regularly inspecting the creditworthiness of major items in our customer portfolio.

In the carrying amounts recognised in the balance sheet for financial assets (receivables, derivatives and other assets, as well as cash and cash equivalents and assets held for sale), default risks have already been recognised in the form of impairments. The volume of receivables defaults was immaterial both in the year under report and the previous year.

As derivatives may be subject to substantial fluctuations in their fair values, the counterparty risk of derivative financial assets has been presented in the following overview. Only recognised accounts have been included. Where netting agreements are in place with a trading partner, the actual risk, i.e. the net risk, has been presented. No account has been taken of counterparties with negative balances, i.e. where there is no counterparty risk. In all other cases, the figures have not been netted against negative fair values.

Counterparty risk at 30 September 2018

Euro 000s	**Total**		**of which < 1 year**		**of which 1 to 5 years**	
Counterparty rating as per Standard & Poor's and/or Moody's	**Nominal value**	**Counterparty risk**	**Nominal value**	**Counterparty risk**	**Nominal value**	**Counterparty risk**
AAA and Aaa to AA– and Aa3	308,847	112,939	220,000	81,704	88,847	31,235
A+ and A1 to A– and A3	212,626	119,824	132,261	69,891	80,365	49,933
BBB+ and Baa1 to BBB– and Baa3	115,144	31,477	84,293	23,320	30,851	8,157
BB+ and Ba1 to BB– and Ba3	9,790	3,943	5,113	2,665	4,677	1,278
Other	1,744,237	759,176	1,204,832	552,393	539,405	206,783
	2,390,644	**1,027,359**	**1,646,499**	**729,973**	**744,145**	**297,386**

Counterparty risk at 30 September 2017

Euro 000s	Total		of which < 1 year		of which 1 to 5 years	
Counterparty rating as per Standard & Poor's and/or Moody's	Nominal value	Counterparty risk	Nominal value	Counterparty risk	Nominal value	Counterparty risk
AAA and Aaa to AA– and Aa3	318,607	69,106	86,958	33,162	231,649	35,944
A+ and A1 to A– and A3	44,951	9,338	14,207	4,038	30,744	5,300
BBB+ and Baa1 to BBB– and Baa3	274,579	60,773	108,450	33,786	166,129	26,987
BB+ and Ba1 to BB– and Ba3	–	–	–	–	–	–
Other	923,782	186,162	277,162	79,680	646,620	106,482
	1,561,919	**325,379**	**486,777**	**150,666**	**1,075,142**	**174,713**

As in the previous year, there are no receivables default risks with terms longer than five years. Major shares of the nominal derivative volumes in question involve trading partners for which external ratings are available. Internal ratings are available for the nominal derivative volumes reported under "Other".

For trading transactions concluded with stock exchanges, security payments are deposited in order to reduce any additional receivables default risks.

The receivables default risks involved in financial assets and their maturities broken down by category are structured as follows:

Receivables default risks and maturities at 30 September 2018

Euro 000s	**Loans**	**Trade receivables < 1 year**	**Other operating assets**
Neither overdue nor impaired	60,412	297,158	41,493
Overdue but not impaired			
≤ 6 months	–	34,001	197
> 6 months ≤ 1 year	–	4,500	–
> 1 year	–	8,809	50
Net value of assets written down	–	37,261	1,514
	60,412	**381,729**	**43,254**

Receivables default risks and maturities at 30 September 2017

Euro 000s	Loans	Trade receivables < 1 year	Other operating assets
Neither overdue nor impaired	62,178	264,245	45,949
Overdue but not impaired			
≤ 6 months	–	39,290	928
> 6 months ≤ 1 year	–	7,499	74
> 1 year	–	4,314	1,618
Net value of assets written down	–	35,756	1,752
	62,178	**351,104**	**50,321**

Liquidity risks: Liquidity risk involves the risk of a company being unable to meet its financial obligations adequately. MVV is subject to liquidity risks as a result of its obligation to meet its liabilities in full and on time, as well as its obligation to service security payments (margins) from energy trading partners. Cash and liquidity management at MVV is responsible for maintaining the company's solvency at all times. This involves calculating all cash requirements and all cash surpluses. The major subgroups have a cash pooling process which enables liquidity requirements and surpluses to be balanced at short notice, thus reducing bank transactions to a necessary minimum.

A financial budget is compiled for liquidity management purposes. Any financing requirements arising are covered by means of suitable liquidity management instruments. Alongside the liquidity available on a daily basis, MVV has further liquidity reserves in the form of committed credit lines. The volume of contractually committed credit lines is structured in such a way as to ensure that the Group has adequate liquidity reserves available at all times, even in a difficult market climate. In view of its available liquidity and existing credit lines, MVV does not see itself as being exposed to any material liquidity risks.

Covenants customary to the industry have been agreed with some of the financing banks. These entitle the banks to terminate the facilities in the event of any material deterioration in the company's asset, financial and earnings position. All covenants had been complied with as of the balance sheet date on 30 September 2018.

MVV's group companies are generally financed by banks and by MVV Energie AG.

Items of security have been provided to banks to limit their risks in connection with loans granted to MVV. These are subdivided into non-current assets, receivables and cash and cash equivalents with a total amount of Euro 11,576 thousand (previous year: Euro 9,776 thousand) and interests in subsidiaries amounting to Euro 3,337 thousand (previous year: Euro 14,045 thousand).

Contractually agreed outflows of funds for financial liabilities are presented in undiscounted form in the table below. The figures include the corresponding interest payments.

Undiscounted cash flows

Euro 000s	**30 September 2018** Maturities < 1 year	**30 September 2018** Maturities 1–5 years	**30 September 2018** Maturities > 5 years	30 September 2017 Maturities < 1 year	30 September 2017 Maturities 1–5 years	30 September 2017 Maturities > 5 years
Non-derivative financial liabilities						
Liabilities to banks	244,899	564,047	678,077	169,907	677,853	697,408
Liabilities in connection with finance leases	5,571	21,295	40,958	5,970	19,844	45,643
Trade payables	340,256	816	2,796	351,179	421	26
Other financial debt	7,455	13,616	11,224	8,456	17,313	15,835
Other financial liabilities	148,460	7,569	15,629	69,792	4,369	6,063
Derivative financial liabilities	573,261	180,666	27	237,412	121,211	39
	1,319,902	**788,009**	**748,711**	**842,716**	**841,011**	**765,014**

Interest rate risk: Interest rate risks relate to credit balances at banks on the asset side and to floating-rate liabilities to banks on the liabilities side of the balance sheet.

The sensitivity analysis below presents the impact of changes in interest rates on annual earnings and equity. This analysis has been based on the assumption that there are no changes in any other parameters, such as exchange rates. The analysis only includes financial instruments where interest rate risk could impact on equity or annual earnings. For the calculation, we have assumed that interest rates are 10 % higher or lower throughout the financial year.

Any upward or downward variance in the level of interest rates in the euro area by 10 % as of the balance sheet date on 30 September 2018 would have led annual net income to deteriorate/improve by a total of Euro 0 thousand/Euro 0 thousand (previous year: Euro 0 thousand/Euro 0 thousand). This variance would have reduced/increased equity by a total of Euro 1,264 thousand/Euro 1,972 thousand (previous year: Euro 944 thousand/Euro 1,281 thousand).

Foreign currency risks: Foreign currency risks mainly relate to our UK projects. During the operating stage of the projects, cash flows are generated exclusively in British pounds. The resultant foreign currency risks are hedged by natural hedges in the form of currency-congruent financing and by using derivative financial instruments, which means that no material risk arises for MVV in this respect. In view of this, no disclosures of foreign currency risks have been provided.

Commodity price risks: Within the framework of our energy trading activities, energy trading contracts are concluded for the purposes of price risk management, adjustments to actual loads and margin optimisation. All transactions are governed by narrow, clearly defined limits which have to be adhered to at all times.

Price change risks chiefly arise in connection with the procurement and disposal of electricity and gas and the procurement of coal and emission rights. These price risks are hedged with suitable financial instruments by reference to the stipulated limits. Derivative hedging instruments were used in the year under report. The hedging instruments used mainly involved forwards, futures, swaps and options. We have set specific and differentiated limits and warning thresholds for the market risks associated with the commodities we trade. In this context, we also work with the value at risk (VaR) concept to calculate potential losses from commodities trading and use a confidence interval of 95 % for this purpose.

The sensitivity involved in the measurement of electricity, coal, gas and emission right derivatives is analysed in the following section. This analysis has been based on the assumption that there are no changes in all other parameters and that there is mutual dependency between the commodities. The analysis only includes derivatives for which fluctuations in market values could impact on equity or annual earnings. These involve derivatives requiring mandatory recognition. The analysis does not include derivatives earmarked for the physical delivery of non-financial items in line with the company's expected procurement, sale or utilisation (own use). These do not require recognition under IAS 39.

If the market price at the balance sheet date on 30 September 2018 had been 10 % higher/lower, this would have increased/decreased annual net income by Euro 19,140 thousand/Euro 19,724 thousand (previous year: Euro 8,808 thousand/Euro 8,856 thousand). Equity as of the same reporting date would have increased/decreased by Euro 27,596 thousand/Euro 27,770 thousand (previous year: Euro 15,753 thousand/Euro 15,801 thousand).

The following table presents the nominal volumes and fair values of the derivatives used:

Nominal volumes and fair values

	30 September 2018			30 September 2017		
	Nominal volumes		**Fair values**	Nominal volumes		Fair values
Euro 000s	**Total**	**of which with remaining terms of more than 1 year**		Total	of which with remaining terms of more than 1 year	
Interest derivatives	535,831	510,228	−19,116	447,890	337,856	−29,764
Commodity derivatives	4,679,378	1,398,691	128,312	3,900,442	953,409	74,231
Currency derivatives	16,725	1,423	−990	20,954	57	408
	5,231,934	**1,910,342**	**108,206**	**4,369,286**	**1,291,322**	**44,875**

Interest derivatives relate almost exclusively to interest swaps. Currency derivatives are mainly intended to hedge foreign exchange risks.

Commodity derivatives can be subdivided as follows:

Commodity derivatives

Euro 000s	**30 September 2018** Nominal volumes	**30 September 2018** Fair values	30 September 2017 Nominal volumes	30 September 2017 Fair values
Commodity derivatives				
Electricity	2,837,379	32,912	2,581,052	46,194
Coal	38,678	35,160	25,472	19,313
Gas	1,643,190	7,895	1,242,506	4,051
CO_2 rights	160,014	51,766	50,675	5,083
Other	1,499	579	737	−411
	4,680,760	**128,312**	**3,900,442**	**74,230**
Commodity derivatives				
Futures	4,641,273	93,822	3,874,293	54,687
Swaps	39,487	34,490	25,472	19,313
Options	–	–	677	230
	4,680,760	**128,312**	**3,900,442**	**74,230**

The positive fair values amounting to Euro 957,231 thousand (previous year: Euro 431,569 thousand) are countered by margining liabilities of Euro 77,258 thousand (previous year: Euro 3,304 thousand). These are reported under other liabilities. The negative fair values of Euro 849,025 thousand (previous year: Euro 386,694 thousand) are countered by cash collateral of Euro 194 thousand (previous year: Euro 126 thousand).

Capital management

MVV Energie AG is not subject to any statutory minimum capital requirements, but pursues its internal objective of using effective financial management to maintain its equity ratio at a level necessary to attain a good implicit rating on the financial market and to boost the company's earnings strength.

The adjusted equity ratio referred to for management purposes represents adjusted consolidated equity as a proportion of adjusted total assets. Adjusted equity consists of all equity items reported in the consolidated financial statements, including non-controlling and minority interests, but excluding non-operating IAS 39 derivative measurement items and the associated impact on deferred taxes. It is intended to maintain an adjusted equity ratio of at least 30 %.

Measures to comply with the targeted equity ratio initially take place within the business planning process and within the framework of investment budgeting in the case of major (unplanned) investment measures. By retaining earnings and issuing shares, the company can basically adjust its equity base to requirements.

The key figure used in our value-based corporate management and the capital management thereby required is the value spread. This key figure is calculated as the difference between the period-based adjusted return on capital employed (adjusted ROCE) and the weighted average cost of capital (WACC).

There were no changes in the underlying capital management requirements compared with the previous year.

36. Segment reporting

MVV adjusted its segment reporting as of 1 October 2017. The reporting now reflects the consistent alignment of our sales activities to the needs of our customers. The new structure also accounts for the growing importance of our business activities in the fields of renewable energies and energy efficiency, as well as our consistent and sustainable focus on ensuring high supply reliability.

The following overview presents segment reporting based on the previous reporting structure for the period from 1 October 2016 to 30 September 2017:

Segment report from 1 October 2016 to 30 September 2017

Euro 000s	External sales excl. energy taxes	Intercompany sales excl. energy taxes	Scheduled depreciation	Impairment losses
Generation and Infrastructure	937,032	667,080	138,273	1,794
Trading and Portfolio Management	790,153	611,758	67	–
Sales and Services	2,175,306	447,619	15,937	771
Strategic Investments	103,937	3,646	11,207	–
Other Activities	3,088	25,632	14,699	–
Consolidation	–	–1,755,735	–	–
	4,009,516	**–**	**180,183**	**2,565**

Euro 000s	Material non-cash income and expenses	Adjusted EBIT	Income from companies recognised at equity	Investments
Generation and Infrastructure	3,654	183,246	7,074	149,608
Trading and Portfolio Management	2,781	–21,445	–862	–
Sales and Services	12,910	36,190	–4,668	24,786
Strategic Investments	1,110	24,192	9,842	6,983
Other Activities	4,063	2,158	556	12,087
Consolidation	–	51	–	–
	24,518	**224,392**	**11,942**	**193,464**

The segment reporting based on the new reporting structure is presented below for the current financial year and for the previous year:

Segment report from 1 October 2017 to 30 September 2018

Euro 000s	**External sales excl. energy taxes**	**Intercompany sales excl. energy taxes**	**Scheduled depreciation**	**Impairment losses**
Customer Solutions	2,819,400	148,373	14,812	9,364
New Energies	737,658	106,737	76,160	24,201
Supply Reliability	256,129	612,471	64,547	–
Strategic Investments	87,198	2,608	11,263	141
Other Activities	2,375	24,017	13,898	–
Consolidation	–	−894,206	–	–
	3,902,760	**–**	**180,680**	**33,706**

Euro 000s	**Material non-cash income and expenses**	**Adjusted EBIT**	**Income from companies recognised at equity**	**Investments**
Customer Solutions	6,488	46,657	−1,915	29,542
New Energies	3,040	89,596	4,159	81,244
Supply Reliability	14,213	62,545	−11,549	156,772
Strategic Investments	2,198	25,357	9,183	10,525
Other Activities	1,529	3,776	12	11,495
Consolidation	–	–	–	–
	27,468	**227,931**	**−110**	**289,578**

Segment report from 1 October 2016 to 30 September 2017 (previous year adjusted)

Euro 000s	External sales excl. energy taxes	Intercompany sales excl. energy taxes	Scheduled depreciation	Impairment losses
Customer Solutions	2,965,173	177,230	15,940	771
New Energies	670,245	94,897	72,237	1,794
Supply Reliability	267,073	672,085	66,100	–
Strategic Investments	103,937	3,646	11,207	–
Other Activities	3,088	25,632	14,699	–
Consolidation	–	−973,490	–	–
	4,009,516	**–**	**180,183**	**2,565**

Euro 000s	Material non-cash income and expenses	Adjusted EBIT	Income from companies recognised at equity	Investments
Customer Solutions	14,803	42,478	−4,668	24,786
New Energies	−241	87,047	3,420	20,952
Supply Reliability	3,067	68,466	2,792	128,656
Strategic Investments	–	24,192	9,842	6,983
Other Activities	6,889	2,158	556	12,087
Consolidation	–	51	–	–
	24,518	**224,392**	**11,942**	**193,464**

External reporting is based on the internal management structure, thus complying with the management approach pursuant to IFRS 8. Units are grouped in such a way that the pooling of suitable specialist competence under one roof forms the basis for stringent portfolio management at the Group. Business fields based on the respective energy industry value chain stages have been allocated to the reporting segments of Customer Solutions, New Energies, Supply Reliability, Strategic Investments and Other Activities. The characteristics used to identify and aggregate the segments relate to the type of products and services, the type of production processes, the asset and capital intensity, customer structures and needs, the sales methods used and, where applicable, the regulatory framework.

Analytically, the business fields can be further broken down by subgroup and individual company with their products.

- The **Customer Solutions** reporting segment is subdivided into the business fields of commodities, retail and business. It comprises the retail and secondary distribution business with electricity, heating energy, gas and water, the solutions business for corporate customers and the service and trading business at MVV Trading GmbH.

  The key focus of aggregation for these business fields relates to the service business and to customer needs. The customer is the key focus of the business, use is made of comparable services methods, activities and marketing processes for the customers are pooled and almost exclusively target external customers (e.g. sales to third parties).

- The energy from waste plants, biomass power plants, wind turbines, biomethane and biogas plants are allocated to the **New Energies** reporting segment. This reporting segment also includes the renewable energies project development and operations management activities.

  The business fields aggregated in this segment focus on providing services, solutions and products in connection with renewable energies. The activities within this reporting segment involve the planning, approval, development, construction and operation of technical plants to generate electricity and heating energy from sustainable/partly sustainable commodities such as wind, waste timber, non-recyclable forest timber, green cuttings, waste/RDF, biogas and sunshine. The processes are characterised by long planning, approval, construction and operating stages.

- In additional to conventional energy generation, the **Supply Reliability** reporting segment also includes grid facilities for electricity, heating energy, gas and water. It comprises combined heat and power generation, grid facilities and further facilities required to provide our customers with a secure supply of electricity, heating energy, gas and water.

  The business fields aggregated in this segment serve to provide customers with a reliable and stable supply of various products. All facilities are characterised by high asset intensity, long technical lifecycles and long-term financing structures.

- The **Strategic Investments** reporting segment consists of the Köthen Energie and MVV Energie CZ subgroups and the at-equity results of select shareholdings in municipal utility companies.

- The **Other Activities** reporting segment consists in particular of the shared service companies and cross-divisional functions.

- Consolidation includes figures for transactions with other reporting segments that are eliminated for consolidation purposes.

Intercompany sales represent the volume of sales between segments. The transfer prices between segments correspond to customary market terms. Segment sales prior to consolidation are equivalent to the total of intercompany and external sales.

The segment reporting presented in accordance with IFRS 8 is based on the internal management structure. This is mainly reflected in segment earnings (adjusted EBIT) and investments. The reconciliation of EBIT with adjusted EBIT is presented in the table opposite. In the management perspective, the concept of investments includes both the additions apparent in the respective schedules and the change in non-current assets from first-time consolidation. By contrast, additions to securities and loans do not form part of the investment concept in the management perspective and have therefore been excluded.

Consistent with the management approach, the earnings stated for the reporting segments include internal transfer relationships between the reporting segments (charges and credits). The distribution of reporting segment earnings presented in the "adjusted EBIT" column corresponds to the distribution of earnings referred to in internal reporting. In some cases, this means that items are charged or credited to earnings in other business fields, and thus in other reporting segments, than the field or segment in which the item responsible for such charge or credit is located. This applies to business fields fully or partly managed on the basis of cost centre logic (shared services and cross-divisional functions). Furthermore, when it comes to the generation of district heating the primary costs are incurred in operative terms in the Supply Reliability and New Energies reporting segments. These are charged to Customer Solutions. The latter reporting segment reimburses Supply Reliability and New Energies with a prorated return on their capital employed.

Segmentation is performed in the same way for all segments through to adjusted EBIT. The table below presents the reconciliation of earnings before interest and taxes (EBIT) with adjusted EBIT:

Reconciliation of EBIT (income statement) with adjusted EBIT

Euro 000s	**1 Oct 2017 to 30 Sep 2018**	1 Oct 2016 to 30 Sep 2017	+/– change
EBIT as per income statement	256,794	259,511	−2,717
Financial derivative measurement items	−31,591	−38,900	7,309
Structural adjustment for part-time early retirement	309	543	−234
Restructuring result	−821	–	−821
Interest income in connection with finance leases	3,240	3,238	2
Adjusted EBIT	**227,931**	**224,392**	**3,539**

Of segment sales with external customers, 94.7 % were generated in Germany (previous year: 94.3 %). The regional breakdown of sales is based on the geographical location of the respective companies.

No individual customers of MVV account for or exceed 10 % of total sales.

37. Cash flow statement

The cash flow statement shows the flow of funds from operating activities, investing activities and financing activities. The cash flows from investing and financing activities are calculated directly. The cash flow from operating activities, on the other hand, has been derived indirectly. The amount of cash and cash equivalents stated in the cash flow statement is consistent with the corresponding figure in the balance sheet.

Inflows and outflows of funds from the acquisition and disposal of consolidated companies are included in the cash flow from investing activities.

Following the elimination of non-cash income and expenses and the non-operating result, the slight increase in earnings before taxes (EBT) led to a **cash flow before working capital and taxes** of Euro 450 million.

The year-on-year reduction in the **cash flow from operating activities** by Euro 142 million was due to a lower inflow of funds from changes in other assets and other liabilities. The largest items related to a more marked increase in receivables, the change in prepayments received on orders for projects due to be implemented and the sharp fall in inventories. To enhance the presentation of the change in other assets and other liabilities, since the 2nd quarter of the 2018 financial year non-cash IAS 39 derivative measurement items have no longer been presented in the aforementioned line items. The previous year's figures have been adjusted accordingly.

The development in the **cash flow from investing activities** was shaped by higher payments for investments – in particular for the construction of a new heat and power plant in the Scottish city of Dundee in conjunction with the takeover of a disposal contract and for the new coastal power plant Küstenkraftwerk K.I.E.L. The high volume of proceeds from the sale of other financial assets in the previous year's period, which was not matched by any equivalent items in the current financial year, additionally reduced the cash flow from investing activities compared with the previous year's figure. These factors were opposed above all by the inflow of funds generated from sales of non-current assets. Overall, the cash flow from investing activities decreased year-on-year by Euro 47 million.

The **cash flow from financing activities** rose by Euro 92 million compared with the 2017 financial year, a development largely due to higher net borrowing.

MVV reported **cash and cash equivalents** of Euro 311 million as of 30 September 2018 (30 September 2017: Euro 370 million).

The reconciliation of liabilities in connection with financing activities, a new requirement of the IAS 7 Disclosure Initiative, is summarised in the following overview:

Liabilities in connection with financing activities

Euro 000s	30 Sep 2017	Cash-effective changes	Non-cash-effective changes: Change in scope of consolidation	Non-cash-effective changes: Changes in exchange rates	Non-cash-effective changes: Fair value changes	**30 Sep 2018**
Liabilities to banks	1,361,877	−51,434	–	−1,409	–	1,309,034
Liabilities in connection with finance leases	45,902	−665	–	–	–	45,237
Other financial debt	39,861	−8,248	115	−3	–	31,725
	1,447,640	**−60,347**	**115**	**−1,412**	**–**	**1,385,996**

38. Related party disclosures

Business transactions performed between the parent company and its consolidated subsidiaries, which constitute related parties, are not outlined in this section, as they were eliminated in the course of consolidation.

The City of Mannheim is the sole shareholder in MKB Mannheimer Kommunalbeteiligungen GmbH (previously: MVV GmbH). MKB Mannheimer Kommunalbeteiligungen GmbH owns 99.99 % of the shares in MV Mannheimer Verkehr GmbH (previously: MVV Verkehr GmbH), which in turn has a 50.1 % shareholding in MVV Energie AG. The City of Mannheim and the companies it controls therefore represent related parties as defined in IFRS.

Numerous contractually agreed legal relationships are in place between the MVV companies and the City of Mannheim and the companies it controls (electricity, gas, water and district heating supply agreements, rental, leasing and service agreements). Moreover, concession agreements are also in place between MVV Energie AG and the City of Mannheim.

The concession duties to the City of Mannheim amounted to Euro 18,314 thousand (previous year: Euro 19,040 thousand).

All business agreements have been concluded on customary market terms and are basically analogous to the supply and service agreements concluded with other companies.

Related party disclosures

	Goods and services provided				Receivables		Liabilities	
	Income		Expenses					
Euro 000s	**1 Oct 2017 to 30 Sep 2018**	1 Oct 2016 to 30 Sep 2017	**1 Oct 2017 to 30 Sep 2018**	1 Oct 2016 to 30 Sep 2017	**30 Sep 2018**	30 Sep 2017	**30 Sep 2018**	30 Sep 2017
City of Mannheim	14,910	13,956	23,599	23,518	938	331	5,276	9,857
Abfallwirtschaft Mannheim	7,593	6,385	1,617	877	1,243	1,297	403	149
GBG Mannheimer Wohnungsbaugesellschaft mbH	12,625	13,473	166	145	841	117	–	12
m:con – mannheim: congress GmbH	4,022	3,952	419	425	6,540	6,764	–	1
MKB Mannheimer Kommunalbeteiligungen GmbH (previously: MVV GmbH)	63	68	60	–	–	1	–	–
MV Mannheimer Verkehr GmbH (previously: MVV Verkehr GmbH)	29	34	6	5	–	5	–	–
Rhein-Neckar-Verkehr GmbH	6,532	6,324	1,371	76	1,208	2,735	1,552	1,724
Stadtentwässerung Mannheim	1,545	1,410	414	429	74	78	–	11
Companies recognised at equity	74,205	80,514	229,239	231,561	21,568	16,437	35,942	21,405
Other related parties	25,854	23,972	3,490	4,666	5,085	4,587	1,513	1,930
	147,378	**150,088**	**260,381**	**261,702**	**37,497**	**32,352**	**44,686**	**35,089**

The income and expenses with related parties include income of Euro 31 thousand (previous year: Euro 26 thousand) and expenses of Euro 374 thousand (previous year: Euro 395 thousand) for goods and services provided to management staff performing key functions.

Pursuant to IAS 24, related parties also include management staff performing key functions. Alongside the Executive Board, this group of persons at MVV also includes active heads of division and authorised company representatives of MVV Energie AG.

Customer contracts concerning the supply of electricity, gas, water and district heating have been concluded between MVV Energie AG and members of its Executive and Supervisory Boards and members of the management (division heads, authorised representatives). These have been concluded on customary market terms and do not differ from other customer contracts.

MVV has otherwise not concluded or performed any material related party transactions. In particular, as in the previous year no loans or advances had been granted to members of the Executive or Supervisory Boards as of 30 September 2018. As in the previous year, the company also did not issue any guarantees on behalf of Executive or Supervisory Board members.

MVV Energie AG has compiled a dependent company report in accordance with § 312 AktG for the financial year ending on 30 September 2018.

The disclosure requirements for the compensation of management staff performing key functions at the Group cover the compensation paid to active members of the Executive Board, the Supervisory Board, active division heads and authorised representatives.

Active members of the Executive Board members were compensated as follows:

Executive Board compensation

Euro 000s	**FY 2018**	FY 2017
Short-term employee benefits	2,209	2,318
Post-employment benefits	–	737
Total	**2,209**	**3,055**

The Executive Board members of MVV Energie AG do not receive any share-based payments.

Post-employment benefits correspond to the service cost resulting from pension provisions for active members of the Executive Board.

The compensation paid to active division heads and authorised representatives came to Euro 2,439 thousand in the year under report (previous year: Euro 2,928 thousand). Of this total, Euro 2,332 thousand involved current benefits (previous year: Euro 2,801 thousand).

Unless they are insured via municipal supplementary pension companies (ZVKs), management staff performing key functions receive a defined contribution company pension of up to 8.6 % of their fixed basic compensation. They can determine the biometric risks which should be covered. The expenses incurred for this amounted to Euro 107 thousand in the 2018 financial year (previous year: Euro 127 thousand).

Active members of the Supervisory Board were compensated as follows:

Supervisory Board compensation

Euro 000s	**FY 2018**	FY 2017
Fixed compensation (including meeting allowances)	412	410

Individualised information and further details concerning the compensation of Executive and Supervisory Board members can be found in the audited Compensation Report, which forms part of the Combined Management Report.

Former members of the Executive Board received benefits of Euro 513 thousand in the year under report (previous year: Euro 468 thousand). Provisions totalling Euro 16,758 thousand have been stated for pension obligations towards former Executive Board members (previous year: Euro 16,784 thousand). A total of Euro 336 thousand was allocated to this item in the year under report (previous year: Euro 275 thousand).

39. MVV's shareholdings

List of MVV's shareholdings at 30 September 2018

	Town/city	Country	Share of capital [1] %	Footnote
Fully consolidated subsidiaries				
Associates (Germany)				
ABeG Abwasserbetriebsgesellschaft mbH	Offenbach am Main	Germany	51.00	
AVA Abwasser- und Verwertungsanlagen GmbH	Mörfelden-Walldorf	Germany	100.00	4
BEEGY GmbH	Mannheim	Germany	100.00	
BEG Gernsbacher Höhe UG (haftungsbeschränkt) & Co. KG	Mainz	Germany	0.00	5
BEG Haunetal UG (haftungsbeschränkt) & Co. KG	Gundersheim	Germany	0.00	5
BFE Institut für Energie und Umwelt GmbH	Mühlhausen	Germany	100.00	4
Biokraft Naturbrennstoffe GmbH	Offenbach am Main	Germany	100.00	
Biomethananlage Barby GmbH	Mannheim	Germany	100.00	
Biomethananlage Klein Wanzleben GmbH	Mannheim	Germany	100.00	
Biomethananlage Kroppenstedt GmbH	Mannheim	Germany	100.00	
Biomethananlage Staßfurt GmbH	Mannheim	Germany	100.00	
Cerventus Naturenergie GmbH	Offenbach am Main	Germany	50.00	
Cerventus Naturenergie Verwaltungs GmbH	Offenbach am Main	Germany	100.00	
Dabit Grundstücksverwaltungsgesellschaft mbH & Co. Vermietungs KG	Mainz	Germany	94.00	
econ solutions GmbH	Germering (domicile: Mannheim)	Germany	100.00	
Energienetze Offenbach GmbH	Offenbach am Main	Germany	100.00	4
Energieversorgung Dietzenbach GmbH	Dietzenbach	Germany	50.00	
Energieversorgung Offenbach Aktiengesellschaft	Offenbach am Main	Germany	48.42	2
eternegy GmbH	Mannheim	Germany	100.00	
EVO Vertrieb GmbH	Offenbach am Main	Germany	100.00	
FRASSUR GmbH Umweltschutz-Dienstleistungen	Mörfelden-Walldorf	Germany	100.00	
Gasversorgung Offenbach GmbH	Offenbach am Main	Germany	74.90	
Götzfried + Pitzer Entsorgung GmbH	Ulm	Germany	100.00	
IGS Netze GmbH	Gersthofen	Germany	100.00	4
Infrastruktur Amöneburg-Roßdorf GmbH & Co. KG	Wörrstadt	Germany	28.56	6
Infrastruktur Callbach GmbH & Co. KG	Wörrstadt	Germany	71.40	
Infrastruktur Fahlenberg GmbH & Co. KG	Wörrstadt	Germany	50.00	
Infrastruktur Oberheimbach II GmbH & Co. KG	Wörrstadt	Germany	72.00	
Infrastruktur Waldweiler GmbH & Co. KG	Wörrstadt	Germany	60.40	
Infrastrukturgesellschaft Hungerberg GmbH & Co. KG	Offenbach am Main	Germany	100.00	
Infrastrukturgesellschaft Schmölln GmbH & Co. KG	Wörrstadt	Germany	41.32	
Infrastrukturgesellschaft Veldenz GmbH & Co. KG	Wörrstadt	Germany	61.86	
juwi AG	Wörrstadt	Germany	63.12	
juwi Bio Germany 19 GmbH & Co. KG	Wörrstadt	Germany	100.00	
juwi Bio Service & Betriebs GmbH	Wörrstadt	Germany	100.00	
juwi Green Energy GmbH	Wörrstadt	Germany	100.00	4
juwi Operations & Maintenance GmbH	Wörrstadt	Germany	100.00	4
juwi Verwaltungs GmbH	Wörrstadt	Germany	100.00	
juwi Wind Germany 135 GmbH & Co. KG	Wörrstadt	Germany	88.00	
juwi Wind Germany 162 GmbH & Co. KG	Wörrstadt	Germany	80.00	
juwi Wind Germany 33 GmbH & Co. KG	Wörrstadt	Germany	100.00	

List of MVV's shareholdings at 30 September 2018

	Town/city	Country	Share of capital [1] %	Footnote
juwi Wind Germany 70 GmbH & Co. KG	Wörrstadt	Germany	100.00	
juwi Wind Germany Verwaltungs GmbH	Wörrstadt	Germany	100.00	
Köthen Energie GmbH	Köthen	Germany	100.00	
MDW Muldendienst West GmbH	Frankfurt am Main	Germany	100.00	
MVV Alpha fünfzehn GmbH	Mannheim	Germany	100.00	4
MVV Biogas Bernburg GmbH	Mannheim (domicile: Bernburg/Saale)	Germany	90.00	5
MVV Biogas Dresden GmbH (previously: KOMPOTEC Dresden GmbH)	Mannheim (domicile: Dresden)	Germany	100.00	5
MVV decon GmbH	Mannheim	Germany	100.00	
MVV Enamic GmbH	Mannheim	Germany	100.00	4
MVV Enamic Korbach GmbH	Korbach	Germany	100.00	4
MVV Enamic Ludwigshafen GmbH	Mannheim	Germany	100.00	
MVV Enamic Naturenergie GmbH	Mannheim	Germany	100.00	
MVV EnergySolutions GmbH	Mannheim	Germany	100.00	4
MVV Grünenergie GmbH	Mannheim	Germany	100.00	4
MVV ImmoSolutions GmbH	Berlin	Germany	100.00	4
MVV Industriepark Gersthofen GmbH	Gersthofen	Germany	100.00	4
MVV Netze GmbH	Mannheim	Germany	100.00	4
MVV RHE GmbH	Mannheim	Germany	100.00	4
MVV Trading GmbH	Mannheim	Germany	97.50	4
MVV Umwelt Asset GmbH	Mannheim	Germany	100.00	4
MVV Umwelt GmbH	Mannheim	Germany	100.00	4
MVV Umwelt Ressourcen GmbH	Mannheim	Germany	100.00	4
MVV Umwelt UK GmbH	Mannheim	Germany	100.00	4
MVV Windenergie Deutschland GmbH	Mannheim	Germany	100.00	
MVV Windenergie GmbH	Mannheim	Germany	100.00	4
MVV Windpark Freudenberg GmbH	Mannheim	Germany	100.00	
MVV Windpark Plauerhagen GmbH & Co. KG	Ostseebad Rerik	Germany	100.00	
Netzgesellschaft Köthen mbH	Köthen	Germany	100.00	4, 6
New Breeze GmbH	Wörrstadt	Germany	100.00	
New Breeze GmbH & Co. GreenPower 44 KG	Wörrstadt	Germany	100.00	
Soluvia Billing GmbH	Offenbach am Main	Germany	100.00	4
Soluvia GmbH	Mannheim	Germany	100.00	
Soluvia IT-Services GmbH	Kiel	Germany	100.00	4
Soluvia Metering GmbH	Offenbach am Main	Germany	100.00	4
Stadtwerke Kiel Aktiengesellschaft	Kiel	Germany	51.00	
SWKiel Netz GmbH	Kiel	Germany	100.00	4
SWKiel Speicher GmbH	Kiel	Germany	100.00	4
Umspannwerk Kirchberg 2 GmbH & Co. KG	Wörrstadt	Germany	51.60	
Windpark Albisheim GmbH & Co. KG	Offenbach am Main	Germany	100.00	
Windpark Dirlammen GmbH & Co. KG	Offenbach am Main	Germany	100.00	
Windpark Düste 2 GmbH & Co. KG	Hanover	Germany	100.00	
Windpark Düste Infrastruktur GmbH & Co. KG	Hanover	Germany	50.00	
Windpark Hungerberg I GmbH & Co. KG	Offenbach am Main	Germany	100.00	
Windpark Hungerberg II GmbH & Co. KG	Offenbach am Main	Germany	100.00	
Windpark Kirchberg GmbH & Co. KG	Offenbach am Main	Germany	100.00	
Windpark Siegfriedeiche GmbH & Co. KG	Hanover	Germany	100.00	5

List of MVV's shareholdings at 30 September 2018

	Town/city	Country	Share of capital[1] %	Footnote
Windwärts Energie GmbH	Hanover	Germany	100.00	
Windwärts Photovoltaik GmbH	Hanover	Germany	100.00	5
WiWi Windkraft GmbH & Co. Herrnsheim KG	Wörrstadt	Germany	100.00	
WiWi Windkraft GmbH & Co. Worms KG	Wörrstadt	Germany	100.00	
Fully consolidated subsidiaries				
Associates (international)				
Cactus Garden Solar LLC	Delaware	USA	100.00	
Českolipská teplárenská a.s	Česká Lípa	Czech Republic	75.00	
Českolipské teplo a.s.	Česká Lípa (domicile: Prague)	Czech Republic	100.00	
Corsoleil EURL	Saint Florent	France	100.00	
CTZ s.r.o.	Uherské Hradiště	Czech Republic	50.96	
e.services s.r.o.	Děčín	Czech Republic	100.00	
Electaparc S.A.	Montevideo	Uruguay	100.00	
ENERGIE Holding a.s.	Prague	Czech Republic	100.00	
G-LINDE s.r.o.	Prague	Czech Republic	100.00	
G-RONN s.r.o.	Prague	Czech Republic	100.00	
IROMEZ s.r.o.	Pelhrimov	Czech Republic	100.00	
JSI 01 Srl	Verona	Italy	100.00	
JSI Construction Group LLC	Delaware	USA	100.00	
JSI Equipment Solutions LLC	Delaware	USA	100.00	
JSI Milford Realty Company LLC	Delaware	USA	100.00	
JSI O&M Group LLC	Delaware	USA	100.00	
juwi energias renovables de Chile S.R.L.	Santiago de Chile	Chile	100.00	
juwi energias renovables S.L.U.	Valencia	Spain	100.00	
juwi energie rinnovabili Srl	Verona	Italy	100.00	
juwi Energii Regenerabile S.R.L.	Bucharest	Romania	99.00	
juwi Energy Services (Pty) Ltd.	Cape Town	South Africa	80.00	
juwi Hellas renewable energy sources A.E.	Athens	Greece	100.00	
juwi Holding US LLC	Delaware	USA	100.00	
juwi Inc.	Delaware	USA	100.00	
juwi India Renewable Energies Private Limited	Bangalore	India	100.00	
juwi Philippines Inc.	Makati City	Philippines	99.99	
juwi Renewable Energies (Pty) Ltd.	Cape Town	South Africa	100.00	
juwi Renewable Energies Ltd.	London	UK	100.00	
juwi renewable Energies Malaysia SDN. BHD.	Kuala Lumpur	Malaysia	100.00	
juwi renewable energies Pvt. Ltd.	Singapore	Singapore	100.00	
juwi Renewable Energies Thai Co., Ltd.	Bangkok	Thailand	100.00	
juwi Renewable Energy Pty. Ltd.	Brisbane	Australia	93.61	
juwi Singapore Projects Pvt. Ltd.	Singapore	Singapore	100.00	
Juwi Solar ZA Construction 1 (Pty) Ltd.	Cape Town	South Africa	80.00	
Juwi Solar ZA Construction 2 (Pty) Ltd.	Cape Town	South Africa	92.00	
Juwi Solar ZA Construction 3 (Pty) Ltd.	Cape Town	South Africa	80.00	
juwi Solar ZA Construction 4 (Pty) Ltd. (previously: K2017516494 (Pty) Ltd.)	Cape Town	South Africa	60.00	5
Juwi Solar ZA O&M 1 (Pty) Ltd.	Cape Town	South Africa	76.00	
juwi Wind LLC	Delaware	USA	100.00	

List of MVV's shareholdings at 30 September 2018

	Town/city	Country	Share of capital [1] %	Footnote
juwi Yenilenebilir Enerji A.S.	Istanbul	Turkey	100.00	
Kozilio Dio I.K.E. (Monoprosopi)	Athens	Greece	100.00	5
Kozilio Ena I.K.E. (Monoprosopi)	Athens	Greece	100.00	5
Las Torres Solar I S.L.	Valencia	Spain	100.00	
mobiheat Schweiz GmbH	Glattbrugg	Switzerland	100.00	
mobiheat Österreich GmbH	Sankt Lorenz	Austria	100.00	5
MVV Energie CZ a.s.	Prague	Czech Republic	100.00	
MVV Environment Baldovie Ltd. (previously: Dundee Energy Recycling Ltd. (DERL))	Dundee	UK	100.00	5
MVV Environment Devonport Limited	Plymouth	UK	100.00	
MVV Environment Limited	London	UK	100.00	
MVV Environment Ridham Limited	Sittingbourne / Iwade	UK	100.00	
MVV Environment Services Limited	London	UK	100.00	
OPATHERM a.s.	Opava	Czech Republic	100.00	
POWGEN a.s.	Prague	Czech Republic	100.00	
Promosolar Juwi 4 S.L.U.	Valencia	Spain	100.00	
Rocky Mountain Solar LLC	Delaware	USA	100.00	
SE Chronus Solar Energy 10 E.P.E.	Athens	Greece	100.00	5
SE Chronus Solar Energy 11 E.P.E.	Athens	Greece	100.00	5
SE Chronus Solar Energy 12 E.P.E.	Athens	Greece	100.00	5
SE Chronus Solar Energy 13 E.P.E.	Athens	Greece	100.00	5
SE Chronus Solar Energy 14 E.P.E.	Athens	Greece	100.00	5
SE Chronus Solar Energy 15 E.P.E.	Athens	Greece	100.00	5
SE Chronus Solar Energy 16 E.P.E.	Athens	Greece	100.00	5
SE Chronus Solar Energy 17 E.P.E.	Athens	Greece	100.00	5
SE Chronus Solar Energy 18 E.P.E.	Athens	Greece	100.00	5
SE Chronus Solar Energy 19 E.P.E.	Athens	Greece	100.00	5
SE Chronus Solar Energy 2 E.P.E.	Athens	Greece	100.00	5
SE Chronus Solar Energy 3 E.P.E.	Athens	Greece	100.00	5
SE Chronus Solar Energy 4 E.P.E.	Athens	Greece	100.00	5
SE Chronus Solar Energy 5 E.P.E.	Athens	Greece	100.00	5
SE Chronus Solar Energy 6 E.P.E.	Athens	Greece	100.00	5
SE Chronus Solar Energy 7 E.P.E.	Athens	Greece	100.00	5
SE Chronus Solar Energy 8 E.P.E.	Athens	Greece	100.00	5
SE Chronus Solar Energy 9 E.P.E.	Athens	Greece	100.00	5
Teplárna Liberec a.s.	Liberec	Czech Republic	76.04	
TERMIZO a.s.	Liberec	Czech Republic	100.00	
TERMO Děčín a.s.	Děčín	Czech Republic	96.91	
Vents d'Oc Énergies Renouvelables SARL	Montpellier	France	100.00	
Zásobování teplem Vsetín a.s.	Vsetín	Czech Republic	100.00	

List of MVV’s shareholdings at 30 September 2018

	Town/city	Country	Share of capital [1] %	Footnote
Unconsolidated other shareholdings				
Associates (Germany)				
Blue Village FRANKLIN Mobil GmbH	Mannheim	Germany	70.00	5
Erschließungsträgergesellschaft Weeze mbH	Weeze	Germany	75.00	
iwo Pellet Rhein-Main GmbH	Offenbach am Main	Germany	100.00	
juwi Bio Germany Verwaltungs GmbH	Wörrstadt	Germany	100.00	
juwi Solar Germany 13 GmbH & Co. KG	Wörrstadt	Germany	100.00	
juwi Solar Germany 3 GmbH & Co. KG	Wörrstadt	Germany	100.00	
juwi Solar Germany Verwaltungs GmbH	Wörrstadt	Germany	100.00	
juwi Wind Germany 126 GmbH & Co. KG	Wörrstadt	Germany	100.00	
juwi Wind Germany 127 GmbH & Co. KG	Wörrstadt	Germany	100.00	
juwi Wind Germany 128 GmbH & Co. KG	Wörrstadt	Germany	100.00	
juwi Wind Germany 134 GmbH & Co. KG	Wörrstadt	Germany	100.00	
juwi Wind Germany 170 GmbH & Co. KG	Wörrstadt	Germany	100.00	
juwi Wind Germany 171 GmbH & Co. KG	Wörrstadt	Germany	100.00	
juwi Wind Germany 177 GmbH & Co. KG	Wörrstadt	Germany	100.00	
juwi Wind Germany 178 GmbH & Co. KG	Wörrstadt	Germany	100.00	
juwi Wind Germany 180 GmbH & Co. KG	Wörrstadt	Germany	100.00	
juwi Wind Germany 183 GmbH & Co. KG	Wörrstadt	Germany	100.00	5
juwi Wind Germany 184 GmbH & Co. KG	Wörrstadt	Germany	100.00	5
juwi Wind Germany 186 GmbH & Co. KG	Wörrstadt	Germany	100.00	5
juwi Wind Germany 187 GmbH & Co. KG	Wörrstadt	Germany	100.00	5
juwi Wind Germany 188 GmbH & Co. KG	Wörrstadt	Germany	100.00	5
juwi Wind Germany 189 GmbH & Co. KG	Wörrstadt	Germany	100.00	5
juwi Wind Germany 190 GmbH & Co. KG	Wörrstadt	Germany	100.00	5
juwi Wind Germany 191 GmbH & Co. KG	Wörrstadt	Germany	100.00	5
juwi Wind Germany 192 GmbH & Co. KG	Wörrstadt	Germany	100.00	5
juwi Wind Germany 51 GmbH & Co. KG	Wörrstadt	Germany	100.00	
MVV Alpha zwei GmbH	Mannheim	Germany	100.00	4
MVV Insurance Services GmbH	Mannheim	Germany	100.00	
MVV Regioplan GmbH	Mannheim	Germany	100.00	4
MVV Windpark Verwaltungs GmbH	Mannheim	Germany	100.00	
Neu-Anspach Wind GmbH & Co. KG	Wörrstadt	Germany	100.00	
Windpark Hellenthal Wiesenhardt GmbH & Co. KG	Wörrstadt	Germany	100.00	
Windpark Lauda-Heckfeld GmbH & Co. KG	Wörrstadt	Germany	100.00	
Windpark Mußbach GmbH & Co. KG	Wörrstadt	Germany	100.00	
Windpark Schwegenheim II GmbH & Co. KG (previously: juwi Wind Germany 181 GmbH & Co. KG)	Wörrstadt	Germany	100.00	5
Windpark Wiebelsheim GmbH & Co. KG	Wörrstadt	Germany	100.00	
Windpark Windhübel GmbH & Co. KG (previously: juwi Wind Germany 172 GmbH & Co. KG)	Wörrstadt	Germany	100.00	
Windwärts erste Verwaltungsgesellschaft mbH	Hanover	Germany	100.00	
Windwärts Projektmanagement GmbH	Hanover	Germany	100.00	
WKA Schauerberg GmbH & Co. KG	Wörrstadt	Germany	100.00	

List of MVV's shareholdings at 30 September 2018

	Town/city	Country	Share of capital[1] %	Footnote
Unconsolidated other shareholdings				
Associates (International)				
Abert Rim Solar LLC	Delaware	USA	100.00	
Achab Wind Farm (Pty) Ltd.	Cape Town	South Africa	100.00	
AL Solar I LLC	Delaware	USA	100.00	
Alachua Solar LLC	Delaware	USA	100.00	5
Apple Valley Solar LLC	Delaware	USA	100.00	
Archer Solar LLC	Delaware	USA	100.00	
Arizona Solar I LLC	Delaware	USA	100.00	
Ashdown Solar LLC	Delaware	USA	100.00	
Birch Creek Solar LLC	Delaware	USA	100.00	
Black Hollow Solar LLC	Delaware	USA	100.00	5
Blue Creek Solar LLC	Delaware	USA	100.00	5
Blue Earth Solar LLC	Delaware	USA	100.00	
Blue Grama Solar LLC	Delaware	USA	100.00	5
Blue Spruce Solar LLC	Delaware	USA	100.00	
Briscoe Solar LLC	Delaware	USA	100.00	
Buckeye South Solar LLC	Delaware	USA	100.00	
Buckskin Solar LLC	Delaware	USA	100.00	
Cache Valley Solar LLC	Delaware	USA	100.00	5
Cascade Solar LLC	Delaware	USA	100.00	
Castle Wind Farm (Pty) Ltd.	Cape Town	South Africa	100.00	
Cedar Canyon Solar LLC	Delaware	USA	100.00	5
Cedarwood Solar LLC	Delaware	USA	100.00	
Centrale Solair De Lafayette LLC	Delaware	USA	100.00	
Chewaucan Solar LLC	Delaware	USA	100.00	
Coolidge Solar LLC	Delaware	USA	100.00	
Curry Hill Solar LLC	Delaware	USA	100.00	
Daisy Canyon Solar LLC	Delaware	USA	100.00	5
Deer Creek Solar LLC	Delaware	USA	100.00	
Delareyville Solar Farm (Pty) Ltd.	Cape Town	South Africa	100.00	
Eureka Solar LLC	Delaware	USA	100.00	
Firelands Wind Farm LLC	Delaware	USA	100.00	
Fountain Solar LLC	Delaware	USA	100.00	
Front Range Solar LLC	Delaware	USA	100.00	
GA Solar I LLC	Delaware	USA	100.00	
Galloway Solar LLC	Delaware	USA	100.00	5
Grassland Solar LLC	Delaware	USA	100.00	
Hartebeest Wind Farm (Pty) Ltd.	Cape Town	South Africa	100.00	
High Plains Solar LLC	Delaware	USA	100.00	5
Holden Solar LLC	Delaware	USA	100.00	
Hotazel Solar Farm 1 (Pty) Ltd. (previously: Banzopax (Pty) Ltd.)	Cape Town	South Africa	100.00	
Hotazel Solar Farm 2 (Pty) Ltd. (previously: Banzocorp (Pty) Ltd.)	Cape Town	South Africa	100.00	
Hudsonville Solar LLC	Delaware	USA	100.00	
JSI Construction Canada LLC	Delaware	USA	100.00	
JSI PR Green Holding Company Inc.	Delaware	USA	100.00	

List of MVV's shareholdings at 30 September 2018

	Town/city	Country	Share of capital [1] %	Footnote
JSI Procurement Group LLC	Delaware	USA	100.00	
JSI Rockfish Realty LLC	Delaware	USA	100.00	
juwi Energy Services 2 (Pty) Ltd.	Cape Town	South Africa	80.00	
juwi Nippon Energy K.K.	Tokyo	Japan	100.00	5
juwi Solar ZA Construction 9 (Pty) Ltd.	Cape Town	South Africa	60.00	
juwi Viet Nam Company Limited	Hanoi	Vietnam	100.00	
JWT Asset Co., Ltd.	Bangkok	Thailand	49.80	6
K20171516079 (Pty) Ltd.	Cape Town	South Africa	100.00	5
Kaip Wind Farm (Pty) Ltd.	Cape Town	South Africa	100.00	
Kap Vley Wind Farm (Pty) Ltd.	Cape Town	South Africa	100.00	
Kenhardt PV1 (Pty) Ltd.	Cape Town	South Africa	100.00	
Kiowa Creek Solar LLC	Delaware	USA	100.00	
Kiowa Solar LLC	Delaware	USA	100.00	
Klondike Solar LLC	Delaware	USA	100.00	
Koppie Enkel Solar Farm (Pty) Ltd.	Cape Town	South Africa	100.00	
Kronos Solar Farm 1 (Pty) Ltd.	Cape Town	South Africa	100.00	
Kronos Solar Farm 2 (Pty) Ltd.	Cape Town	South Africa	100.00	
Kronos Solar Farm 3 (Pty) Ltd.	Cape Town	South Africa	100.00	
L&D Solar LLC	Delaware	USA	100.00	
Lone Rock Solar LLC	Delaware	USA	100.00	
Long Prairie Solar LLC	Delaware	USA	100.00	
Lost Creek Solar LLC	Delaware	USA	100.00	
Madras Solar LLC	Delaware	USA	100.00	
Marovax (Pty) Ltd.	Cape Town	South Africa	100.00	
Meadowlark Solar LLC	Delaware	USA	100.00	
Mesilla Solar LLC	Delaware	USA	100.00	5
Mesquite Solar LLC	Delaware	USA	100.00	5
Monarch Solar LLC	Delaware	USA	100.00	5
Muleshoe Solar LLC	Delaware	USA	100.00	
MVV Environnement Ressources SASU	Colmar	France	100.00	
Namies Wind Farm (Pty) Ltd.	Cape Town	South Africa	100.00	
Nine Mile Solar LLC	Delaware	USA	100.00	
NM Solar I LLC	Delaware	USA	100.00	
Oasis Wind Farm (Pty) Ltd.	Cape Town	South Africa	100.00	
OH Solar I LLC	Delaware	USA	100.00	
Ophir Canyon Solar I LLC	Delaware	USA	100.00	5
Ophir Canyon Solar II LLC	Delaware	USA	100.00	5
Ophir Canyon Solar LLC	Delaware	USA	100.00	5
Osage Solar LLC	Delaware	USA	100.00	
Othello Solar LLC	Delaware	USA	100.00	
Outeniqua Wind Farm (Pty) Ltd.	Cape Town	South Africa	100.00	
Palisade Solar LLC	Delaware	USA	100.00	
Palmer Solar LLC	Delaware	USA	100.00	
Parachute Solar LLC	Delaware	USA	100.00	
Pike Solar LLC	Delaware	USA	100.00	5
Pilot Rock Solar LLC	Delaware	USA	100.00	
Pleasant Hill Solar LLC	Delaware	USA	100.00	

List of MVV's shareholdings at 30 September 2018

	Town/city	Country	Share of capital [1] %	Footnote
Poplar Springs Solar LLC	Delaware	USA	100.00	
Pronghorn Solar LLC	Delaware	USA	100.00	5
Rawhide Flats II Solar LLC	Delaware	USA	100.00	5
Razorback Solar LLC	Delaware	USA	100.00	
Royal Slope Solar LLC	Delaware	USA	100.00	5
Saddle Butte Solar LLC	Delaware	USA	100.00	
San Arroyo Solar LLC	Delaware	USA	100.00	
San Carlos Solar LLC	Delaware	USA	100.00	
Sand Hollow Solar LLC	Delaware	USA	100.00	5
Santa Cruz Solar LLC	Delaware	USA	100.00	
Santa Rosa Solar LLC	Delaware	USA	100.00	
Saranac Solar LLC	Delaware	USA	100.00	
Shaefers Peak Solar LLC	Delaware	USA	100.00	5
Sierra Mojada Solar LLC	Delaware	USA	100.00	5
Silver Moon Solar LLC	Delaware	USA	100.00	5
Skipjack Solar LLC	Delaware	USA	100.00	
Squirrel Creek Solar LLC	Delaware	USA	100.00	
Stansburry Solar II LLC	Delaware	USA	100.00	
Stansburry Solar LLC	Delaware	USA	100.00	
Sugarcane Solar LLC	Delaware	USA	100.00	
Suwannee Solar LLC	Delaware	USA	100.00	
Tailwind Solar LLC	Delaware	USA	100.00	
Thatcher Solar LLC	Delaware	USA	100.00	5
Trout Creek Solar LLC	Delaware	USA	100.00	5
Valent Canyon Solar LLC	Delaware	USA	100.00	5
Vredendal Solar Farm (Pty) Ltd.	Cape Town	South Africa	100.00	
Wildebeest Wind Farm (Pty) Ltd.	Cape Town	South Africa	100.00	
Wolf Wind Farm (Pty) Limited	Cape Town	South Africa	100.00	
Zingesele Wind Farm (Pty) Ltd.	Cape Town	South Africa	100.00	
At equity				
Joint ventures (Germany)				
Allegro engineering GmbH	Markranstädt-Thronitz	Germany	30.00	5
BEEGY Operations GmbH	Mannheim	Germany	51.00	
Biomasse Rhein-Main GmbH	Flörsheim am Main	Germany	33.33	
DataCenter Offenbach RheinMain GmbH (previously: EVO Alpha 2 GmbH)	Offenbach am Main	Germany	50.00	5
DC-Datacenter-Group GmbH	Wallmenroth	Germany	25.10	5
enerix Franchise GmbH & Co KG	Regensburg	Germany	25.10	
enerix Management GmbH	Regensburg	Germany	25.10	
Fernwärme Rhein-Neckar GmbH	Mannheim	Germany	50.00	
Gemeinschaftskraftwerk Kiel GmbH	Kiel	Germany	50.00	
Infrastruktur Donnersberg GmbH & Co. KG	Wörrstadt	Germany	36.31	
Infrastrukturgesellschaft Rheinhessen II GmbH & Co. KG	Wörrstadt	Germany	48.00	
KommunalWind GmbH & Co. KG	Tübingen	Germany	50.00	
Naunhofer Transportgesellschaft mbH	Parthenstein-Großsteinberg	Germany	50.00	
Qivalo GmbH	Mannheim	Germany	42.50	

List of MVV's shareholdings at 30 September 2018

	Town/city	Country	Share of capital[1] %	Footnote
RIO Holzenergie GmbH & Co. Dotternhausen KG	Wörrstadt	Germany	50.00	
Rockenhausen Windenergie-Projektentwicklungs GmbH	Rockenhausen	Germany	49.00	
Stadtwerke Ingolstadt Beteiligungen GmbH	Ingolstadt	Germany	48.40	
Stadtwerke Sinsheim Versorgungs GmbH & Co. KG	Sinsheim	Germany	30.00	
Umspannwerk Donnersberg GmbH & Co. KG	Wörrstadt	Germany	36.31	
At equity				
Joint ventures (International)				
juwi Shizen Energy Inc.	Tokyo	Japan	50.00	
luminatis S.à.r.l.	Luxembourg	Luxembourg	70.00	
At equity				
Associates (Germany)				
AVR BioGas GmbH	Sinsheim	Germany	41.50	
ESN EnergieSystemeNord GmbH	Schwentinental	Germany	25.00	
Grosskraftwerk Mannheim Aktiengesellschaft	Mannheim	Germany	28.00	
Infrastrukturgesellschaft Erbes-Büdesheim GmbH & Co. KG	Wörrstadt	Germany	22.36	
juwi Beteiligungs GmbH & Co. Holzpelletieranlage Morbach KG	Wörrstadt	Germany	50.00	
juwi Wind Germany 100 GmbH & Co. KG	Wörrstadt	Germany	39.00	
Mainnetz GmbH	Obertshausen	Germany	25.10	
Naturenergie Main-Kinzig GmbH	Gelnhausen	Germany	50.00	
Netzgesellschaft Edingen-Neckarhausen GmbH & Co. KG	Edingen-Neckarhausen	Germany	24.00	
Phoenix Energie GmbH	Hanover	Germany	0.05	6
Recogizer Group GmbH	Bonn	Germany	25.11	5
ReNabi GmbH	Mannheim	Germany	51.00	
RIO Holzenergie GmbH & Co. Bad Arolsen KG	Wörrstadt	Germany	50.00	
Stadtwerke Buchen GmbH & Co. KG	Buchen-Odenwald	Germany	25.10	
Zweckverband Wasserversorgung Kurpfalz (ZWK)	Mannheim (domicile: Heidelberg)	Germany	51.00	3
At equity				
Associates (International)				
juwi Shizen Energy Operation Inc.	Tokyo	Japan	30.00	
Other minority shareholdings				
Germany				
8KU GmbH	Berlin	Germany	12.50	
Infrastruktur Oberheimbach I GmbH & Co. KG	Wörrstadt	Germany	15.00	
Infrastrukturgesellschaft Bischheim GmbH & Co. KG	Wörrstadt	Germany	15.31	
juwi Wind Germany 129 GmbH & Co. KG	Wörrstadt	Germany	16.00	
Klimaschutzagentur Mannheim gemeinnützige GmbH	Mannheim	Germany	40.00	
Main-Kinzig-Entsorgungs- und Verwertungs GmbH	Gelnhausen	Germany	49.00	
Management Stadtwerke Buchen GmbH	Buchen-Odenwald	Germany	25.20	
RIO Holzenergie GmbH & Co. Langelsheim KG	Wörrstadt	Germany	37.55	
Stadtmarketing Mannheim GmbH	Mannheim	Germany	3.09	
Stadtwerke Langen Gesellschaft mit beschränkter Haftung	Langen	Germany	10.00	4

List of MVV's shareholdings at 30 September 2018

	Town/city	Country	Share of capital[1] %	Footnote
Stadtwerke Schwetzingen GmbH & Co. KG	Schwetzingen	Germany	10.00	
Stadtwerke Schwetzingen Verwaltungsgesellschaft mbH	Schwetzingen	Germany	10.00	
Stadtwerke Sinsheim Verwaltungs GmbH	Sinsheim	Germany	30.00	
Stadtwerke Walldorf GmbH & Co. KG	Walldorf	Germany	25.10	
Stadtwerke Walldorf Verwaltungs GmbH	Walldorf	Germany	25.10	
SWT Regionale Erneuerbare Energien GmbH	Trier	Germany	51.00	
Wasserversorgungsverband Neckargruppe	Edingen-Neckarhausen	Germany	25.00	
Windfarm Wonnegau UW GmbH & Co. KG	Gundersheim	Germany	24.70	
WiWi Windkraft GmbH & Co. Westpfalz KG	Wörrstadt	Germany	5.32	
WVE Wasserversorgungs- und -entsorgungsgesellschaft Schriesheim mbH	Schriesheim	Germany	24.50	

1 Share of capital at 30 September 2018 pursuant to § 16 (4) AktG; equity and annual net income pursuant to HGB or local requirements
2 Majority of voting rights
3 No voting right majority
4 Profit transfer/operating profit transfer agreement
5 Added in financial year
6 Control agreement or controlling influence

40. Auditor's fee

The following fees were incurred in Germany for the services performed by the auditor of the consolidated financial statements, PricewaterhouseCoopers GmbH Wirtschaftsprüfungsgesellschaft, in the 2018 financial year:

Auditor's fee

Euro 000s	**FY 2018**	FY 2017
Audit	2,188	1,822
Other advisory services	486	317
Tax advisory services	101	101
Other services	357	578
	3,132	**2,818**

The audit services line item relates above all to the fees paid for the audit of the consolidated financial statements and the audit of the separate financial statements of MVV Energie AG and its subsidiaries. The fees paid for other audit services mainly relate to audits performed in accordance with energy industry requirements/attestations (EEG, KWKG) and voluntary certification services, including those relating to the internal tax control system. The tax advisory services line item particularly involves fees for the support provided in the context of tax audits and for tax advisory services in the field of transfer prices. The fees paid for other services chiefly include fees for project advisory services relating to the conversion in accounting to new IFRS standards.

41. Utilisation of § 264 (3) HGB

The following German subsidiaries will draw on the disclosure exemption provided for under § 264 (3) HGB for the 2018 financial year:

- BFE Institut für Energie und Umwelt GmbH, Mühlhausen
- MVV Alpha zwei GmbH, Mannheim
- MVV Alpha fünfzehn GmbH, Mannheim
- MVV Umwelt GmbH, Mannheim
- MVV Umwelt Ressourcen GmbH, Mannheim
- MVV Umwelt UK GmbH, Mannheim
- MVV Windenergie GmbH, Mannheim

42. Declaration of Conformity under § 161 AktG

The Executive and Supervisory Boards of MVV Energie AG submitted their Declaration of Conformity with the recommendations of the German Corporate Governance Code pursuant to § 161 AktG and made this available to the company's shareholders.

The complete declaration is published on the internet at **www.mvv.de/investors**.

43. Information on concessions

In addition to the concession agreements between the City of Mannheim and MVV Energie AG (please see Note 38 Related party disclosures), further concession agreements have also been concluded between MVV companies and local and regional authorities. The remaining terms range from 12 to 17 years. These agreements assign responsibility for operating the respective distribution grids and providing for their maintenance. Should these agreements not be extended upon expiry, the facilities for supplying the respective utility services must be taken over by the new concession holder upon payment of commensurate compensation.

44. Events after balance sheet date

We are not aware of any events after the balance sheet date.

Mannheim, 13 November 2018
MVV Energie AG
Executive Board

Dr. Müller   Klöpfer   Dr. Roll

Responsibility Statement

“We affirm that, to the best of our knowledge, the consolidated financial statements give a true and fair view of the net asset, financial and earnings position of the Group in accordance with applicable accounting principles and that the group management report provides a fair view of the development and performance of the business and the position of the Group, together with a description of the principal opportunities and risks associated with the expected development of the Group.”

Mannheim, 13 November 2018
MVV Energie AG
Executive Board

Dr. Müller

Klöpfer

Dr. Roll

Directors and Officers

EXECUTIVE BOARD OF MVV ENERGIE AG

Dr. Georg Müller
CEO, Commercial Affairs
and Labour Director

Ralf Klöpfer
Sales

Dr. Hansjörg Roll
Technology

SUPERVISORY BOARD OF MVV ENERGIE AG

Dr. Peter Kurz
(Chairman)
Lord High Mayor of City of Mannheim

Heike Kamradt[1]
(Deputy Chairman)
Chairman of Group Works Council

Johannes Böttcher[1]
Chairman of Works Council
of Energieversorgung Offenbach AG

Timo Carstensen[1]
Deputy Chairman of Works Council
of Stadtwerke Kiel AG

Ralf Eisenhauer
Construction and Project Manager at
MWS Projektentwicklungsgesellschaft mbH, Mannheim

Peter Erni[1]
Trade Union Secretary at ver.di Rhine-Neckar

Detlef Falk[1]
Chairman of Works Council
of Stadtwerke Kiel AG

Dieter Hassel
Member of Executive Board
of RheinEnergie AG, Cologne

Barbara Hoffmann
Auditor, Tax Advisor

Prof. Dr. Heidrun Kämper
Academic Employee at Institut für Deutsche Sprache,
Mannheim

Brigitte Kemmer
Tax Advisor

Dr. Antje Mohr[1]
Trade Union Secretary at ver.di Kiel

Dr. Lorenz Näger
Member of Executive Board of HeidelbergCement AG

Steffen Ratzel
Managing Director of BKV-Bäder- und Kurverwaltung
Baden-Württemberg, Anstalt des öffentlichen Rechts,
Baden-Baden (since 1 January 2018)

Peter Sattler[1]
Member of Works Council

Bernhard Schumacher[1]
Director of Regional Sales Division at MVV Energie AG

Christian Specht
First Mayor of City of Mannheim

Carsten Südmersen
Management Consultant (until 31 December 2017)

Katja Udluft[1]
Trade Union Secretary at ver.di Rhine-Neckar

Prof. Heinz-Werner Ufer
Graduate in Economics

Jürgen Wiesner[1]
Chairman of Works Council of MVV Energie AG

Additional positions held by members of Executive and Supervisory Boards on supervisory boards or comparable supervisory bodies are listed in detail on the following pages.

1 Employee representative

MEMBERS OF SUPERVISORY BOARD COMMITTEES AT MVV ENERGIE AG

Committee	Name
Audit Committee	• Prof. Heinz-Werner Ufer (Chairman) • Heike Kamradt (Deputy Chairman) • Peter Erni • Detlef Falk • Dr. Lorenz Näger • Steffen Ratzel (since 1 January 2018) • Carsten Südmersen (until 31 December 2017)
Personnel Committee	• Dr. Peter Kurz (Chairman) • Heike Kamradt (Deputy Chairman) • Ralf Eisenhauer • Peter Erni • Steffen Ratzel (since 1 January 2018) • Carsten Südmersen (until 31 December 2017) • Jürgen Wiesner
Nomination Committee	• Dr. Peter Kurz (Chairman) • Ralf Eisenhauer • Barbara Hoffmann • Steffen Ratzel (since 1 January 2018) • Carsten Südmersen (until 31 December 2017) • Prof. Heinz-Werner Ufer
Mediation Committee	• Dr. Peter Kurz (Chairman) • Heike Kamradt • Steffen Ratzel (since 1 January 2018) • Carsten Südmersen (until 31 December 2017) • Jürgen Wiesner
New Authorised Capital Creation Committee	• Dr. Peter Kurz (Chairman) • Ralf Eisenhauer • Peter Erni • Dieter Hassel • Heike Kamradt • Steffen Ratzel (since 1 January 2018) • Christian Specht • Carsten Südmersen (until 31 December 2017) • Prof. Heinz-Werner Ufer

MEMBERS OF EXECUTIVE BOARD OF MVV ENERGIE AG

Name	Positions held on other statutory supervisory boards of German companies	Membership of comparable German and foreign company supervisory boards
Dr. Georg Müller	• Energieversorgung Offenbach AG, Offenbach (Chairman) • Grosskraftwerk Mannheim AG, Mannheim • Juwi AG, Wörrstadt (Chairman) • MVV Enamic GmbH, Mannheim (Deputy Chairman) • MVV Insurance Services GmbH, Mannheim (Chairman) • MVV Trading GmbH, Mannheim • MVV Umwelt GmbH, Mannheim • Saarschmiede GmbH, Völklingen • Stadtwerke Kiel AG, Kiel (Chairman)	
Ralf Klöpfer	• Energieversorgung Offenbach AG, Offenbach • IDOS Software AG, Karlsruhe • Juwi AG, Wörrstadt • MVV Enamic GmbH, Mannheim (Chairman) • MVV Trading GmbH, Mannheim (Chairman) • Stadtwerke Ingolstadt Beteiligungen GmbH, Ingolstadt (Deputy Chairman) • Stadtwerke Kiel AG, Kiel	• BEEGY GmbH, Mannheim (Chairman) • MVV Energie CZ a.s., Prague, Czech Republic (Chairman) • Qivalo GmbH, Mannheim (Deputy Chairman) • Soluvia GmbH, Mannheim • Stadtmarketing Mannheim GmbH, Mannheim
Dr. Hansjörg Roll	• Energieversorgung Offenbach AG, Offenbach • Grosskraftwerk Mannheim AG, Mannheim (Chairman since 16 May 2018) • Juwi AG, Wörrstadt • MVV Netze GmbH, Mannheim (Chairman) • MVV Umwelt GmbH, Mannheim (Chairman) • Stadtwerke Kiel AG, Kiel	• MVV Energie CZ a.s., Prague, Czech Republic • Soluvia GmbH, Mannheim (Chairman)

MEMBERS OF SUPERVISORY BOARD OF MVV ENERGIE AG

Name Occupation	Positions held on other statutory supervisory boards of German companies	Membership of comparable German and foreign company supervisory boards
Dr. Peter Kurz (Chairman) Lord High Mayor of City of Mannheim	• Universitätsklinikum Mannheim GmbH, Mannheim (Chairman) • MKB Mannheimer Kommunal-Beteiligungen GmbH, Mannheim (Chairman)	• GBG Mannheimer Wohnungsbau-gesellschaft mbH, Mannheim (Chairman) • mg: mannheimer gründungszentren gmbh, Mannheim (Chairman) • MWS Projektentwicklungsgesellschaft mbH, Mannheim (Chairman) • Popakademie Baden-Württemberg GmbH, Mannheim • Sparkasse Rhein Neckar Nord, Mannheim (Chairman since 12 August 2018) • Stadtmarketing Mannheim GmbH, Mannheim
Heike Kamradt (Deputy Chairman) Chairman of Group Works Council	• MVV Enamic GmbH, Mannheim • MVV Insurance Services GmbH, Mannheim • MVV Netze GmbH, Mannheim • MVV Trading GmbH, Mannheim • MVV Umwelt GmbH, Mannheim	
Johannes Böttcher Chairman of Works Council of Energie-versorgung Offenbach AG	• Energieversorgung Offenbach AG, Offenbach (Deputy Chairman)	
Timo Carstensen Deputy Chairman of Works Council of Stadtwerke Kiel AG	• Stadtwerke Kiel AG, Kiel	
Ralf Eisenhauer Construction and Project Manager at MWS Projekt-entwicklungsgesellschaft mbH, Mannheim		• Sparkasse Rhein Neckar Nord, Mannheim • Stadtmarketing Mannheim GmbH, Mannheim
Peter Erni Trade Union Secretary at ver.di Rhine-Neckar		
Detlef Falk Chairman of Works Council of Stadtwerke Kiel AG	• Stadtwerke Kiel AG, Kiel	• Soluvia GmbH, Mannheim

Name **Occupation**	**Positions held on other statutory supervisory boards of German companies**	**Membership of comparable German and foreign company supervisory boards**
Dieter Hassel Member of Executive Board of RheinEnergie AG, Cologne	• BRUNATA-METRONA GmbH, Hürth • NetCologne Gesellschaft für Telekommunikation mbH, Cologne	• Agger Energie GmbH, Gummersbach • BELKAW GmbH, Bergisch Gladbach (Chairman) • Energieversorgung Leverkusen GmbH & Co. KG, Leverkusen • Gasversorgungsgesellschaft mbH, Rhein-Erft, Hürth • Rheinische NETZGesellschaft mbH, Cologne • Stadtwerke Leichlingen GmbH, Leichlingen (Deputy Chairman) • Stadtwerke Lohmar GmbH & Co. KG, Lohmar
Barbara Hoffmann Auditor, Tax Advisor		• Berliner Stadtreinigungsbetriebe, Anstalt des öffentlichen Rechts, Berlin
Prof. Dr. Heidrun Kämper Academic Employee at Institut für Deutsche Sprache, Mannheim		• m:con – mannheim:congress GmbH, Mannheim • Stadt Mannheim Beteiligungs GmbH, Mannheim
Brigitte Kemmer Tax Advisor		
Dr. Antje Mohr Trade Union Secretary at ver.di Kiel	• Stadtwerke Kiel AG, Kiel	

Name Occupation	Positions held on other statutory supervisory boards of German companies	Membership of comparable German and foreign company supervisory boards
Dr. Lorenz Näger Member of Executive Board of HeidelbergCement AG		• Castle Cement Limited, Maidenhead, UK • Cimenteries CBR S.A., Brussels, Belgium • ENCl Holding N.V., ’s-Hertogenbosch, Netherlands • Hanson Limited, Maidenhead, UK • Hanson Pioneer España, S.L.U., Madrid, Spain • HeidelbergCement Canada Holding Limited, Maidenhead, UK • HeidelbergCement Holding S.à.r.l., Luxembourg • HeidelbergCement UK Holding Limited, Maidenhead, UK • HeidelbergCement UK Holding II Limited, Maidenhead, UK • Italcementi Fabbriche Riunite Cemento S.p.A., Bergamo, Italy • Lehigh B.V., ’s-Hertogenbosch, Netherlands (Chairman) • Lehigh Hanson, Inc., Irving, TX, USA • Lehigh Hanson Materials Limited, Calgary, Canada • Lehigh UK Limited, Maidenhead, UK • Palatina Insurance Limited, St. Julians, Malta (until 24 October 2017) • PHOENIX Pharmahandel GmbH & Co. KG, Mannheim, Germany • PT Indocement Tunggal Prakarsa Tbk., Jakarta, Indonesia • Recem S.A., Luxemburg (until 31 March 2018)
Steffen Ratzel Managing Director of BKV-Bäder- und Kurverwaltung Baden-Württemberg, Anstalt des öffentlichen Rechts, Baden-Baden (since 1 January 2018)		• Rhein-Neckar Flugplatz GmbH, Mannheim • Gemeinschaftskraftwerk Baden-Baden GmbH, Baden-Baden • Staatsbad Wildbad – Bäder- und Kurbetrieb-gesellschaft mbH, Bad Wildbad • Badenweiler Thermen und Touristik GmbH, Badenweiler
Peter Sattler Member of Works Council of MVV Energie AG	• MVV Insurance Services GmbH, Mannheim	

Name Occupation	Positions held on other statutory supervisory boards of German companies	Membership of comparable German and foreign company supervisory boards
Bernhard Schumacher Director of Regional Sales Division at MVV Energie AG		• AVR Biogas GmbH, Sinsheim (Deputy Chairman) • Management Stadtwerke Buchen GmbH, Buchen (Deputy Chairman) • Stadtwerke Schwetzingen Verwaltungs-gesellschaft mbH, Schwetzingen • Stadtwerke Walldorf GmbH & Co. KG, Walldorf
Christian Specht First Mayor of City of Mannheim	• Universitätsklinikum Mannheim GmbH, Mannheim • MV Verkehr GmbH, Mannheim (Chairman) • Rhein-Neckar-Verkehr GmbH, Mannheim	• Verkehrsverbund Rhein-Neckar GmbH (VRN), Mannheim (Chairman)
Carsten Südmersen Management Consultant (until 31 December 2017)		
Katja Udluft Trade Union Secretary at ver.di Rhine-Neckar		
Prof. Heinz-Werner Ufer Graduate in Economics	• Amprion GmbH, Dortmund (Chairman)	
Jürgen Wiesner Chairman of Works Council of MVV Energie AG	• MVV Enamic GmbH, Mannheim • MVV Trading GmbH, Mannheim • MVV Umwelt GmbH, Mannheim	• Soluvia GmbH, Mannheim

Independent Auditor’s Report

To MVV Energie AG, Mannheim

REPORT ON THE AUDIT OF THE CONSOLIDATED FINANCIAL STATEMENTS AND OF THE GROUP MANAGEMENT REPORT

Audit Opinions

We have audited the consolidated financial statements of MVV Energie AG, Mannheim, and its subsidiaries (the Group), which comprise the consolidated balance sheet as at 30 September 2018, the consolidated income statement, statement of comprehensive income, consolidated statement of changes in equity and consolidated cash flow statement for the financial year from 1 October 2017 to 30 September 2018, and notes to the consolidated financial statements, including a summary of significant accounting policies. In addition, we have audited the group management report of MVV Energie AG, which is combined with the Company’s management report, for the financial year from 1 October 2017 to 30 September 2018. We have not audited the content of those parts of the group management report listed in the “Other Information” section of our auditor’s report in accordance with the German legal requirements.

In our opinion, on the basis of the knowledge obtained in the audit,

- the accompanying consolidated financial statements comply, in all material respects, with the IFRSs as adopted by the EU and the additional requirements of German commercial law pursuant to § [Article] 315e Abs. [paragraph] 1 HGB [Handelsgesetzbuch: German Commercial Code] and, in compliance with these requirements, give a true and fair view of the assets, liabilities, and financial position of the Group as at 30 September 2018, and of its financial performance for the financial year from 1 October 2017 to 30 September 2018, and
- the accompanying group management report as a whole provides an appropriate view of the Group’s position. In all material respects, this group management report is consistent with the consolidated financial statements, complies with German legal requirements and appropriately presents the opportunities and risks of future development. Our audit opinion on the group management report does not cover the content of those parts of the group management report listed in the “Other Information” section of our auditor’s report.

Pursuant to § 322 Abs. 3 Satz [sentence] 1 HGB, we declare that our audit has not led to any reservations relating to the legal compliance of the consolidated financial statements and of the group management report.

Basis for the Audit Opinions

We conducted our audit of the consolidated financial statements and of the group management report in accordance with § 317 HGB and the EU Audit Regulation (No. 537/2014, referred to subsequently as “EU Audit Regulation”) and in compliance with German Generally Accepted Standards for Financial Statement Audits promulgated by the Institut der Wirtschaftsprüfer [Institute of Public Auditors in Germany] (IDW). Our responsibilities under those requirements and principles are further described in the “Auditor’s Responsibilities for the Audit of the Consolidated Financial Statements and of the Group Management Report“ section of our auditor’s report. We are independent of the group entities in accordance with the requirements of European law and German commercial and professional law, and we have fulfilled our other German professional responsibilities in accordance with these requirements. In addition, in accordance with Article 10 (2) point (f) of the EU Audit Regulation, we declare that we have not provided non-audit services prohibited under Article 5 (1) of the EU Audit Regulation. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions on the consolidated financial statements and on the group management report.

Key Audit Matters in the Audit of the Consolidated Financial Statements

Key audit matters are those matters that, in our professional judgment, were of most significance in our audit of the consolidated financial statements for the financial year from 1 October 2017 to 30 September 2018. These matters were addressed in the context of our audit of the consolidated financial statements as a whole, and in forming our audit opinion thereon; we do not provide a separate audit opinion on these matters.

In our view, the matters of most significance in our audit were as follows:

1. **Recoverability of goodwill**
2. **Accounting treatment of energy trading transactions**

Our presentation of these key audit matters has been structured in each case as follows:

a. Matter and issue
b. Audit approach and findings
c. Reference to further information

Hereinafter we present the key audit matters:

1. Recoverability of goodwill

a. Goodwill amounting in total to € 197 million is reported under the "Intangible assets" balance sheet item in the consolidated financial statements of MVV Energie AG. Goodwill is tested for impairment by the Company once a year or when there are indications of impairment to determine any possible need for write-downs. The impairment test is carried out at the level of the groups of cash-generating units to which the relevant goodwill is allocated. The carrying amount of the relevant cash-generating units, including goodwill, is compared with the corresponding recoverable amount in the context of the impairment test. The recoverable amount is generally determined using the value in use. The present value of the future cash flows from the respective group of cash-generating units normally serves as the basis of valuation. Present values are calculated using discounted cash flow models. For this purpose, the adopted medium-term business plan of the Group forms the starting point which is extrapolated based on assumptions about long-term rates of growth. Expectations relating to future market developments and assumptions about the development of macroeconomic factors are also taken into account. The discount rate used is the weighted average cost of capital for the respective group of cash-generating units. In the context of the quarterly financial statements as of 31 March 2018, MVV Energie AG conducted an impairment test on the goodwill allocated to the juwi subgroup due to indications of impairment. The result of this impairment test was an impairment in the amount of € 24.0 million – after taking into account the fair value less costs of disposal. In addition, as a result of periodic impairment tests impairments of € 9.7 million were recognized, particularly for MVV Enamic's goodwill.

The outcome of this valuation exercise is dependent to a large extent on the estimates made by management with respect to the future cash inflows from the respective group of cash-generating units, the discount rate used, the rate of growth and other assumptions, and is therefore subject to considerable uncertainty. Against this background and due to the complex nature of the valuation, this matter was of particular significance during our audit.

b. As part of our audit, we assessed the methodology used for the purposes of performing the impairment test, among other things. After matching the future cash inflows used for the calculation against the adopted medium-term business plan of the Group, we assessed the appropriateness of the calculation, in particular by reconciling it with general and sector-specific market expectations. In addition, we assessed the appropriate consideration of the costs of Group functions. In the knowledge that even relatively small changes in the discount rate applied can have a material impact on the value of the entity calculated in this way, we also focused our testing on the parameters used to determine the discount rate applied, and assessed the calculation model. In order to reflect the uncertainty inherent in the projections, we evaluated the sensitivity analyses performed by the Company. Overall, the valuation parameters and assumptions used by the executive directors are in line with our expectations and are also within the ranges considered by us to be reasonable.

c. The Company's goodwill disclosures are contained in note "14 Intangible assets" of the notes to the consolidated financial statements.

2. Accounting treatment of energy trading transactions

a. Within the MVV Energie AG Group, the consolidated subsidiary MVV Trading GmbH has primary responsibility for the procurement of energy and emission rights and for hedging energy price risks for the Group companies MVV Energie AG, Stadtwerke Kiel AG, Energieversorgung Offenbach AG and Stadtwerke Ingolstadt GmbH. MVV Trading GmbH trades to a large extent on the spot and futures market for electricity, gas and emission rights on stock exchanges and on the over-the-counter market for these purposes. These contracts are classified as derivative financial instruments in accordance with IAS 39, which are either accounted for at fair value through profit or loss (classified as held-for-trading financial instruments) or as pending transactions if the underlying for the derivative financial instrument will be received or delivered in future as part of the Company's own expected purchase, sale or usage requirements ("own use exemption"). The accounting treatment for physically settled derivative financial instruments is determined with the aid of the risk management system of MVV Trading GmbH, which allocates these derivative financial instruments to their corresponding purpose and therefore to the appropriate accounting treatment from a Group perspective. Accordingly, physically settled derivative financial instruments that do not form part of the Group's own expected purchase, sale or usage requirements and all financially settled derivative financial instruments are measured at fair value through profit or loss. To some extent these derivative financial instruments for energy are included as hedging instruments in the hedge accounting in accordance with IAS 39 as so called hedged cash flows. The underlying transactions are the purchase respectively the sale of energy at variable prices within maximum five years.

The energy trading operations are supported by energy trading systems. These systems handle the process chain from the recording of trading transactions to the calculation and measurement of positions and the confirmation of trading transactions, as well as risk management. In view of the high volume of trading and the complexity of accounting for derivatives in accordance with IAS 39 and IFRS 13, respectively, as well as its significant effects on the assets, liabilities, financial position and financial performance, this business area is of particular significance for the consolidated financial statements and the conduct of our audit.

b. As part of our audit, among other things, we assessed the appropriateness of the internal control system established for the purpose of entering into and settling energy trading transactions, including the trading system used for this purpose. As part of our audit of the internal control system, we also evaluated the effectiveness of the controls established by the Company on a sample basis. We analyzed the methodology for determining the fair values of the derivative instruments with respect to compliance with IFRS 13 and carried out an appraisal using our own valuations on a sample basis. With respect to the accounting treatment of the derivatives in accordance with IAS 39, we evaluated the application of the own use exemption for physically settled derivative financial instruments using the process implemented within the Group – from the submission of orders by the consolidated subsidiaries to MVV Trading GmbH to the processing of the data by MVV Trading GmbH – and satisfied ourselves that the own use exemption is applied correctly on the basis of a random sample. We assessed the recognition of cash flow hedges and their accounting. With respect to the hedged cash flows, we assessed the essential past hedge effectiveness and the expected future hedge effectiveness and the correctness of the corresponding amounts recorded in equity as well as the reclassified amounts within the consolidated income statement. In our view, the accounting policies applied by management and the methodology for accounting for energy trading transactions are appropriate overall.

c. The Company's disclosures relating to energy trading and its effects on the consolidated financial statements are contained in section "35 Financial instruments" in the notes to the consolidated financial statements.

Other Information

The executive directors are responsible for the other information. The other information comprises the following non-audited parts of the group management report:

- the statement on corporate governance pursuant to § 289f HGB and § 315d HGB included in section "Corporate Governance" of the group management report
- the corporate governance report pursuant to No. 3.10 of the German Corporate Governance Code
- the separate non-financial report pursuant to § 289b Abs. 3 HGB and § 315b Abs. 3 HGB

The other information comprises further the remaining parts of the annual report – excluding cross-references to external information – with the exception of the audited consolidated financial statements, the audited group management report and our auditor's report.

Our audit opinions on the consolidated financial statements and on the group management report do not cover the other information, and consequently we do not express an audit opinion or any other form of assurance conclusion thereon.

In connection with our audit, our responsibility is to read the other information and, in so doing, to consider whether the other information

- is materially inconsistent with the consolidated financial statements, with the group management report or our knowledge obtained in the audit, or
- otherwise appears to be materially misstated.

Responsibilities of the Executive Directors and the Supervisory Board for the Consolidated Financial Statements and the Group Management Report

The executive directors are responsible for the preparation of the consolidated financial statements that comply, in all material respects, with IFRSs as adopted by the EU and the additional requirements of German commercial law pursuant to § 315e Abs. 1 HGB and that the consolidated financial statements, in compliance with these requirements, give a true and fair view of the assets, liabilities, financial position, and financial performance of the Group. In addition the executive directors are responsible for such internal control as they have determined necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the consolidated financial statements, the executive directors are responsible for assessing the Group's ability to continue as a going concern. They also have the responsibility for disclosing, as applicable, matters related to going concern. In addition, they are responsible for financial reporting based on the going concern basis of accounting unless there is an intention to liquidate the Group or to cease operations, or there is no realistic alternative but to do so.

Furthermore, the executive directors are responsible for the preparation of the group management report that, as a whole, provides an appropriate view of the Group's position and is, in all material respects, consistent with the consolidated financial statements, complies with German legal requirements, and appropriately presents the opportunities and risks of future development. In addition, the executive directors are responsible for such arrangements and measures (systems) as they have considered necessary to enable the preparation of a group management report that is in accordance with the applicable German legal requirements, and to be able to provide sufficient appropriate evidence for the assertions in the group management report.

The supervisory board is responsible for overseeing the Group's financial reporting process for the preparation of the consolidated financial statements and of the group management report.

Auditor's Responsibilities for the Audit of the Consolidated Financial Statements and of the Group Management Report

Our objectives are to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and whether the group management report as a whole provides an appropriate view of the Group's position and, in all material respects, is consistent with the consolidated financial statements and the knowledge obtained in the audit, complies with the German legal requirements and appropriately presents the opportunities and risks of future development, as well as to issue an auditor's report that includes our audit opinions on the consolidated financial statements and on the group management report.

Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with § 317 HGB and the EU Audit Regulation and in compliance with German Generally Accepted Standards for Financial Statement Audits promulgated by the Institut der Wirtschaftsprüfer (IDW) will always detect a material misstatement. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated financial statements and this group management report.

We exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the consolidated financial statements and of the group management report, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our audit opinions. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.

- Obtain an understanding of internal control relevant to the audit of the consolidated financial statements and of arrangements and measures (systems) relevant to the audit of the group management report in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an audit opinion on the effectiveness of these systems.

- Evaluate the appropriateness of accounting policies used by the executive directors and the reasonableness of estimates made by the executive directors and related disclosures.

- Conclude on the appropriateness of the executive directors' use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in the auditor's report to the related disclosures in the consolidated financial statements and in the group management report or, if such disclosures are inadequate, to modify our respective audit opinions. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Group to cease to be able to continue as a going concern.

- Evaluate the overall presentation, structure and content of the consolidated financial statements, including the disclosures, and whether the consolidated financial statements present the underlying transactions and events in a manner that the consolidated financial statements give a true and fair view of the assets, liabilities, financial position and financial performance of the Group in compliance with IFRSs as adopted by the EU and the additional requirements of German commercial law pursuant to § 315e Abs. 1 HGB.

- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express audit opinions on the consolidated financial statements and on the group management report. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our audit opinions.

- Evaluate the consistency of the group management report with the consolidated financial statements, its conformity with German law, and the view of the Group's position it provides.

- Perform audit procedures on the prospective information presented by the executive directors in the group management report. On the basis of sufficient appropriate audit evidence we evaluate, in particular, the significant assumptions used by the executive directors as a basis for the prospective information, and evaluate the proper derivation of the prospective information from these assumptions. We do not express a separate audit opinion on the prospective information and on the assumptions used as a basis. There is a substantial unavoidable risk that future events will differ materially from the prospective information.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide those charged with governance with a statement that we have complied with the relevant independence requirements, and communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, the related safeguards.

From the matters communicated with those charged with governance, we determine those matters that were of most significance in the audit of the consolidated financial statements of the current period and are therefore the key audit matters. We describe these matters in our auditor's report unless law or regulation precludes public disclosure about the matter.

OTHER LEGAL AND REGULATORY REQUIREMENTS

Further Information pursuant to Article 10 of the EU Audit Regulation

We were elected as group auditor by the annual general meeting on 9 March 2018. We were engaged by the supervisory board on 26 June 2018. We have been the group auditor of the MVV Energie AG, Mannheim, without interruption since the financial year 2008/09.

We declare that the audit opinions expressed in this auditor's report are consistent with the additional report to the audit committee pursuant to Article 11 of the EU Audit Regulation (long-form audit report).

GERMAN PUBLIC AUDITOR RESPONSIBLE FOR THE ENGAGEMENT

The German Public Auditor responsible for the engagement is Kerstin Krauß.

Mannheim, 13 November 2018

PricewaterhouseCoopers GmbH
Wirtschaftsprüfungsgesellschaft

Folker Trepte Wirtschaftsprüfer (German Public Auditor)	Kerstin Krauß Wirtschaftsprüferin (German Public Auditor)