Consolidated Financial Statements

Income Statement

Income statement

Euro 000s	**1 Oct 2019 to 30 Sep 2020**	1 Oct 2018 to 30 Sep 2019	Notes
Sales [1]	3,583,790	3,899,818	
less electricity and natural gas taxes	151,696	160,349	
Sales less electricity and natural gas taxes	**3,432,094**	**3,739,469**	1
Changes in inventories	5,483	18,067	2
Own work capitalised	22,167	20,987	3
Other operating income [1]	206,344	312,891	4
Cost of materials [1]	2,506,252	2,866,528	5
Employee benefit expenses	456,423	438,229	6
Other operating expenses [1]	291,021	454,697	7
Impairment losses on financial instruments	11,666	6,582	
Income from companies recognised at equity	21,504	25,332	8
Other income from shareholdings	2,563	– 1,732	8
EBITDA	**424,793**	**348,978**	
Depreciation	206,997	183,493	9
EBITA	**217,796**	**165,485**	
Goodwill amortisation	8,302	–	14
EBIT	**209,494**	**165,485**	
of which result of IFRS 9 derivative measurement	– 19,768	– 56,100	
of which EBIT before result of IFRS 9 derivative measurement	229,262	221,585	
Financing income	12,324	21,510	10
Financing expenses	60,676	74,581	11
EBT	**161,142**	**112,414**	
Taxes on income	46,950	36,155	12
Net income for period	**114,192**	**76,259**	
of which non-controlling interests	20,291	30,276	
of which earnings attributable to MVV Energie AG shareholders (net income for period after minority interests)	**93,901**	**45,983**	13
Basic and diluted earnings per share (Euro)	**1.42**	**0.70**	

1 Previous year's figures adjusted due to NIFRIC "Physical settlement of contracts to buy or sell a non-financial item (IFRS 9)"

Statement of Comprehensive Income

Statement of income and expenses recognised in group equity

Euro 000s	**1 Oct 2019 to 30 Sep 2020**	1 Oct 2018 to 30 Sep 2019
Net income for period	**114,192**	**76,259**
Cash flow hedges	– 14,254	– 47,226
Hedging costs	310	248
Currency translation differences	– 10,030	3,888
Reclassifiable share of companies recognised at equity	– 366	364
Items that may subsequently be reclassified to profit or loss	**– 24,340**	**– 42,726**
Actuarial gains and losses	3,318	– 17,591
Non-reclassifiable share of companies recognised at equity	– 18,217	– 1,353
Items that will not be reclassified to profit or loss	**– 14,899**	**– 18,944**
Total comprehensive income	**74,953**	**14,589**
Non-controlling interests	15,196	18,988
Total comprehensive income attributable to MVV Energie AG shareholders	**59,757**	**– 4,399**

Balance Sheet

Balance sheet

Euro 000s	30 Sep 2020	30 Sep 2019	Notes
Assets			
Non-current assets			
Intangible assets	283,964	309,494	14
Property, plant and equipment	2,726,545	2,633,871	15
Right-of-use assets	149,144	149,814	16
Investment properties	2,424	2,606	17
Interests in companies recognised at equity	192,331	188,816	18, 19
Other financial assets	77,735	78,931	21
Other receivables and assets	101,914	70,927	22
Deferred tax assets	30,344	29,368	
	3,564,401	**3,463,827**	
Current assets			
Inventories	198,740	179,074	23
Trade receivables	332,939	365,038	24
Other receivables and assets	563,602	441,538	22
Income tax receivables	28,465	15,156	25
Cash and cash equivalents	343,175	357,564	26
	1,466,921	**1,358,370**	
	5,031,322	**4,822,197**	
Equity and debt			
Equity			27
Share capital	168,721	168,721	
Capital reserve	455,241	455,241	
Accumulated net income	803,101	768,308	
Accumulated other comprehensive income	– 107,925	– 72,554	
Capital of MVV	**1,319,138**	**1,319,716**	
Non-controlling interests	215,162	215,551	
	1,534,300	**1,535,267**	
Non-current debt			
Provisions	208,419	211,849	28, 29
Tax provisions	–	7	28
Financial debt	1,553,168	1,533,537	30
Other liabilities	290,146	220,494	31
Deferred tax liabilities	140,200	143,461	33
	2,191,933	**2,109,348**	
Current debt			
Other provisions	127,903	152,331	28, 29
Tax provisions	1,259	33,816	28
Financial debt	163,523	168,632	30
Trade payables	336,752	361,609	32
Other liabilities	649,247	461,010	31
Income tax liabilities	26,405	184	33
	1,305,089	**1,177,582**	
	5,031,322	**4,822,197**	

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	Accu-mulated 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 October 2018	**168,721**	**455,241**	**798,182**	**18,555**	**12,335**	**– 52,262**	**1,400,772**	**249,694**	**1,650,466**
Other income and expenses recognised in equity	–	–	–	3,161	– 38,378	– 15,165	– 50,382	– 11,288	– 61,670
Result of business operations	–	–	45,983	–	–	–	45,983	30,276	76,259
Total comprehensive income	**–**	**–**	**45,983**	**3,161**	**– 38,378**	**– 15,165**	**– 4,399**	**18,988**	**14,589**
Dividends paid	–	–	– 59,316	–	–	–	– 59,316	– 17,795	– 77,111
Capital increase/reduction at subsidiaries	–	–	–	–	–	–	–	54	54
Change in scope of consolidation/ level of shareholding	–	–	– 16,541	– 893	61	32	– 17,341	– 35,390	– 52,731
Balance at 30 September 2019	**168,721**	**455,241**	**768,308**	**20,823**	**– 25,982**	**– 67,395**	**1,319,716**	**215,551**	**1,535,267**
Balance at 1 October 2019	**168,721**	**455,241**	**768,308**	**20,823**	**– 25,982**	**– 67,395**	**1,319,716**	**215,551**	**1,535,267**
Other income and expenses recognised in equity	–	–	–	– 10,113	– 8,185	– 15,846	– 34,144	– 5,095	– 39,239
Result of business operations	–	–	93,901	–	–	–	93,901	20,291	114,192
Total comprehensive income	**–**	**–**	**93,901**	**– 10,113**	**– 8,185**	**– 15,846**	**59,757**	**15,196**	**74,953**
Dividends paid	–	–	– 59,316	–	–	–	– 59,316	– 15,640	– 74,956
Capital increase/reduction at subsidiaries	–	–	151	–	–	–	151	125	276
Change in scope of consolidation/ level of shareholding	–	–	57	– 1,227	–	–	– 1,170	– 70	– 1,240
Balance at 30 September 2020	**168,721**	**455,241**	**803,101**	**9,483**	**– 34,167**	**– 83,241**	**1,319,138**	**215,162**	**1,534,300**

Cash Flow Statement

Cash flow statement [1]

Euro 000s	**1 Oct 2019 to 30 Sep 2020**	1 Oct 2018 to 30 Sep 2019
Net income for period before taxes on income	161,142	112,414
Amortisation, depreciation and write-ups of intangible assets, property, plant and equipment and investment properties	206,901	182,746
Financial result	48,352	53,070
Interest received	6,557	9,274
Change in non-current provisions	– 432	15,833
Other non-cash income and expenses [2]	30,114	51,025
Result of disposal of non-current assets	110	918
Cash flow before working capital and taxes	**452,744**	**425,280**
Change in other assets [2]	– 37,926	– 117,867
Change in other liabilities [2]	66,069	– 8,034
Change in current provisions	– 29,870	1,978
Income taxes paid	– 68,249	– 63,812
Cash flow from operating activities	**382,768**	**237,545**
Payments for investments in intangible assets, property, plant and equipment and investment properties	– 290,483	– 266,765
Proceeds from disposals of intangible assets, property, plant and equipment and investment properties	23,124	20,200
Proceeds from subsidy payments	11,218	5,316
Proceeds from sale of fully consolidated companies	–	13,197
Proceeds from sale of other financial assets	5,664	11,726
Payments for acquisition of fully consolidated companies and other business units	– 3,861	– 17,263
Payments for other financial assets	– 24,011	– 8,092
Cash flow from investing activities	**– 278,349**	**– 241,681**
Proceeds from taking up of loans	299,150	552,758
Payments for redemption of loans	– 291,820	– 358,838
Dividends paid	– 59,316	– 59,316
Dividends paid to non-controlling interests	– 15,640	– 17,795
Change due to changes in capital at minorities	279	– 14,817
Interest paid	– 45,020	– 51,886
Cash flow from financing activities	**– 112,367**	**50,106**
Cash-effective changes in cash and cash equivalents	– 7,948	45,970
Change in cash and cash equivalents due to currency translation	– 6,441	1,005
Cash and cash equivalents at 1 October 2019 (2018)	357,564	310,589
Cash and cash equivalents at 30 September 2020 (2019)	**343,175**	**357,564**
of which cash and cash equivalents at 30 September 2020 (2019) with restraints on disposal	534	1,833

1 See further disclosures on cash flow statement in Note 37
2 Previous year's figures adjusted

Cash Flow Statement

Cash flow – aggregate presentation

Euro 000s	**1 Oct 2019 to 30 Sep 2020**	1 Oct 2018 to 30 Sep 2019
Cash and cash equivalents at 1 October 2019 (2018)	**357,564**	**310,589**
Cash flow from operating activities	382,768	237,545
Cash flow from investing activities	– 278,349	– 241,681
Cash flow from financing activities	– 112,367	50,106
Change in cash and cash equivalents due to currency translation	– 6,441	1,005
Cash and cash equivalents at 30 September 2020 (2019)	**343,175**	**357,564**

Notes to MVV's 2020 Consolidated Financial Statements

Information about the company

MVV Energie AG has its legal domicile in Mannheim, Germany (Mannheim District Court: HRB 1789). Its business address is at Luisenring 49, 68159 Mannheim. It is the parent company of the MVV Group, which is 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 2020.

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 2020 financial year (1 October 2019 to 30 September 2020). 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 line 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 10 November 2020 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 2020 financial year. These standards and interpretations did not have any material implications for MVV:

Newly applied standards and interpretations

	EU endorsement	Effective date [1]
IAS 28 Long-term Interests in Associates and Joint Ventures: Amendment	8 February 2019	1 January 2019

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

The IASB and the IFRS IC have published standards and interpretations not yet requiring mandatory application in the 2020 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 3 Definition of a Business	21 April 2020	1 January 2020
IAS 16 Property, Plant and Equipment: Proceeds before Intended Use	outstanding	1 January 2022

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

Consolidation methods

The financial statements included in consolidation have been prepared on the basis of uniform accounting policies as of 30 September 2020.

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 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 in accordance with IFRS 9.

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 financial 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

	Companies fully consolidated [1]	Companies recognised at equity
1 October 2019	166	36
Additions	10	1
Disposals	21	1
30 September 2020	**155**	**36**

1 Opening balance adjusted

MVV Trading GmbH, Mannheim, which is fully consolidated within the MVV Group, acquired 100 % of the shares in EnDaNet GmbH, Erfurt, in the 1st quarter of the 2020 financial year. This company serves to extend the Group's market position. Its existing activities were taken over and are the reason for the goodwill stated.

The fair values of the assets and liabilities of EnDaNet GmbH that were identifiable upon full consolidation are presented in the table below. The acquisition costs of Euro 5,449 thousand correspond to the total of the fair value of the net assets thereby acquired plus goodwill. The share of cash funds paid amounted to Euro 5,050 thousand, while the remainder of the acquisition costs involved variable purchase price components. The share of goodwill attributable to minority interests amounts to Euro 659 thousand. This results from the level of shareholding held in MVV Trading GmbH, which amounts to 78.95 % from the perspective of the MVV Group.

Identifiable assets and liabilities

Euro 000s	EnDaNet GmbH, Erfurt Recognised upon acquisition
Intangible assets	2,413
Property, plant and equipment	9
Right-of-use assets	224
Other financial assets	100
Trade receivables	483
Other receivables and assets	115
Cash and cash equivalents	1,189
Provisions	174
Trade payables	711
Other liabilities	649
Deferred tax liabilities	680
Fair value of net assets	**2,319**
Acquired share of net assets	**2,319**
Goodwill	3,130

Since being fully consolidated, EnDaNet GmbH has contributed sales of Euro 42,881 thousand and earnings of Euro 3,872 thousand after consideration of consolidation-related measures.

Additions to fully consolidated companies also include companies newly founded, mainly involving project companies at the Juwi and Windwärts subgroups, as well as additions due to changes in status at other majority shareholdings.

Disposals from fully consolidated companies mostly relate to mergers of wind power or biomethane companies, as well as to sales of project companies at the Juwi and Windwärts subgroups.

The changes in companies recognised at equity mainly relate to the acquisition of Zschau GmbH, Leimen, and the sale of Recogizer Group GmbH, Bonn.

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 reporting date rate. Consistent with their respective allocation, currency translation differences are recognised either in earnings from operations or the financial result.

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	
	30 Sep 2020	30 Sep 2019	**1 Oct 2019 to 30 Sep 2020**	1 Oct 2018 to 30 Sep 2019
Czech crown (CZK)	27.233	25.816	26.182	25.741
British pound (GBP)	0.912	0.886	0.879	0.884
US dollar (USD)	1.171	1.089	1.121	1.128
South African rand (ZAR)	19.709	16.558	18.184	16.166

Source: European Central Bank

Accounting policies

Assets and liabilities are measured at amortised cost in all cases apart from certain assets, liabilities and derivative financial instruments which IFRS 9 or another relevant standards require to be measured at fair value where this can be reliably determined. Non-current receivables and debt are initially recognised at present 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 when required by International Accounting Standards 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 2 and 40 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, pursuant to IAS 36, nevertheless reduced by any impairment losses arising.

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	5 – 100
Technical equipment and machinery	2 – 55
Transmission grids	2 – 69
Plant and operating equipment	1 – 50

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 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 an allowance schedule.

Trade receivables mainly comprise receivables from contracts with customers. These are recognised when the respective goods are delivered or services performed. Should consideration be conditional on something other than the passage of time, then a contract asset is capitalised and recognised under other assets. 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. Costs of acquisition or manufacture for raw materials and supplies are 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 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.

Leasing

Upon the first-time application of IFRS 16 as of 1 October 2018, the previous classification of leases at the lessee as operating or finance leases was abolished and replaced by a uniform right-of-use model. Leases are recognised as right-of-use assets and corresponding lease liabilities from the time when the leased item is available for use by the Group. One exception relates to contracts with terms of less than twelve months and leases for which the underlying asset is of low value. These items are permitted to be expensed on a straight-line basis. MVV has drawn on this accounting option. Implementation of IFRS 16 means that, since the 2019 financial year, previously existing operating leases have also triggered capital retention in the form of a right-of-use asset and a liability. Each lease instalment is divided into principal repayments and financing expenses. Financing expenses are charged to earnings over the term of the lease. The right-of-use asset is subject to straight-line depreciation over the shorter of its useful life and the term of the lease contract. Upon initial recognition, lease-related assets and liabilities are measured at present value. Lease payments are discounted at the interest rate implicit in the lease, if this can be determined, and otherwise using the lessee's incremental borrowing rate.

The lease liabilities refer to buildings, various items of technical equipment and plant and operating equipment and include the present values of the following lease payments:

- Fixed payments less any receivable lease incentives
- Variable lease payments dependent on an index or interest rate
- Expected residual payments from residual value guarantees provided by the lessor
- The exercise price for a purchase option when the lessee is reasonably certain to exercise the option
- Penalties for the termination of the lease when the term already accounts for the possibility of the lessee exercising a termination option.

Some lease contracts include extension and termination options. Contractual components and conditions of this kind provide the Group with maximum operating flexibility. In determining the terms of the contracts, the management takes due account of all facts and circumstances which offer an economic incentive to exercise termination options. Changes of terms due to the exercising or otherwise of such options are only accounted for in the term of the contract when they are reasonably certain.

With regard to the accounting treatment of assets held by the Group acting as lessor, the application of IFRS 16 did not necessitate any adjustments. Lease contracts for operating leases in which the Group acts as lessor are recognised through profit or loss on a straight-line basis over the term of the lease. For finance leases, however, the lessor does not count as the economic owner, as a result of which the leased item is derecognised upon the commencement of the lease. The lessor then recognises a receivable in the amount of all lease payments not yet received, including a residual value guarantee and discounted by the interest rate implicit in the lease. Over the term of the finance lease, the lessor increases the lease receivable through profit or loss for interest income and reduces it in equity by the amount of principal payments received from the lessee.

Financial instruments

Primary financial instruments: All primary financial instruments, such as shares and shareholdings, loans, securities, trade receivables, other cash receivables and cash and cash equivalents, are measured at fair value upon addition. Upon subsequent measurement, financial assets are recognised either at fair value or at amortised cost. In the case of subsequent measurement at amortised cost, transaction costs are distributed over the term of the financial instrument using the effective interest method. In other cases, they are expensed directly.

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 taken of market and credit risks when determining fair values.

Subsequent recognition is determined by the contractual cash flow characteristics and the objectives of the business model in which the financial instruments are held. If, with minimal exceptions, the contractual cash flow characteristics of a financial instrument solely comprise payments of principal and interest, the instrument may be recognised at amortised cost using the effective interest method if the business model involves collecting contractual payments from the debtor. If, alongside the collection of contractual cash flows, the business model also involves the possibility of selling the financial instrument, then developments in the fair value of the financial instrument over and above effective interest are recognised in other comprehensive income. In recognising fair value changes in other comprehensive income, due account is taken of deferred taxes. Other business models lead to the recognition of the financial instrument at fair value through profit or loss, particularly when the contractual cash flow characteristics also comprise payments other than principal and interest. Based on their cash flow characteristics, only debt instruments qualify for irrevocable allocation to one of the aforementioned business models upon initial recognition. Any equity instruments held are generally recognised at fair value through profit or loss. Should they be held without any intention to trade, the development in the fair value of the equity instrument may be presented through other comprehensive income, taking due account of deferred taxes, but may not be reclassified to the income statement upon disposal.

For financial instruments that are subject to the effective interest method, impairments that are already expected are recognised in accordance with the expected credit loss model. In the general approach, loss allowances are determined such that a distinction is made as to whether or not the default risk of a financial asset has deteriorated significantly since initial recognition. If the default risk has not changed, the loss allowance is determined on the basis of potential loss events in the next twelve months (12-month expected loss). In the event of a significant deterioration in the default risk that can no longer be classified as low, the loss allowance is based on the lifetime expected credit loss of the financial instrument. In the simplified approach, by contrast, the loss allowance is directly based on lifetime expected credit losses. Alongside trade receivables, lease receivables and contract assets for customer contracts also require application of the simplified approach. Impairments are recognised directly in period earnings and may directly change the carrying amount of the financial instrument or be presented in an allowances schedule.

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.

Financial assets are retired when the contractual rights to cash flows from the asset expire or when the financial asset is transferred, provided that substantially all the risks and rewards incidental to ownership of the asset are 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 currency derivatives relating to operations are recognised as income or expenses under earnings from operations, while changes in the value of interest and currency derivatives not relating to operations are recognised as income or expenses within 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 IFRS 9 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 those derivatives which serve to hedge a fair value and qualify 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 are within the scope of IFRS 9 and are recognised as derivative financial instruments, while the hedged items (sales contracts) are generally not covered by IFRS 9. The accounting treatment under IFRS 9 relates in particular to commodities futures transactions. Where possible, the own use exemption is applied for these energy trading transactions. Other energy trading transactions are recognised as cash flow hedges or as standalone derivatives.

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.

Developments in the fair value of those components of a hedging transaction that are not designated as hedging a risk from a hedged item may be recognised as hedging costs in other comprehensive income and reversed upon recognition of the hedged item through profit or loss.

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.

The items and transactions presented in the consolidated financial statements also regularly trigger tax charges in the form of taxes on income or other types of tax. In order to avoid uncertainties resulting from tax risks, the items and transactions are regularly structured in line with valid statutory requirements and their interpretation in practice.

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 prospective 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 material adjustments 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 the higher of the fair value, less disposal costs, of the cash generating unit and its value in use. This is compared with the carrying amount. To estimate the recoverable amount, 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 flows. 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 are 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.

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.

NOTES TO INCOME STATEMENT

1. Sales after electricity and natural gas taxes

Sales include all revenues generated by the Group's typical business activities. MVV's main products are electricity, heating energy, gas, water and waste incineration and disposal. The Group also generates significant revenues from services and solar and wind power project development services. Revenues from contracts with customers are generally recognised upon delivery to the customer or upon performance of the services for the customer. Delivery is deemed complete when control has been transferred to the customer and consideration is unconditional except for the passage of time. If consideration is conditional on something other than the passage of time, the respective claims are recognised as contract assets.

If one party is mainly responsible for performing the contract, no inventory and default risks are assumed, MVV cannot influence the pricing and remuneration takes the form of a commission payment, then MVV acts as an agent. In this context, the respective sales and cost of materials are netted, leading to an equivalent reduction in income and expenses. The impact of netting is dependent on the future market premium and compensation paid under renewable energies legislation.

A material share of revenues from contracts with customers is performed over a period of time. The percentage of completion is generally determined using the output method. In some cases, application is also made of the input method. Here, however, it is necessary to document that this method also corresponds to the transfer of control.

Revenues from contracts with customers result from the transaction prices allocated to the respective products and services. These correspond to the value of units delivered, including estimated deferrals for units not yet read or billed as of the balance sheet date.

The average payment target amounts to between 14 and 30 days.

The composition of sales broken down into individual segments can be found in Segment Reporting in Note 36.

Sales from contracts with customers (external sales) are broken down by product and presented in the following table:

Sales by product group

Euro 000s	FY 2020	FY 2019
Electricity	1,596,210	1,656,037
Heating energy	374,743	374,362
Gas	585,743	706,389
Water	89,458	89,187
Other sales [1]	785,940	913,494
	3,432,094	**3,739,469**

1 Previous year's figures adjusted. Accounting methodology was changed in connection with NIFRIC "Physical settlement of contracts to buy or sell a non-financial item (IFRS 9)"

Timing of sales recognition

Euro 000s	FY 2020	FY 2019
Sales recognised at a point in time	3,156,188	3,312,630
Electricity	1,596,210	1,656,037
Heating energy	374,743	374,362
Gas	585,743	706,389
Water	89,458	89,187
Other sales [1]	510,034	486,655
Sales recognised over time	275,906	426,839
Project development	225,102	380,019
Operations management services	50,804	46,820
	3,432,094	**3,739,469**

1 Previous year's figures adjusted. Accounting methodology was changed in connection with NIFRIC "Physical settlement of contracts to buy or sell a non-financial item (IFRS 9)".

The previous year's sales figures have been adjusted due to a change in the accounting methodology in connection with NIFRIC "Physical settlement of contracts to buy or sell a non-financial item (IFRS 9)". Sales in the "Other sales" product category increased by Euro 79,727 thousand. The "Other sales" recognised at a point in time showed rose by the same amount.

Other sales (sales by product group) mainly include revenues from waste incineration and consulting services, as well as other sales in business fields not forming part of MVV's core business.

In group currency, sales at our foreign subsidiaries came to Euro 262,857 thousand (previous year: Euro 443,964 thousand). The reduction in this share of sales is chiefly due to the lower number of projects realised abroad.

Sales of Euro 31,075 thousand were included in net contract liabilities at the beginning of the period under report (previous year: Euro 24,395 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 [1]

Euro 000s	FY 2020	FY 2019
Income from IFRS 9 derivatives	110,797	236,728
Reimbursements	21,810	10,209
Reversal of provisions	17,668	15,581
Income from sales of assets and write-ups	14,047	1,716
Agency agreements and personnel supplies	10,234	9,782
Rental income	4,880	3,884
Exchange rate gains	4,021	5,211
Employee benefits	3,210	4,458
Miscellaneous	19,677	25,322
	206,344	**312,891**

1 Previous year's figures adjusted. Accounting methodology was changed in connection with NIFRIC "Physical settlement of contracts to buy or sell a non-financial item (IFRS 9)".

The previous year's figures for other operating income have been reduced by Euro 14,176 thousand due to a change in the accounting methodology in connection with NIFRIC "Physical settlement of contracts to buy or sell a non-financial item (IFRS 9)".

Other operating income particularly includes measurement items for energy trading transactions requiring measurement under IFRS 9. This valuation-dependent income is offset by corresponding expenses.

Reimbursements include repayments made in connection with contracts with suppliers.

Undiscounted income recognised for future lease payments is broken down into its respective maturities and presented in the following table. There are no variable lease payments not linked to an index or an interest rate.

Future income from operating lease payments

Euro 000s	FY 2020	FY 2019
Minimum lease payments with maturities < 1 year	1,857	1,562
Minimum lease payments with maturities > 1 year and < 5 years	3,302	2,940
Minimum lease payments with maturities > 5 years	6,596	2,611

5. Cost of materials

Cost of materials

Euro 000s	FY 2020	FY 2019
Raw materials, supplies and purchased goods [1]	1,807,045	2,010,064
Procurement of wind turbines and solar power systems	141,223	294,378
Purchased services	557,984	562,086
	2,506,252	**2,866,528**

1 Previous year's figures adjusted. Accounting methodology was changed in connection with NIFRIC "Physical settlement of contracts to buy or sell a non-financial item (IFRS 9)".

The previous year's figures for cost of materials have been adjusted due to a change in the accounting methodology in connection with NIFRIC "Physical settlement of contracts to buy or sell a non-financial item (IFRS 9)". The cost of materials for raw materials, supplies and purchased goods rose by Euro 65,574 thousand.

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 2020	FY 2019
Wages and salaries	371,480	358,910
Social security expenses and welfare expenses	63,143	59,934
Pension expenses	21,800	19,385
	456,423	**438,229**

MVV had an annual average of 6,182 employees (previous year: 6,040). This total includes 10 executives (previous year: 10), 5,851 employees (previous year: 5,713), 295 trainees (previous year: 287) and 26 interns/students (previous year: 30).

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 2020	FY 2019
Expenses for IFRS 9 derivatives	122,944	268,529
Contributions, fees and duties	32,183	30,271
Expenses for advisory services	26,262	27,255
Maintenance, repair and IT services	19,632	20,276
Operating taxes (including energy taxes)	14,901	15,796
Rental, leasehold and leasing expenses	13,851	12,327
Other employee-related expenses	10,426	12,605
Public relations expenses	9,720	10,812
Facility management	8,391	7,748
Losses incurred on sales of assets	5,759	3,473
Exchange rate losses	4,951	2,860
Personnel supplies	3,321	4,698
Service contracts	2,529	3,872
Office materials and specialist literature	1,622	1,688
Hospitality expenses	1,308	1,960
Miscellaneous [1]	13,221	30,527
	291,021	**454,697**

1 Previous year's figures adjusted. Accounting methodology was changed in connection with NIFRIC "Physical settlement of contracts to buy or sell a non-financial item (IFRS 9)".

The previous year's figures for other operating expenses have been reduced by Euro 23 thousand due to a change in the accounting methodology in connection with NIFRIC "Physical settlement of contracts to buy or sell a non-financial item (IFRS 9)".

Other operating expenses include negative measurement items for energy trading transactions requiring measurement under IFRS 9. These valuation-dependent expenses are countered by corresponding other operating income.

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.

Income from companies recognised at equity and other income from shareholdings

Euro 000s	FY 2020	FY 2019
Income from companies recognised at equity	21,504	25,332
Income from other shareholdings	– 106	1,229
Expenses/income from sales of financial assets	2,669	– 2,961
	24,067	**23,600**

9. Depreciation and amortisation

Depreciation and amortisation

Euro 000s	FY 2020	FY 2019
Depreciation	206,997	183,493
of which impairment losses	2,161	–

10. Financing income

Financing income

Euro 000s	FY 2020	FY 2019
Interest income from finance leases	3,961	3,540
Income from currency translation in connection with financing activities	3,371	10,579
Income from IFRS 9 measurement	1,254	1,445
Interest income from current account, overnight and fixed-term deposits	901	1,052
Other interest and similar income	2,837	4,894
	12,324	**21,510**

11. Financing expenses

Financing expenses

Euro 000s	FY 2020	FY 2019
Interest expenses from current account, non-current and current loans [1]	40,462	45,053
Expenses from currency translation in connection with financing activities	9,737	10,000
Expenses for IFRS 9 measurement	1,466	742
Compounding of provisions	578	10,990
Other interest and similar expenses [1]	8,433	7,796
	60,676	**74,581**

1 Previous year's figures reclassified

The other interest and similar expenses were reduced by Euro 628 thousand as a result of the capitalisation of borrowing interest (previous year: Euro 3,558 thousand). The financing cost rate thereby assumed ranged from 1.1 % to 2.5 % in the financial year under report and from 1.4 % to 2.5 % in the previous year. Expenses for compounding provisions mainly relate to long-term personnel provisions.

12. Taxes on income

Taxes on income

Euro 000s	FY 2020	FY 2019
Actual taxes	48,405	54,803
Deferred taxes	– 1,455	– 18,648
	46,950	**36,155**

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

Deferred taxes in Germany are calculated on the basis of tax rates applicable at individual companies. These result from the unchanged corporate income tax rate of 15 %, the unchanged solidarity surcharge of 5.5 % and the applicable trade tax rate (currently 12 % to 16 %). 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 income is due on the one hand to tax expenses of Euro 12,454 thousand (previous year: Euro 1,650 thousand) that are attributable to the change in the write-down on losses carried forward and the recognition through profit or loss of losses carried forward, as well as to deferred tax income of Euro 13,909 thousand (previous year: Euro 20,298 thousand) attributable to the arising and/or reversal of temporary differences.

Actual tax expenses were reduced by Euro 10,522 thousand by using tax losses not previously recognised (previous year: Euro 5,646 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 2020	FY 2019
Earnings before taxes (EBT)	**161,142**	**112,414**
Expected tax expenses based on tax rate of 30.3 % (previous year: 30.3 %)	**48,826**	**34,061**
Deviations resulting from trade tax assessment base	1,171	1,216
Deviations from expected tax rate	– 5,071	– 4,884
Utilisation of losses carried forward, change in write-down for losses and losses for which no deferred taxes are recognised	12,447	1,716
Non-deductible expenses	10,380	8,298
Tax-exempt income	– 12,856	– 7,098
Income from shareholdings recognised at equity	– 3,299	– 4,113
Permanent differences	4,913	5,248
Taxes for previous years	– 13,223	1,225
Goodwill impairments	2,517	–
Miscellaneous	1,145	486
Effective tax expenses	**46,950**	**36,155**
Effective tax rate (%)	**29.1**	**32.2**

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 2020	FY 2019
Share of earnings attributable to MVV Energie AG shareholders (Euro 000s)	93,901	45,983
Number of shares (weighted average in 000s)	65,907	65,907
Earnings per share (Euro)	1.42	0.70
Dividend per share (Euro)	0.95	0.90

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

The proposals concerning the level of dividend and the appropriation of profit for the 2019 financial year were accepted by the Annual General Meeting on 13 March 2020. A dividend of Euro 59,316 thousand was distributed.

Given the company's earnings performance, the Executive Board has decided to propose an increase in the dividend of Euro 0.05 per share to Euro 0.95 per share for approval by the Annual General Meeting on 12 March 2021. This would result in a distribution of Euro 62,611 thousand. The Supervisory Board will decide in December 2020 on its dividend proposal to the Annual General Meeting.

NOTES TO BALANCE SHEET

14. Intangible assets

Intangible assets include 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. As in the previous year, no intangible assets are subject to restrictions on disposal.

MVV performs only a low volume of research and development. The volume of research and development expenses qualifying under IFRS came to Euro 803 thousand in the 2020 financial year (previous year: Euro 575 thousand). Development expenses capitalised under IAS 38 came to Euro 257 thousand (previous year: Euro 334 thousand). These mainly involve the development of a global project database for solar and wind power projects at the Juwi subgroup.

The goodwill impairment tests performed in the 2020 financial year were based on determining the recoverable amounts of the cash generating units to which goodwill was allocated. These still correspond to the legal subgroups.

As no market prices or other binding indicators for the value of the units were available, their fair values less costs to sell were determined using discounted cash flow methods. These correspond to Level 3 measurements in the IFRS 13 hierarchy. Taking due account of corresponding expected prices from relevant and validated market forecasts, the historic cash flows of the units were extrapolated over a forecast period of three to five years and discounted using discount rates (weighted costs of capital) of 4.3 % to 10.2 % before taxes (previous year: 5.3 % to 11.5 %). A growth rate of 0.5 % was assumed for the perpetuity included in the calculation.

A sensitivity analysis varying the discount rate referred to by 0.5 % mostly did not produce any changes in the findings of the impairment test. A reduction in the discount rate by – 0.5 % raises the recoverable amount by between 12.5 % and 16.2 %. An increase in the discount rate by + 0.5 % lowers the recoverable amount by between 10.0 % and 12.3 %.

The carrying amounts stated for goodwill are structured as follows:

Goodwill carrying amounts

Euro 000s	**30 Sep 2020**	30 Sep 2019
Juwi subgroup	74,970	74,970
Energieversorgung Offenbach subgroup	75,894	75,894
MVV Enamic subgroup	36,233	44,535
Windwärts subgroup	3,910	3,910
MVV Energie CZ subgroup	5,885	6,257
MVV Umwelt subgroup	3,080	3,080
Other subgroups	3,023	552
	202,995	**209,198**

The increase in goodwill referring to other subgroups was due to the acquisition by MVV Trading GmbH of 100 % of the shares in EnDaNet GmbH in the 1st quarter of the 2020 financial year. The goodwill thereby arising at MVV Trading GmbH amounts to Euro 3,130 thousand. The share of goodwill attributable to MVV comes to Euro 2,471 thousand.

The write-down of goodwill at the MVV Enamic subgroup was primarily due to the reduction in earnings prospects resulting from slower developments in demand for energy efficiency solutions at the cash generating units. In 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 4.9 % after taxes.

Intangible assets

Euro 000s	Concessions, industrial property rights and similar rights and values	Goodwill	Advance payments	**Total**
Gross value at 1 October 2018	347,649	243,329	6,324	597,302
Change in scope of consolidation	1,546	12,452	–	13,998
Currency adjustments	36	– 31	–	5
Additions	3,558	–	4,438	7,996
Disposals	– 19,287	–	–	– 19,287
Reclassifications	2,383	–	– 2,440	– 57
Gross value at 30 September 2019	**335,885**	**255,750**	**8,322**	**599,957**
Amortisation at 1 October 2018	– 234,819	– 46,560	–	– 281,379
Change in scope of consolidation	2,839	–	–	2,839
Currency adjustments	3	8	–	11
Scheduled amortisation	– 14,152	–	–	– 14,152
Disposals	2,221	–	–	2,221
Reclassifications	– 3	–	–	– 3
Amortisation at 30 September 2019	**– 243,911**	**– 46,552**	**–**	**– 290,463**
Net value at 30 September 2019	**91,974**	**209,198**	**8,322**	**309,494**
Gross value at 1 October 2019	335,885	255,750	8,322	599,957
Change in scope of consolidation	2,413	2,471	–	4,884
Currency adjustments	– 727	– 497	– 9	– 1,233
Additions	7,536	–	3,631	11,167
Disposals	– 11,375	–	–	– 11,375
Reclassifications	6,791	–	– 6,610	181
Gross value at 30 September 2020	**340,523**	**257,724**	**5,334**	**603,581**
Amortisation at 1 October 2019	– 243,911	– 46,552	–	– 290,463
Currency adjustments	230	125	–	355
Scheduled amortisation	– 23,284	–	–	– 23,284
Impairment losses	–	– 8,302	–	– 8,302
Disposals	2,077	–	–	2,077
Amortisation at 30 September 2020	**– 264,888**	**– 54,729**	**–**	**– 319,617**
Net value at 30 September 2020	**75,635**	**202,995**	**5,334**	**283,964**

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 2018	890,453	4,540,024	178,896	315,121	5,924,494
Change in scope of consolidation	1,679	– 2,497	314	100	– 404
Currency adjustments	– 124	– 23	54	– 40	– 133
Additions	3,724	40,285	6,993	210,832	261,834
Subsidy payments received	– 620	– 4,171	– 11	– 514	– 5,316
Disposals	– 2,100	– 21,800	– 3,671	– 898	– 28,469
Reclassifications	7,827	42,097	1,212	– 51,079	57
Gross value at 30 September 2019	**900,839**	**4,593,915**	**183,787**	**473,522**	**6,152,063**
Depreciation at 1 October 2018	– 440,828	– 2,817,330	– 132,887	– 79	– 3,391,124
Change in scope of consolidation	217	1,429	2,299	–	3,945
Currency adjustments	154	329	– 29	–	454
Scheduled depreciation	– 21,141	– 123,129	– 9,730	–	– 154,000
Write-ups	–	652	96	–	748
Disposals	1,747	16,645	3,390	–	21,782
Reclassifications	60	42	– 96	– 3	3
Depreciation at 30 September 2019	**– 459,791**	**– 2,921,362**	**– 136,957**	**– 82**	**– 3,518,192**
Net value at 30 September 2019	**441,048**	**1,672,553**	**46,830**	**473,440**	**2,633,871**
Gross value at 1 October 2019	900,839	4,593,915	183,787	473,522	6,152,063
Change in scope of consolidation	–	–	8	–	8
Currency adjustments	– 10,549	– 16,452	– 352	– 3,096	– 30,449
Additions	6,549	102,683	7,769	170,638	287,639
Subsidy payments received	– 144	– 10,885	– 150	– 39	– 11,218
Disposals	– 7,640	– 51,663	– 4,433	– 2,515	– 66,251
Reclassifications	68,000	253,721	1,289	– 316,865	6,145
Gross value at 30 September 2020	**957,055**	**4,871,319**	**187,918**	**321,645**	**6,337,937**
Depreciation at 1 October 2019	– 459,791	– 2,921,362	– 136,957	– 82	– 3,518,192
Change in scope of consolidation	–	–	1	–	1
Currency adjustments	4,235	8,509	260	4	13,008
Scheduled depreciation	– 22,511	– 132,146	– 9,686	–	– 164,343
Write-ups	2,266	6,131	–	–	8,397
Impairment losses	– 68	– 1,994	–	–	– 2,062
Disposals	5,903	41,910	3,986	–	51,799
Reclassifications	158	– 158	–	–	–
Depreciation at 30 September 2020	– 469,808	– 2,999,110	– 142,396	– 78	– 3,611,392
Net value at 30 September 2020	**487,247**	**1,872,209**	**45,522**	**321,567**	**2,726,545**

The property, plant and equipment presented mainly relates to internally used property, plant and equipment.

Property, plant and equipment up to an equivalent value of Euro 9 million (previous year: Euro 43 million) has been provided as security for financial debt. This involves land and buildings, technical equipment and machinery. Property, plant and equipment of Euro 101 million is subject to restrictions on disposal (previous year: Euro 110 million).

Subsidy payments received involve government grants received in the 2020 financial year chiefly in connection with urban planning measures for water and district heating pipelines and for combined heat and power generation. There are no conditions that have not been met or other performance uncertainties in connection with these subsidy payments.

In addition to the construction of a gas-fired CHP plant in Kiel, the largest additions to advance payments and construction in progress in the 2020 financial year involved the connection of a waste-fired CHP plant to the district heating grid in Mannheim and the construction of an energy from waste plant in the UK. Advance payments account for an immaterial share of advance payments and construction.

The impairment losses arising in the 2020 financial year were primarily due to the development in earnings at individual cash generating units. The earnings strength of three biogas plants in the Customer Solutions segment is lower than originally assessed. The management saw this as indicating a need to perform impairment tests on these cash generating units. The future values in use were determined using a discount rate of 4.9 % after taxes.

The income from write-ups recognised in the 2020 financial year was due to the fact that the reasons for a historic impairment no longer applied. The earnings strength of a cash generating unit in the Customer Solutions segment developed better than originally assessed. The management saw this as indicating a need to perform an impairment test on this cash generating unit. This confirmed the increased earnings strength. The future values in use were determined using a discount rate of 4.9 % after taxes.

16. Leases as lessee

The development in right-of-use assets recognised in connection with leased items is presented in the table below:

Right-of-use assets

Euro 000s	Land and buildings	IT hardware and software	Vehicles	Technical equipment and machinery	Plant and office equipment	Other leased items	**Total**
Opening balance at 1 October 2019	107,305	947	3,440	37,655	7	460	149,814
Depreciation and amortisation	– 10,711	– 521	– 2,592	– 3,172	– 26	– 188	– 17,210
Impairment losses	– 99	–	–	–	–	–	– 99
Additions	14,494	174	3,580	2,465	52	40	20,805
Other changes	6,001	–	– 37	– 10,129	–	– 1	– 4,166
Closing balance at 30 September 2020	**116,990**	**600**	**4,391**	**26,819**	**33**	**311**	**149,144**

Further disclosures about the leases recognised in MVV's capacity as lessee are presented in the following table:

Disclosures on leases (as lessee)

Euro 000s	**FY 2020**	FY 2019
Interest expenses for lease liabilities	4,289	4,470
Outflow of cash for leases	16,036	15,562
Expenses for short-term leases	1,309	2,633
Expenses for low-value leases	509	570
Expenses for variable lease payments	311	367
Income from sub-lease arrangements	308	719

With regard to future lease payments, the windfarms in some cases face risks resulting from variable leasehold payments that are dependent on the amount of feed-in revenues. Further risks involve future developments in consumer price indices, to which lease payments are in some cases linked.

MVV has only one sale and leaseback transaction, which was concluded in the past in order to procure liquidity. The outflow of funds for this transaction, involving the deployment of an ERP system, amounted to Euro 77 thousand in the period under report.

17. Investment properties

Investment properties involve a piece of land let out in the USA. Rental income amounted to Euro 32 thousand in the 2020 financial year (previous year: Euro 34 thousand). As in the previous year, direct operating expenses amounted to Euro 0 thousand. The fair value of investment properties is at least equivalent to the carrying amount.

Investment properties

Euro 000s	**FY 2020**	FY 2019
Gross value at 1 October	2,606	2,451
Currency adjustments	– 182	155
Gross value at 30 September	**2,424**	**2,606**
Depreciation at 1 October	–	–
Depreciation at 30 September	–	–
Net value at 30 September	**2,424**	**2,606**

18. Joint ventures

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

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.

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 taken jointly by the shareholders.

The assets, liabilities, equity, 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

	Grosskraftwerk Mannheim AG, Mannheim		Stadtwerke Ingolstadt Beteiligungen GmbH, Ingolstadt	
Euro 000s	**Financial year**	Previous year	**Financial year**	Previous year
Sales excluding energy taxes	585,404	754,058	188,633	191,626
Scheduled depreciation and amortisation	104,230	– 98,036	– 14,450	– 13,953
Interest income	2	–	639	92
Interest expenses	– 46,670	– 52,705	– 897	– 1,009
Income tax expenses/income	– 11,291	– 7,212	– 6,967	– 7,639
Annual net income	26,659	39,691	16,634	19,593
Other income and expenses	– 64,618	– 3,603	128	– 337
Total comprehensive income for period	**– 37,959**	**36,088**	**16,762**	**19,256**
Dividends received from material joint ventures	–	–	8,576	8,883

Further key financial figures for material joint ventures

	Grosskraftwerk Mannheim AG, Mannheim		Stadtwerke Ingolstadt Beteiligungen GmbH, Ingolstadt	
Euro 000s	**Financial year**	Previous year	**Financial year**	Previous year
Assets	**1,887,580**	**2,001,398**	**273,803**	**269,923**
Non-current assets	1,656,133	1,723,518	236,566	234,275
Current assets	231,447	277,880	37,237	35,648
of which cash and cash equivalents	7,028	1,298	963	877
Equity and debt	**1,887,580**	**2,001,398**	**273,803**	**269,923**
Equity	114,158	152,117	65,731	66,689
Non-current provisions	723,956	632,599	6,517	6,697
Non-current debt and other liability items	727,626	893,510	83,807	96,067
of which non-current financial debt	668,500	830,000	18,747	22,050
Current provisions	150,521	187,526	60	124
Current debt and other liability items	171,319	135,646	117,688	100,346
of which current financial debt	150,403	99,621	87,698	80,406

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

	Grosskraftwerk Mannheim AG, Mannheim		Stadtwerke Ingolstadt Beteiligungen GmbH, Ingolstadt	
Euro 000s	**Financial year**	Previous year	**Financial year**	Previous year
Net assets at 1 October	152,117	116,029	66,689	65,787
Profit/loss for period	26,659	39,691	16,634	19,593
Distribution	–	–	– 17,720	– 18,354
Other income and expenses	– 64,618	– 3,603	128	– 337
Net assets at 30 September	**114,158**	**152,117**	**65,731**	**66,689**
Group share of net assets	31,964	42,593	31,814	32,277
Other items	1,897	1,897	– 154	– 154
Goodwill			53,759	53,759
Carrying amount of interest in joint ventures	**33,861**	**44,490**	**85,419**	**85,882**

Other comprehensive income at material joint ventures includes items resulting from the measurement of pension obligations.

The consolidated joint venture Grosskraftwerk Mannheim AG has a financial year ending on 31 December, and thus deviating from MVV's financial year. Its results have been recognised at the Group accordingly. As this company involves a power plant 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 price is available.

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	5,369	12,469
Other income and expenses	– 360	–
Total comprehensive income for period	5,009	12,469
Carrying amount of interest in non-material joint ventures	**58,835**	**45,416**

19. Associates

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	3,007	1,743
Total comprehensive income for period	3,007	1,743
Carrying amount of interest in non-material joint ventures	**14,216**	**13,028**

The income from shareholdings collected by MVV from associates amounted to Euro 230 thousand in the 2020 financial year (previous year: Euro 53 thousand).

MVV's share of the contingent liabilities at associates amounted to Euro 1,690 thousand (previous year: Euro 1,775 thousand).

20. 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 with non-controlling interests: Stadtwerke Kiel AG, Kiel, and Energieversorgung Offenbach AG, Offenbach am Main.

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 2019 to 30 Sep 2020	1 Oct 2018 to 30 Sep 2019
Sales excluding energy taxes	354,896	341,420
Annual net income	11,380	5,361
Other income and expenses	– 8,411	– 3,784
Total comprehensive income for period	**2,969**	**1,577**
Total comprehensive income attributable to non-controlling interests	1,484	788
Dividends paid (to non-controlling shareholders)	6,633	5,468

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

Euro 000s	1 Oct 2019 to 30 Sep 2020	1 Oct 2018 to 30 Sep 2019
Sales excluding energy taxes	712,670	614,123
Annual net income	25,936	– 6,036
Other income and expenses	1,375	– 4,882
Total comprehensive income for period	**27,311**	**– 10,918**
Total comprehensive income attributable to non-controlling interests	13,382	– 5,350
Dividends paid (to non-controlling shareholders)	6,270	9,316

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

Euro 000s	1 Oct 2019 to 30 Sep 2020	1 Oct 2018 to 30 Sep 2019
Assets	**415,889**	**374,889**
Non-current assets	333,301	299,474
Current assets	82,588	75,415
of which cash and cash equivalents	21,892	13,871
Equity and debt	**415,889**	**374,889**
Equity	139,056	149,354
Non-current provisions	32,487	37,909
Non-current debt and other liability items	163,554	134,822
of which non-current financial debt	130,227	111,021
Current provisions	4,932	6,815
Current debt and other liability items	75,860	45,989
of which current financial debt	7,815	1,858

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

Euro 000s	1 Oct 2019 to 30 Sep 2020	1 Oct 2018 to 30 Sep 2019
Assets	**711,181**	**709,318**
Non-current assets	656,770	633,435
Current assets	54,411	75,883
of which cash and cash equivalents	1,976	13,648
Equity and debt	**711,181**	**709,318**
Equity	224,105	209,590
Non-current provisions	32,774	25,802
Non-current debt and other liability items	299,617	327,713
of which non-current financial debt	263,626	289,063
Current provisions	15,343	8,847
Current debt and other liability items	139,342	137,366
of which current financial debt	56,621	57,545

Total non-controlled interests in subsidiaries amounted to Euro 215,162 thousand in the period under report, of which Euro 109,543 thousand related to Stadtwerke Kiel AG, Kiel, Euro 50,737 thousand to Energieversorgung Offenbach AG, Offenbach am Main, and Euro 54,882 thousand to non-material subsidiaries.

21. Other financial assets

Write-downs and the development in other financial assets are presented in the line items "Income from companies recognised at equity and other income from shareholdings (Note 8) and "Financing income" (Note 35).

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 are measured at amortised cost. Other shareholdings are measured at fair value. These items are adjusted when necessary if cash flows fall short of expectations or default risks materialise. The other shareholdings recognised under other financial assets involve minority shareholdings.

The loans included in this line item are measured at amortised cost. Lease receivables are classified under leases, with finance leases recognised as receivables in the amount of the present value of minimum lease payments (net investment value). Loans and lease receivables have fixed interest rates, with an average interest rate of 4.8 % (previous year: 4.4 %). The average period for which interest rates remain fixed amounts to 2.1 years in the case of fixed-interest loans (previous year: 4.4 years) and 6.5 years in the case of finance leases (previous year: 6.2 years).

Default risks identifiable for financial assets are accounted for by way of adjustments recognised under income from shareholdings.

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 and housing concepts for data centres, MVV acts as lessor in the context of finance lease arrangements. The reconciliation of the minimum lease payments with net investments in leases is as follows:

Reconciliation of net investments in leases

Euro 000s	**30 Sep 2020**	30 Sep 2019
Minimum lease payments with maturities < 1 year	13,909	12,432
Minimum lease payments with maturities > 1 year and < 5 years	44,550	44,275
of which minimum lease payments with maturities > 1 year and < 2 years	13,785	12,791
of which minimum lease payments with maturities > 2 years and < 3 years	10,110	11,678
of which minimum lease payments with maturities > 3 years and < 4 years	10,332	10,259
of which minimum lease payments with maturities > 4 years and < 5 years	10,323	9,547
Minimum lease payments with maturities > 5 years	32,297	31,838
Total minimum lease payments	**90,756**	**88,545**
Less financing income not yet realised	– 18,657	– 15,663
Net investments in finance leases	**72,099**	**72,882**

Further disclosures on leases involving finance lease arrangements are summarised in the following table:

Disclosures on leases involving finance leases (as lessor)

Euro 000s	**FY 2020**	FY 2019
Financing income from net investment in lease	3,961	3,540
Profit/loss on sale	91	64

22. 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 2020			30 September 2019		
Euro 000s	Non-current	Current	Total	Non-current	Current	Total
Financial receivables and assets						
Derivative financial instruments	81,246	367,308	448,554	54,416	266,113	320,529
Receivables from security deposits for energy trading transactions	–	21,763	21,763	–	14,088	14,088
Receivables in connection with finance leases	–	10,476	10,476	–	9,293	9,293
Suppliers with debit balances	–	7,730	7,730	–	3,957	3,957
Loans	–	1,245	1,245	–	6,378	6,378
Receivables from employees	–	269	269	–	352	352
Escrow accounts	–	35	35	–	35	35
Miscellaneous other financial assets	6,752	18,346	25,098	4,411	7,958	12,369
Non-financial receivables and assets						
Project development contract assets	–	6,019	6,019	–	64,119	64,119
Other contract assets	3,098	49,411	52,509	3,308	408	3,716
Other tax receivables	–	66,893	66,893	–	52,393	52,393
Deferred expenses and accrued income	6,250	7,422	13,672	3,024	13,217	16,241
Emission rights	–	2,462	2,462	–	113	113
Miscellaneous other non-financial assets	4,568	4,223	8,791	5,768	3,114	8,882
	101,914	**563,602**	**665,516**	**70,927**	**441,538**	**512,465**

Derivative financial instruments (financial receivables and assets)

	30 September 2020			30 September 2019		
Euro 000s	Non-current	Current	Total	Non-current	Current	Total
Derivative financial instruments	81,246	367,308	448,554	54,416	266,113	320,529
of which without IFRS 9 hedges	52,935	295,415	348,350	34,066	231,876	265,942
of which with IFRS 9 hedges	28,311	71,893	100,204	20,350	34,237	54,587

Derivative financial instruments increased in value compared with the previous year. This was due in particular to more substantial changes in market prices and the resultant rise in fair values of energy trading transactions recognised under IFRS 9. Derivative financial instruments 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.

The current portion of lease receivables is reported under miscellaneous other financial 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.

Miscellaneous other financial assets rose by Euro 12,729 thousand in the financial year under report. This line item mainly includes a receivable due from a shareholding and a receivable due from a transmission grid operator.

Due to the settlement of completed projects, project development contract assets showed a significant reduction of Euro 58,100 thousand. By contrast, other contract assets rose by Euro 48,793 thousand, with this increase being due to an investment project in which a subsidiary is acting as general contractor.

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

Miscellaneous other non-financial assets include expenses of Euro 6,245 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 terms. Furthermore, this item also includes input taxes that are not yet deductible.

The costs of acquiring contracts (customer acquisition costs) form part of the miscellaneous other financial assets line item, which are capitalised pursuant to IFRS 15. Costs relating to contract terms of less than one year are directly expensed.

These costs are amortised over the average contractual term and developed as follows:

Customer acquisitions costs pursuant to IFRS 15

Euro 000s	**FY 2020**	FY 2019
Balance at 1 October	444	–
Balance at 30 September	1,071	444

Other receivables and assets

	30 September 2020			30 September 2019		
Euro 000s	**Non-current**	**Current**	**Total**	Non-current	Current	Total
Other receivables and assets						
from third parties	101,120	509,809	610,929	70,311	434,114	504,425
from other majority shareholdings	–	919	919	–	1,211	1,211
from companies recognised at equity	794	52,857	53,651	616	6,196	6,812
from other shareholdings	–	17	17	–	17	17
	101,914	**563,602**	**665,516**	**70,927**	**441,538**	**512,465**

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 parties. These involve margins. To reduce these counterparty risks, payments are made to the European Energy Exchange (EEX). These are included in the receivables from security deposits for energy trading transactions line item. Receivables from security deposits increased year-on-year to Euro 21,763 thousand (previous year: Euro 14,088 thousand).

The opening and closing balances of contract assets recognised under IFRS 15 are presented in the following table:

Contract assets

Euro 000s	FY 2020	FY 2019
Balance at 1 October	67,835	21,048
Balance at 30 September	58,528	67,835

23. Inventories

Inventories

Euro 000s	30 Sep 2020	30 Sep 2019
Raw materials and supplies	91,247	48,229
Finished and unfinished products and services (project rights)	44,437	44,517
Finished and unfinished products and services (other) and merchandise	48,038	47,401
Advance payments	7,137	33,663
Commodity trading assets	7,881	5,264
	198,740	179,074

Write-downs of Euro 1,695 thousand were recognised for inventories (previous year: Euro 698 thousand). Write-ups of Euro 1,475 thousand were included due to higher net disposal prices (previous year: Euro 2,168 thousand).

The commodity trading assets item includes inventories relating to special gas storage transactions.

24. Trade receivables

Trade receivables

Euro 000s	30 Sep 2020	30 Sep 2019
Trade receivables	332,939	365,038
of which due from other majority shareholdings	238	110
of which due from companies recognised at equity	15,081	17,550
of which due from other shareholdings	387	1,470

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.

Trade receivables mainly comprise receivables recognised under IFRS 15.

The write-downs and maturity structures for trade receivables have been presented under Note 35.

25. Income tax receivables

The income tax receivables of Euro 28,465 thousand (previous year: Euro 15,156 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 corporate income tax receivables at Juwi Inc., which resulted from legislative amendments in the USA, as well as to higher income tax receivables in Germany.

26. 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 1,595 thousand (previous year: Euro 1,795 thousand). The disposal of fully consolidated companies and other business units led to the retirement of cash and cash equivalents of Euro 198 thousand (previous year: Euro 1,774 thousand).

Within the framework of short-term liquidity management structures, credit balances are exclusively deposited at banks of impeccable creditworthiness.

27. Equity

The structure and development of equity are 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 50.10 % of the shares at 30 September 2020, while FS DE Energy GmbH held 45.68 % of the shares. The remaining 4.22 % of the shares are in free float.

Authorised capital II: By resolution dated 8 March 2019, the Annual General Meeting of MVV Energie AG authorised the Executive Board until 7 March 2024 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 maximum total of up to 9,880,000 new individual registered shares. 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 2020, the Annual General Meeting authorised the Executive Board until 12 March 2025 to acquire treasury stock up to 10 % of the share capital existing at the time at which the Annual General Meeting adopted the resolution or, if lower, at the time at which the authorisation is exercised. The Executive Board of MVV Energie AG has not yet made any use of this authorisation.

Capital reserve: This relates to MVV Energie AG and includes external flows of funds requiring inclusion pursuant to § 272 HGB. The variance of Euro 3,705 thousand to the capital reserve presented 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 IFRS 9, as well as currency translation differences arising upon the translation of foreign financial statements and actuarial gains and losses for defined benefit pension plans. Expenses of Euro 8,185 thousand were recognised directly in equity in the financial year under report in connection with the fair value measurement of financial instruments (previous year: expenses of Euro 38,378 thousand).

28. Provisions

Provisions

Euro 000s	Balance at 1 Oct 2019	Change in scope of consolida-tion	Currency adjustments	Utilised	Reserved	Added	Reclassified	Interest component	**Balance at 30 Sep 2020**
Non-current provisions									
Pensions and similar obligations	**103,807**	**–**	**–**	**– 2,681**		**– 1,243**	**–**	**375**	**100,258**
Tax provisions	**7**	**–**	**–**	**–**	**–**	**–**	**– 7**	**–**	**–**
Other provisions									–
Personnel-related obligations	44,583	– 1,101	– 12	– 1,535	– 41	2,051	– 4,361	125	39,709
Refurbishment, dismantling and warranty obligations	36,957	–	– 59	– 370	– 327	8,973	– 2,107	1	43,068
Provisions for litigation and contract risks	1,183	–	–	– 205	– 331	379	– 14	–	1,012
Miscellaneous contingencies	25,319	–	–	– 1,235	– 5,211	5,422	–	77	24,372
Total other provisions	**108,042**	**– 1,101**	**– 71**	**– 3,345**	**– 5,910**	**16,825**	**– 6,482**	**203**	**108,161**
Total non-current provisions	**211,856**	**– 1,101**	**– 71**	**– 6,026**	**– 5,910**	**15,582**	**– 6,489**	**578**	**208,419**
									–
Current provisions									–
Tax provisions	**33,816**	**–**	**– 65**	**– 17,865**	**– 3,081**	**14,639**	**– 26,185**	**–**	**1,259**
Other provisions									–
Personnel-related obligations	42,977	139	– 227	– 37,104	– 2,083	32,644	4,361	–	40,707
Services not yet invoiced	54,973	–	– 125	– 47,909	– 2,183	38,819	–	–	43,575
Refurbishment, dismantling and warranty obligations	20,243	–	– 1,139	– 2,858	– 2,584	2,940	2,107	–	18,709
Provisions for litigation and contract risks	3,143	–	– 45	– 700	– 298	1,911	14	–	4,025
Miscellaneous contingencies	30,995	165	83	– 14,558	– 4,605	8,807	–	–	20,887
Total other provisions	**152,331**	**304**	**– 1,453**	**– 103,129**	**– 11,753**	**85,121**	**6,482**	**–**	**127,903**
Total current provisions	**186,147**	**304**	**– 1,518**	**– 120,994**	**– 14,834**	**99,760**	**– 19,703**	**–**	**129,162**
									–
Total provisions	**398,003**	**– 797**	**– 1,589**	**– 127,020**	**– 20,744**	**115,342**	**– 26,192**	**578**	**337,581**

Provisions broken down by maturity

	30 September 2020			30 September 2019		
Euro 000s	**Non-current**	**Current**	**Total**	Non-current	Current	Total
Provisions for pensions and similar obligations	100,258	–	100,258	103,807	–	103,807
Tax provisions	–	1,259	1,259	7	33,816	33,823
Personnel-related obligations	39,709	40,707	80,416	44,583	42,977	87,560
Services not yet invoiced	–	43,575	43,575	–	54,973	54,973
Refurbishment, dismantling and warranty obligations	43,068	18,709	61,777	36,957	20,243	57,200
Provisions for litigation and contract risks	1,012	4,025	5,037	1,183	3,143	4,326
Miscellaneous contingencies	24,372	20,887	45,259	25,319	30,995	56,314
	208,419	**129,162**	**337,581**	**211,856**	**186,147**	**398,003**

MVV reviewed its tax provisions in the 2020 financial year to account for the "Decision on presentation of uncertain tax liabilities (or assets)" of the IFRS IC on 25 September 2019. In this context, income tax items of Euro 26,192 thousand were reclassified out of tax provisions not meeting the requirements of IFRIC 23 to tax liabilities. In future, all income tax items for which a tax assessment notice has been received will be presented under tax liabilities in the balance sheet. Provisions will only be stated for uncertain income tax items in cases where the fiscal authorities are unlikely to recognise the respective item.

Tax provisions include other provisions for energy and valued added taxes as of the reporting date.

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 to measure pensions and similar obligations.

The personnel-related obligations 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 refurbishment, 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 utilisation is uncertain. The value is based on the most likely outcome of litigation expected on the basis of the information currently available. Furthermore, this category also includes provisions for onerous contracts.

Miscellaneous contingencies mainly include provisions for risks relating to contractual obligations for completed projects and for the renewal of infrastructure assets and provisions for risks associated with a price adjustment clause.

The provisions recognised are utilised in line with the terms to which they are allocated. The provisions for compensation payments recognised in the "Personnel-related obligations" category within other provisions are discounted with a discount rate of 0.6 %. All other personnel-related provisions recognised in this category are discounted with discount rates corresponding to their individual terms. Other provisions in all other categories are discounted with a discount rate of 0 %.

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 rate and salaries of the employees thereby covered, no data 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 remuneration 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 2021 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. Payments of Euro 31,603 thousand were made into the state pension systems in the 2020 financial year (previous year: Euro 30,303 thousand). Moreover, an amount of Euro 15,749 thousand was paid into defined contribution pension schemes (previous year: Euro 15,259 thousand).

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

Provisions for pension 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.

Consistent with the relevant accounting requirements, the yield on high-quality corporate bonds with congruent terms is referred to when determining the discount rate for future payment obligations for pensions, perquisites and compensation payments. For the euro area, the selection of underlying corporate bonds so far used to determine the discount rate was refined as of 30 September 2020. This has resulted in the more accurate exclusion of those corporate bonds whose yield/risk profiles basically correspond to those of government bonds.

The discount rate calculated on this basis amounted to 0.6 % as of 30 September 2020 (previous year: 0.3 %). Without the aforementioned adjustment, this would have been 0.4 % lower. Using the new procedure, the provision for pension obligations came to Euro 102,258 thousand as of 30 September 2020. Based on a discount rate of 0.2 %, the pension obligations in the euro area would have been around Euro 5,614 thousand higher. The differential amount has been treated as a change in accounting estimate pursuant to IAS 8 and recognised in equity in the statement of comprehensive income.

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 2020:

Parameter

	FY 2020	FY 2019
Discount rate	0.6 %	0.3 %
Future pay rises	2.0-2.5 %	2.1-3.0 %
Future pension increases	1.6-3.0 %	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 2020**	FY 2019
Service cost	3,491	2,075
Interest expenses	375	1,598
	3,866	3,673

The interest expenses for vested pension claims are reported in the income statement under financing expenses (compounding of provisions). 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 2020			30 September 2019		
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	104,521	714	103,807	78,199	648	77,551
Current service cost	3,491	–	3,491	2,075	–	2,075
Interest expenses (interest income)	375	–	375	1,598	14	1,584
Remeasurement						
(i) Income from plan assets (excluding amounts included in interest income from plan assets)	–	2	– 2	–	4	– 4
(ii) Actuarial gains/losses						
of which due to changes in financial assumptions	– 3,891	40	– 3,931	26,357	48	26,309
of which due to changes in demographic assumptions	12	–	12	280	–	280
of which due to changes in experience adjustments	– 849	–	– 849	– 2,437	–	– 2,437
Payments made to beneficiaries	– 2,680	–	– 2,680	– 2,675	–	– 2,675
Employer contributions	11	– 24	35	–	–	–
Change in scope of consolidation	–	–	–	1,124	–	1,124
Balance at 30 September	**100,990**	**732**	**100,258**	**104,521**	**714**	**103,807**

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 2020	FY 2019
Present value of defined benefit obligation	100,990	104,521
Fair value of plan assets	732	714
Provisions recognised at 30 September	**100,258**	**103,807**

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 2020	FY 2019
Accumulated actuarial gains (+) and losses (-) recognised in equity at 1 October	– 26,693	– 12,942
Actuarial gains (+) and losses (-) recognised in equity	2,370	– 13,751
Accumulated actuarial gains (+) and losses (-) recognised in equity at 30 September	**– 24,323**	**– 26,693**

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 3,335 thousand are forecast for existing pension obligations for the 2021 financial year.

In the financial year, use was made of a discount rate appropriate to the expected weighted remaining term of 17 years.

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

Expected pension payments

Euro 000s	
2021	3,335
2022	4,522
2023	3,349
2024	3,436
2025	6,824
>2025	80,401
	101,867

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	0.5	Reduction by 8 %	Increase by 9 %
Future pay rises	0.5	No change	No change
Future pension increases	0.5	Increase by 3 %	Reduction by 3 %
Mortality	1 year	Increase by 4 %	–

30. Financial debt

Financial debt

	30 September 2020			30 September 2019		
Euro 000s	Non-current	Current	Total	Non-current	Current	Total
Liabilities						
to banks	1,408,149	107,017	1,515,166	1,380,470	107,432	1,487,902
in connection with leases	125,744	15,203	140,947	120,840	18,494	139,334
to other majority shareholdings	–	742	742	–	557	557
to companies recognised at equity	–	36,581	36,581	–	36,581	36,581
to other shareholdings	–	–	–	–	830	830
Other financial debt	19,275	3,980	23,255	32,227	4,738	36,965
	1,553,168	**163,523**	**1,716,691**	**1,533,537**	**168,632**	**1,702,169**

Maturity in years

	30 September 2020			30 September 2019		
Euro 000s	< 1 year	1 - 5 years	> 5 years	< 1 year	1 - 5 years	> 5 years
Liabilities						
to banks	107,017	715,230	692,919	107,432	680,870	699,599
in connection with leases	15,203	44,076	81,668	18,494	120,840	–
to other majority shareholdings, companies recognised at equity and other shareholdings	37,323	–	–	37,968	–	–
Other financial debt	3,980	8,051	11,224	4,738	21,003	11,225
	163,523	**767,357**	**785,811**	**168,632**	**822,713**	**710,824**

The fixed-rate liabilities to banks of Euro 1,002 million (previous year: Euro 1,036 million) have an average interest rate of 2.0 % (previous year: 2.4 %), while the floating-rate liabilities to banks of Euro 513 million (previous year: Euro 452 million) have an average interest rate of 1.8 % (previous year: 2.0 %). This interest rate is influenced by foreign currency liabilities with higher rates. The average remaining period for which the rate remains fixed in the case of fixed-rate liabilities amounts to seven years (previous year: nine years). The floating-rate liabilities to banks are hedged.

At 30 September 2020, MVV had undrawn committed credit lines of Euro 1,139 million (previous year: Euro 699 million).

Lease liabilities have been recognised at the present value of mandatory lease payments over the term of the lease. These refer to the right-of-use assets presented in Note 16 Leases as lessee.

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 for derivative financial instruments. After initial recognition, liabilities other than derivative financial instruments are measured at amortised cost using the effective interest method.

Other financial and non-financial liabilities

	30 September 2020			30 September 2019		
Euro 000s	Non-current	Current	Total	Non-current	Current	Total
Other financial liabilities						
Derivative financial instruments	129,085	368,796	497,881	72,908	259,655	332,563
Liabilities to employees	–	27,770	27,770	–	26,251	26,251
Customer credit balances	–	6,556	6,556	–	11,514	11,514
Interest liabilities	–	6,875	6,875	–	6,087	6,087
Liabilities for security deposits for energy trading transactions	–	–	–	–	687	687
Concession duties	–	2,521	2,521	–	2,607	2,607
Social security liabilities	–	727	727	–	693	693
Miscellaneous other financial liabilities	30,232	41,569	71,801	27,633	37,924	65,557
Other non-financial liabilities						
Contract liabilities for advance payments received	–	72,699	72,699	–	26,720	26,720
Contract liabilities for building cost grants	109,734	7,394	117,128	96,239	6,913	103,152
Other contract liabilities	15,578	5,645	21,223	17,920	4,355	22,275
Liabilities for other taxes	–	102,756	102,756	–	67,187	67,187
Miscellaneous other non-financial liabilities	5,517	5,939	11,456	5,794	10,417	16,211
	290,146	**649,247**	**939,393**	**220,494**	**461,010**	**681,504**

Other liabilities

	30 September 2020			30 September 2019		
Euro 000s	Non-current	Current	Total	Non-current	Current	Total
Liabilities	290,146	576,548	866,694	220,494	434,290	654,784
of which to companies recognised at equity	999	92,570	93,569	862	4,264	5,126
Advance payments received for orders	–	72,699	72,699	–	26,720	26,720
	290,146	**649,247**	**939,393**	**220,494**	**461,010**	**681,504**

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 2020			30 September 2019		
Euro 000s	Non-current	Current	Total	Non-current	Current	Total
Derivative financial instruments	129,085	368,796	497,881	72,908	259,655	332,563
of which without IFRS 9 hedges	52,642	289,477	342,119	22,488	217,505	239,993
of which with IFRS 9 hedges	76,443	79,319	155,762	50,420	42,150	92,570

To reduce the counterparty risk involved in highly fluctuating fair values of energy trading derivatives, security deposits (margins) are exchanged with the EEX and the ICE (Intercontinental Exchange). No liabilities were recognised for security deposits for energy trading transactions as of the balance sheet date on 30 September 2020 (previous year: Euro 687 thousand).

Miscellaneous other financial liabilities mainly relate to liabilities for earn-out obligations, concession duties and deferred liabilities.

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

The opening and closing balances of contract liabilities recognised under IFRS 15 are presented in the following table:

Contract liabilities

Euro 000s	FY 2020	FY 2019
Balance at 1 October	152,147	156,061
Balance at 30 September	**211,050**	**152,147**

Contract liabilities showed a significant year-on-year increase as of 30 September 2020. This was due to contract liabilities in connection with advance payments made to a subsidiary acting as the general contractor for the construction of two data centres.

MVV expects that, of the transaction price allocated to unsatisfied performance obligations as of 30 September 2020, an amount of Euro 85,737 thousand (previous year: Euro 37,988 thousand) will be recognised as revenues in the next reporting period. The remaining amount of Euro 125,311 thousand (previous year: Euro 114,159 thousand) will be recognised in subsequent financial years.

32. Trade payables

Trade payables

Euro 000s	**30 Sep 2020**	30 Sep 2019
Trade payables	336,752	361,609
to other majority shareholdings	190	62
to companies recognised at equity	12,229	14,135
to other shareholdings	10	3

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. Income tax liabilities and deferred taxes

This line item includes income tax liabilities of Euro 26,405 thousand (previous year: Euro 184 thousand).

In the 2020 financial year, income tax items amounting to Euro 26,192 thousand were reclassified from tax provisions not meeting the requirements of IFRIC 23 to tax liabilities. Further information can be found in Note 29 "Provisions".

The deferred taxes reported for the 2020 financial year relate to the following items:

Deferred taxes

	30 September 2020		30 September 2019	
Euro 000s	**Deferred tax assets**	**Deferred tax liabilities**	Deferred tax assets	Deferred tax liabilities
Intangible assets	3,077	– 13,416	4,152	– 14,283
Property, plant and equipment, including investment properties	20,760	– 180,319	19,182	– 170,008
Right-of-use assets	–	– 39,513	–	– 40,096
Inventories	9,067	– 3,854	14,543	– 3,722
Special item	–	– 9,870	–	– 5,997
Other assets and positive fair values of derivatives	13,250	– 200,933	8,262	– 177,628
Provisions for pensions	18,672	–	20,941	–
Non-current other provisions	25,806	–	25,969	–
Current other provisions	5,143	– 16,354	7,333	– 14,182
Liabilities and negative fair values of derivatives	210,456	– 20,607	168,268	– 20,071
Lease liabilities	37,204	–	37,395	–
Losses carried forward	31,575	–	25,849	–
Deferred taxes (gross)	375,010	– 484,866	331,894	– 445,987
Netting	– 344,666	344,666	– 302,526	302,526
Deferred taxes (net)	**30,344**	**– 140,200**	**29,368**	**– 143,461**

Of the (net) deferred taxes presented above, Euro 15,089 thousand (previous year: Euro 14,952 thousand) relate to non-current deferred tax assets and Euro 89,477 thousand (previous year: Euro 93,427 thousand) to non-current deferred tax liabilities.

No deferred tax assets have been recognised for corporate income tax loss carryovers of Euro 109,814 thousand (previous year: Euro 95,962 thousand), trade tax loss carryovers of Euro 89,110 thousand (previous year: Euro 88,826 thousand) or foreign loss carryovers of Euro 90,474 thousand (previous year: Euro 162,616 thousand).

For temporary differences of Euro 11,525 thousand at shareholdings (previous year: Euro 12,876 thousand), no deferred tax liabilities have been stated for an amount of Euro 3,492 thousand (previous year: Euro 3,901 thousand), as such differences are unlikely to be reversed by dividend distribution or disposal of the companies in the foreseeable future.

Deferred tax assets of Euro 4,442 thousand (previous year: Euro 6,460 thousand) have been recognised at the balance sheet date for companies that generated a loss in the financial year under report or the previous year in cases where realisation of the assets is exclusively dependent on the generation of future profits. Based on available budget figures, which mainly assume that renewable energies projects will be marketed promptly, we expect these assets to be realised.

Deferred taxes of Euro 25,045 thousand were recognised directly in other comprehensive income as part of group equity in the 2020 financial year (previous year: Euro 21,873 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 2020		30 September 2019	
Euro 000s	**Income tax**	**Gross**	Income tax	Gross
Actuarial gains and losses	– 1,450	4,767	6,561	– 24,152
Share of total comprehensive income attributable to companies recognised at equity	–	– 18,217	–	– 1,353
Items that will not be reclassified to profit or loss	**– 1,450**	**– 13,450**	**6,561**	**– 25,505**
Cash flow hedges/hedging costs	4,622	– 18,566	16,800	– 63,778
Currency translation differences	–	– 10,030	–	3,888
Share of total comprehensive income attributable to companies recognised at equity	–	– 366	–	364
Items that will be reclassified to profit or loss	**4,622**	**– 28,962**	**16,800**	**– 59,526**

34. Contingent claims, liabilities and financial obligations

The volume of obligations for contingent liabilities, claims and financial obligations stated below corresponds to the scope of liability 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 7.0 million for warranty agreements (previous year: Euro 8.4 million). It has obligations of this nature in the form of guarantees amounting to Euro 13.3 million (previous year: Euro 13.1 million). As in the previous year, no collateral has been provided for third-party liabilities.

MVV has purchase commitments of Euro 65.7 million in connection with investment orders placed and financial obligations (previous year: Euro 68.4 million).

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 2.7 million.

35. Financial instruments

Fair values and carrying amounts of financial instruments

The carrying amounts and fair values of financial instruments recognised at MVV and their allocation to IFRS 9 measurement categories have been presented in the following tables. The classes presented are based on the balance sheet.

IFRS 9 measurement categories for carrying amounts at 30 September 2020

Euro 000s	IFRS 9 measurement category	Carrying amounts	of which not within scope of IFRS7	Fair values
Assets				
Financial assets				
of which other shareholdings	Fair value through profit or loss	5,575	–	5,575
of which other shareholdings	Not applicable	1,371	1,371	–
of which loans excluding finance leases	Amortised cost	10,195	–	10,195
of which loans in connection with finance leases	Not applicable	72,099	–	72,099
Trade receivables < 1 year	Amortised cost	332,939	–	332,939
Other assets				
of which derivatives outside hedge accounting	Fair value through profit or loss	348,350	–	348,350
of which derivatives within hedge accounting	Not applicable	100,204	–	100,204
of which other financial assets	Amortised cost	54,895	–	54,895
of which contract assets	Not applicable	58,528	–	58,528
Cash and cash equivalents	Amortised cost	343,175	–	343,175
		1,327,331	**1,371**	**1,325,960**
Debt				
Financial debt				
of which financial debt in connection with finance leases	Not applicable	140,947	–	140,947
of which other financial debt	Amortised cost	1,575,744	–	1,602,914
Trade payables < 1 year	Amortised cost	336,752	–	336,752
Other liabilities				
of which derivatives outside hedge accounting	Fair value through profit or loss	342,119	–	342,119
of which derivatives within hedge accounting	Not applicable	155,762	–	155,762
of which other financial liabilities	Amortised cost	90,855	–	90,855
	Fair value through profit or loss	25,395	–	25,395
		2,667,574	**–**	**2,694,744**

IFRS 9 measurement categories for carrying amounts at 30 September 2019

Euro 000s	IFRS 9 measurement category	Carrying amounts	of which not within scope of IFRS 7	Fair value
Assets				
Financial assets				
of which other shareholdings	Fair value through profit or loss	6,861	–	6,861
	Not applicable	1,232	1,232	–
of which loans excluding finance leases	Amortised cost	13,629	–	13,629
of which loans in connection with finance leases	Not applicable	72,880	–	72,880
of which securities	Fair value through profit or loss	–	–	–
Trade receivables < 1 year	Amortised cost	365,038	–	365,038
Other assets				
of which derivatives outside hedge accounting	Fair value through profit or loss	265,942	–	265,942
of which derivatives within hedge accounting	Not applicable	54,587	–	54,587
of which other financial assets	Amortised cost	30,761	–	30,761
	Fair value through profit or loss	40	–	40
of which contract assets	Not applicable	67,835	–	67,835
Cash and cash equivalents	Amortised cost	357,564	–	357,564
		1,236,369	**1,232**	**1,235,137**
Debt				
Financial debt				
of which financial debt in connection with finance leases	Not applicable	139,334	–	139,334
of which other financial debt	Amortised cost	1,562,835	–	1,668,661
Trade payables < 1 year	Amortised cost	361,609	–	361,609
Other liabilities				
of which derivatives outside hedge accounting	Fair value through profit or loss	239,993	–	239,993
of which derivatives within hedge accounting	Not applicable	92,570	–	92,570
of which other financial liabilities	Amortised cost	91,498	–	91,498
	Fair value through profit or loss	21,898	–	21,898
		2,509,737	**–**	**2,615,563**

Given the predominantly short-term remaining terms of trade receivables and payables, other financial assets and liabilities and cash and cash equivalents, their carrying amounts as of the balance sheet date basically correspond 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.

Should MVV not have sufficient new information to measure the fair value, then cost is referred to as an approximate estimate of the fair value.

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.

No items were reclassified between Levels 1 and 2 of the measurement hierarchy in the year under report. Similarly, no items were reclassified into or out of Level 3.

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.

Fair value hierarchy at 30 September 2020

Euro 000s	Level 1	Level 2	Level 3
Financial assets			
Other shareholdings	–	–	5,575
Derivatives outside hedge accounting	176,132	172,171	47
Derivatives within hedge accounting	34,989	65,179	36
Other financial assets	–	–	–
Financial liabilities			
Derivatives outside hedge accounting	155,257	186,129	733
Derivatives within hedge accounting	52,446	98,892	4,424
Other financial liabilities	–	–	25,395

Fair value hierarchy at 30 September 2019

Euro 000s	Level 1	Level 2	Level 3
Financial assets			
Other shareholdings	–	–	6,861
Derivatives outside hedge accounting	93,339	171,954	649
Derivatives within hedge accounting	26,730	27,857	–
Other financial assets	40	–	–
Financial liabilities			
Derivatives outside hedge accounting	82,287	157,381	325
Derivatives within hedge accounting	30,723	56,115	5,732
Other financial liabilities	–	–	21,898

The other shareholdings in Level 3 do not have market prices listed on any active market. The fair value of other shareholdings is determined in a capital value procedure by discounting future cash flows. Discounting is undertaken by reference to the currently valid discount rate at the balance sheet date. The input parameters used to measure the fair value are set with due consideration of economic developments and available company data. The fair value thereby determined would increase or decrease depending on the development in future sales and future EBIT.

Where no market prices are available, the fair value of long-term energy contracts and interest derivatives in Level 3 is determined using recognised valuation methods based on internal fundamental data. In this, we refer to listings on active markets. Where no active markets are available, reference is made to company-specific assumptions.

The derivatives of Euro 4,424 thousand in Level 3 hedge accounting include interest swaps with floor (previous year: Euro 5,732 thousand). The fair value of these derivatives amounts to Euro 4,424 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 59 thousand or reduce it by Euro 56 thousand.

Other Level 3 liabilities include variable purchase price components resulting from acquisitions. The discounted cash flow method is used to determine the fair value. This involves discounting the cash flows expected in future with a predetermined discount rate. The input parameters are set with due consideration of contractual requirements and available company data. The fair value thereby determined would increase or decrease depending on the development in future sales and future EBIT.

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 2019	Gains/losses in income statement	Gains/losses in OCI	Additions/ disposals	Balance at 30 Sep 2020
Financial assets					
Other shareholdings	6,861	– 36	–	– 1,250	5,575
Derivatives outside hedge accounting	649	– 602	–	–	47
Derivatives within hedge accounting	–	36	–	–	36
Financial liabilities					
Derivatives outside hedge accounting	325	408	–	–	733
Derivatives within hedge accounting	5,732	–	– 1,308	–	4,424
Other financial liabilities	21,898	1,237	–	2,260	25,395

Development in financial instruments recognised in Level 3

Euro 000s	Balance at 1 Oct 2018	Gains/losses in income statement	Gains/losses in OCI	Additions/ disposals	Balance at 30 Sep 2019
Financial assets					
Other shareholdings	8,536	73	–	– 1,748	6,861
Derivatives outside hedge accounting	829	– 180	–	–	649
Financial liabilities					
Derivatives outside hedge accounting	250	75	–	–	325
Derivatives within hedge accounting	1,712	–	4,020	–	5,732
Other financial liabilities	–	3,428	–	18,470	21,898

The gains and losses recognised through profit or loss for Level 3 financial instruments are presented in the income statement in the following line items:

Gains and losses recognised in statement of comprehensive income for Level 3 financial instruments

Euro 000s	Total	of which still held at 30 Sep 2020
Other operating income and expenses	– 1,010	–
Income from shareholdings	– 36	– 36
Financial result	– 1,237	– 1,237
Other comprehensive income	1,308	1,308
	– 975	**35**

Gains and losses recognised in statement of comprehensive income for Level 3 financial instruments

Euro 000s	Total	of which still held at 30 Sep 2019
Other operating income and expenses	– 255	–
Income from shareholdings	73	–
Financial result	– 3,428	– 3,428
Other comprehensive income	– 4,020	– 4,020
	– 7,630	**– 7,448**

Netting of financial assets and financial liabilities

The financial assets and financial liabilities are netted and presented as a net amount in the balance sheet if MVV currently has a legally enforceable right to set-off the recognised amounts and intends either to settle on a net basis or to realise the asset and settle the liability simultaneously.

Furthermore, agreements have been concluded in which the set-off criteria are not met but which permit set-off of the respective amounts in specific circumstances, such as insolvency.

The amounts of financial assets and financial liabilities netted in the balance sheet are presented in the following table. Financial assets and financial liabilities that are subject to a legally enforceable master set-off agreement but which are not netted for accounting purposes are also presented. The related amounts that are not netted in the balance sheet mainly include margin payments for market transactions and derivatives not meeting the set-off criteria of IAS 32.

Netting of financial assets at 30 September 2020

	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
Euro 000s				Financial instruments	Cash collateral received/granted	
Loans excluding finance leases	10,195	–	10,195	–	–	10,195
Trade receivables < 1 year	498,898	– 165,959	332,939	–	–	332,939
Derivative financial instruments	448,554	–	448,554	– 372,482	– 32,544	43,528
Other financial assets	113,440	– 17	113,423	–	–	113,423
Cash and cash equivalents	343,175	–	343,175	– 12,281	–	330,894
	1,414,262	**– 165,976**	**1,248,286**	**– 384,763**	**– 32,544**	**830,979**

Netting of financial liabilities at 30 September 2020

	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
Euro 000s				Financial instruments	Cash collateral received/granted	
Financial debt	1,575,744	–	1,575,744	44,263	914	1,530,567
Trade payables < 1 year	191,102	145,650	336,752	–	–	336,752
Derivative financial instruments	497,881	–	497,881	372,482	54,307	71,092
Other financial liabilities	95,924	20,326	116,250	52	–	116,198
	2,360,651	**165,976**	**2,526,627**	**416,797**	**55,221**	**2,054,609**

Netting of financial assets at 30 September 2019

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/granted	Net amount
Loans excluding finance leases	13,629	–	13,629	–	–	13,629
Trade receivables < 1 year	515,831	– 150,793	365,038	–	–	365,038
Derivative financial instruments	320,529	–	320,529	– 237,974	– 25,489	57,066
Other financial assets	98,643	– 7	98,636	–	–	98,636
Cash and cash equivalents	357,564	–	357,564	– 14,202	–	343,362
	1,306,196	**– 150,800**	**1,155,396**	**– 252,176**	**– 25,489**	**877,731**

Netting of financial liabilities at 30 September 2019

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/granted	Net amount
Financial debt	1,562,835	–	1,562,835	– 4,737	– 805	1,568,377
Trade payables < 1 year	493,369	– 131,760	361,609	–	–	361,609
Derivative financial instruments	332,563	–	332,563	– 237,974	– 38,890	609,427
Other financial liabilities	110,538	– 19,040	91,498	–	–	91,498
	2,499,305	**– 150,800**	**2,348,505**	**– 242,711**	**– 39,695**	**2,630,911**

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 2020	FY 2019
Financial assets and liabilities measured at fair value through profit or loss	– 19,655	– 39,970
of which mandatorily measured at fair value	– 19,655	– 39,970
Financial assets measured at amortised cost	– 10,587	– 6,582

The presentation of net results takes due account of standalone derivatives included in the "at fair value through profit or loss" measurement category. In the case of financial assets and financial liabilities, the net result in the "at fair value through profit or loss" category is largely attributable to fair value measurement under IFRS 9. The net result from financial liabilities in this category is recognised in the income statement.

For financial assets, the net results in the "at amortised cost" category predominantly comprise write-downs.

Total interest income and expenses were recognised in the income statement as follows:

Total interest income and expenses

Euro 000s	FY 2020	FY 2019
Total interest income	7,840	9,472
Total interest expenses	46,070	40,056

The financial result also includes currency translations and 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 finance leases and loans. The interest expenses mostly relate to loan obligations and interest swaps.

The total interest income and total interest expenses chiefly result from financial assets and liabilities measured at amortised cost, as well as from interest derivatives.

Risk management
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 commodity price risks on both procurement and sales markets. MVV's risk management pursues the objective of identifying developments on financial and commodity markets at an early stage and countering any resultant negative implications. This is stipulated in internal guidelines, discretionary frameworks, responsibilities, separations of functions, checks and processes.

Derivative financial instruments are used to cover against market price risks. 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 and robust risk indicators.

The maximum default risk for the assets recognised in the balance sheet, including derivatives with positive fair values, is equivalent to the carrying amounts recognised.

The risks resulting from financial instruments are unchanged on the previous year, as are the methods used to measure and control risks.

Further information about the risk management system in place at MVV can be found in the Opportunity and Risk Report within the management report.

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. Moreover, risks are secured and structured with credit securities and contractual mitigation mechanisms. Receivables default risks for contractual partners are inspected upon conclusion of the contract and monitored continuously, with efforts being made to secure the credit exposure in the event of significant deteriorations in creditworthiness. 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. In particular, commodity transactions are concluded on the basis of master agreements which require detailed checks on the counterparty's creditworthiness, such as EFET, ISDA or IETA.

For trading transactions concluded with stock exchanges, security payments (margins) are deposited by our contract partners (counterparties) in order to reduce any additional receivables default risks.

In the carrying amounts of financial assets, default risks have already been accounted for by way of write-downs. These are only recognised for financial instruments that are recognised at amortised cost. For financial instruments that are recognised at fair value, the receivables default risk is already accounted for in the fair value.

IFRS 9 requires any expected credit loss to be accounted for by way of an impairment upon initial recognition of the respective asset already. These "expected losses" are determined using either the general or the simplified approach.

MVV has applied the simplified approach to determine the expected losses for trade receivables, contract assets and lease receivables. This requires recognition of a loss allowance equivalent to the credit losses expected over the lifetime of the respective instrument ("lifetime expected credit losses"). To determine loss allowances, MVV mostly works with a provision matrix based on historic default rates and with prospective and market data-based information, such as knowledge of economic developments at customers and macroeconomic data.

When using the provision matrix, financial instruments have to be allocated to different customer segments showing similar patterns of default. Our customer segments are based on the business models which are in turn mostly allocable to a similar geographical area.

Any internal or external ratings available for our customers are used as the basis for determining the expected credit losses.

Loss allowances for loans and other financial assets are determined on the basis of the general approach. This requires financial assets to be investigated in terms of their credit default risk and allocated to one of three stages of the impairment model in line with their respective development. The creditworthiness of the contract partner forms the basis for assessing credit default risk and is monitored on a regular basis.

All financial assets require allocation to Level 1 upon addition unless they were already impaired upon acquisition or issue. If the credit risk increases significantly since initial recognition, the respective assets are transferred to Level 2. The assessment as to whether credit risk has increased significantly in subsequent periods is made in a defined default risk management process. At MVV, a significant increase is assumed if the internal rating of the contract partner has deteriorated. Assets are transferred to Level 3 should there be any direct indications of impairment or actual default. A financial instrument is assumed to have defaulted when the asset is 720 days overdue. Financial assets are written down in full when, following a detailed review of the individual case, they are classified as being uncollectible.

For trade receivables, contract assets and lease receivables, MVV applies the simplified approach under IFRS 9 to determine the loss allowance. The development in loss allowances is presented in the following table:

Loss allowance (simplified approach)

Euro 000s	FY 2020	FY 2019
Balance at 1 October	24,140	36,748
Net balance of additions/disposals	5,391	6,779
Retirements	– 10,373	– 19,398
Reclassifications	–	–
Currency translation	– 124	11
Balance at 30 September	**19,034**	**24,140**

Of the above loss allowance, Euro 18,023 thousand is attributable to trade receivables (previous year: Euro 22,678 thousand) and Euro 400 thousand to contract assets (previous year: Euro 1,392 thousand).

The default risks for financial assets for which no rating is available and the volume of lifetime expected credit losses and credit default rates for such assets are presented broken down by age group in the table below:

Receivables default risks (simplified approach) at 30 September 2020

Euro 000s	Gross carrying amount	Loss allowance	Credit default rate
not overdue	373,074	3,960	1%
overdue by			
< 89 days	19,262	524	3%
90 to 179 days	3,324	796	24%
180 to 359 days	6,008	1,903	32%
360 to 719 days	5,524	2,853	52%
> 719 days	9,614	8,780	91%
	416,806	**18,816**	

Receivables default risks (simplified approach) at 30 September 2019

Euro 000s	Gross carrying amount	Loss allowance	Credit default rate %
not overdue	375,809	4,285	1%
overdue by			
< 89 days	20,185	314	2%
90 to 179 days	4,646	632	14%
180 to 359 days	10,943	2,039	19%
360 to 719 days	9,274	6,455	70%
> 719 days	10,894	10,345	95%
	431,751	24,070	

Impairments of Euro 218 thousand relate to assets whose loss allowances were determined on the basis of an internal or external rating (previous year: Euro 70 thousand).

Due to retirements of financial instruments, the loss allowances recognised for trade receivables changed by Euro 10,373 thousand in the 2020 financial year. The retirements relate to uncollectible receivables that had already been written down.

In the case of financial assets not eligible for application of the simplified approach provided for by IFRS 9, MVV applies the general approach to determine loss allowances within the expected loss model. This category mainly includes loans and other financial assets. The following reconciliation presents the development in the loss allowance determined using this method:

Loss allowance (general approach) at 30 September 2020

	12-month expected credit loss	Lifetime expected credit loss		Total
Euro 000s	Level 1	Level 2	Level 3	
Balance at 1 Oct 2019	2,729	–	3,381	6,110
Additions	8,156	–	550	8,706
Utilisations	– 493	–	– 3,404	– 3,897
Reclassifications	– 39	–	39	–
Other	– 22	–	27	5
Balance at 30 Sep 2020	**10,331**	**–**	**593**	**10,924**

Loss allowance (general approach) at 30 September 2019

	12-month expected credit loss	Lifetime expected credit loss		Total
Euro 000s	Level 1	Level 2	Level 3	
Balance at 1 Oct 2018	4,305	–	3,342	7,647
Additions	501	–	42	543
Utilisations	– 2,101	–	–	– 2,101
Reclassifications	24	–	– 24	–
Other	–	–	– 21	– 21
Balance at 30 Sep 2019	2,729	–	3,381	6,110

The breakdown of default risk by risk class is presented in the following overview:

Default risk (general approach) at 30 September 2020

Euro 000s	12-month expected credit loss	Lifetime expected credit loss		Total
	Level 1	Level 2	Level 3	
Extremely secure contract partner	34,257	–	–	34,257
Secure contract partner	34,250	1,183	–	35,433
Acceptable contract partner	4,847	–	–	4,847
Speculative contract partner	206	–	–	206
Balance at 30 Sep 2020	**73,560**	**1,183**	**–**	**74,743**

Default risk (general approach) at 30 September 2019

Euro 000s	12-month expected credit loss	Lifetime expected credit loss		Total
	Level 1	Level 2	Level 3	
Extremely secure contract partner	26,015	–	2,699	28,714
Secure contract partner	17,956	–	1,524	19,480
Acceptable contract partner	2,355	–	–	2,355
Speculative contract partner	280	–	–	280
Balance at 30 Sep 2019	46,606	–	4,223	50,829

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 needs 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 2020.

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

Further information about financial debt can be found in Note 30.

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 6,048 thousand (previous year: Euro 4,986 thousand) and interests in subsidiaries amounting to Euro 13,364 thousand (previous year: Euro 3,327 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

	30 September 2020			30 September 2019		
Euro 000s	**Maturities < 1 year**	**Maturities 1 - 5 years**	**Maturities > 5 years**	Maturities < 1 year	Maturities 1 - 5 years	Maturities > 5 years
Non-derivative financial liabilities						
Liabilities to banks	130,930	785,610	747,814	128,269	732,429	765,083
Lease liabilities	–	57,406	97,457	–	55,130	96,941
Trade payables	336,752	867	2,842	361,609	838	2,670
Other financial debt	41,513	9,593	16,621	42,938	22,719	17,006
Other financial liabilities	91,059	12,303	29,807	89,637	9,341	32,715
Derivative financial liabilities	344,986	77,024	–	247,145	33,778	–
	945,240	**942,803**	**894,541**	**869,598**	**854,235**	**914,415**

Interest rate risks: Interest rate risks relate to bank credit balances on the asset side and to floating-rate liabilities to banks on the liabilities side of the balance sheet. They result from any potential change in the reference interest rate underlying the hedged item. MVV limits its interest rate risks by financing its investment projects, where possible, with facilities with congruent terms and fixed interest rates. Furthermore, financing-related risks are also managed by using interest derivatives. These risks are hedged by working with interest swaps enabling a fixed interest rate to be paid and conversely a floating interest rate to be collected over the term of the instrument.

Hedging transactions are structured and concluded in a manner appropriate to the interest rate risks identified for the hedged item, thus creating a direct economic relationship. The hedging relationship is measured by reference to the scope of the risk thereby hedged. Furthermore, the hedging relationship accounts for specific parameters of the hedged item, such as its term and planning reliability.

The sensitivity analysis below presents the impact of changes in interest rates on annual earnings and equity. In this analysis, it is assumed 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 2020 would, as in the previous year, not have led to any overall change in annual net income. This variance would have increased/decreased equity by a total of Euro 481 thousand/Euro 485 thousand (previous year: Euro 730 thousand/Euro 737 thousand).

Currency risks: Currency risk arise due to exchange rate movements that may impact negatively on our asset, financial or earnings position, for example due to an increase in a foreign-currency liability or a reduction in income or in a receivable denominated in a foreign currency.

The resultant currency risks are hedged by natural hedges in the form of currency-congruent financing and by using derivative financial instruments. MVV is therefore not exposed to any material risks in this respect. As a result, no disclosures of currency risks have been provided. In natural hedges, the cash flows and changes in the fair value of the hedged item and the hedging transaction cancel each other out. Derivative financial instruments in the form of forward exchange transactions are deployed to hedge the risks resulting from changes in the respective spot and forward rates.

Hedging transactions are structured and concluded in a manner appropriate to the currency risks identified for the hedged item, thus creating a direct economic relationship. The hedging relationship is measured by reference to the scope of the risk thereby hedged. Furthermore, the hedging relationship accounts for specific parameters of the hedged item, such as its term and planning reliability.

Commodity price risks: In connection with our energy trading activities, energy trading contracts are concluded for the purposes of risk management, adjustments to actual loads and margin optimisation. Price change risks chiefly arise in connection with the procurement and disposal of electricity and gas and the procurement of coal and emission rights. The risks resulting from these trading and portfolio optimisation activities are initially limited by setting narrow and clearly defined limit structures. Compliance with the stipulated limits is monitored on an ongoing basis. Regular reporting is also provided on limit capacity. Taking due account of the limits thereby stipulated, commodity price risks are hedged using suitable derivative financial instruments. The hedging instruments used mainly involve forwards, futures and swaps. The objective of MVV's hedging activities is always to optimise and minimise risk across the entire portfolio and the existing underlying risks. Particularly in procurement activities, the objective is to hedge purchase prices at the market level at which the sales contracts were concluded.

Hedging transactions are structured and concluded in a manner appropriate to the risks identified for the hedged item, thus creating a direct economic relationship. The price index for hedging instruments is selected in each case in such a way as to conform to the hedged item. This way, the hedging instruments are subject to the same commodity price risk as the hedged items.

The sensitivity involved in measuring commodity derivatives is analysed in the following section. This analysis assumes that there are no changes in any 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 energy trading contracts 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 IFRS 9.

If the market price had been 10 % higher/lower at the balance sheet date on 30 September 2020, this would have increased/decreased annual net income by Euro 9,205 thousand/Euro 10,602 thousand (previous year: Euro 10,250 thousand/Euro 10,139 thousand. Equity as of the same reporting date would have increased/decreased by Euro 20,786 thousand/Euro 22,111 thousand (previous year: Euro 19,901 thousand/Euro 19,736 thousand).

Derivative financial instruments and hedging relationships

MVV deploys derivative and currency-congruent financial liabilities to hedge its commodity, interest rate and currency risks. For commodities, the associated risks are hedged using forwards, futures and swaps. Financing risks are hedged with interest swaps, while foreign exchange risks are hedged with forward exchange transactions and by way of currency-congruent financial liabilities.

The risks hedged for the hedged items correspond to the contractual terms of the hedging instruments thereby concluded. For commodity and financing risks, for example, the price risks and interest rate risks of the hedged item respectively correspond to the agreed price and interest rate index of the hedging instrument. Currency risks involved in financing activities are hedged using hedging transactions in the corresponding currency. For all hedging relationships, hedging instruments are concluded with the same nominal volume as the respective hedged item. Risks are thereby hedged at a ratio of 1:1. Selecting this hedging strategy means that hedging relationships can be expected to be highly effective on a prospective basis. The effectiveness of hedging transactions is determined in each case upon the commencement of the hedge and in regular prospective assessments using the critical terms match method. In addition, a retrospective measurement is performed to quantify the effectiveness or ineffectiveness. This is performed using the dollar offset method.

The nominal volumes of derivatives deployed at MVV are presented in the following table:

Nominal volumes by maturity

	30 September 2020			30 September 2019		
Euro 000s	**< 1 year**	**1 - 5 years**	**> 5 years**	< 1 year	1 - 5 years	> 5 years
Interest derivatives	17,443	405,838	181,445	11,443	343,933	154,285
Commodity derivatives	5,586,936	1,992,294	–	4,623,796	1,783,479	–
Currency derivatives	76,894	–	–	7,353	61,100	–
	5,681,273	**2,398,132**	**181,445**	**4,642,592**	**2,188,512**	**154,285**

The commodity derivatives deployed at MVV can be broken down as follows:

Commodity derivatives

	30 September 2020		30 September 2019	
Euro 000s	**Nominal volumes**	**Fair values**	Nominal volumes	Fair values
Commodity derivatives				
Electricity	5,345,577	– 4,328	4,427,176	13,388
Coal	20,015	– 12,452	17,426	– 8,287
Gas	1,481,488	– 17,355	1,788,569	– 10,392
CO_2 rights	730,607	24,693	172,541	40,714
Other	1,543	– 650	1,563	324
	7,579,230	**– 10,092**	**6,407,275**	**35,747**
Commodity derivatives				
Futures	7,559,216	2,360	6,389,849	44,034
Swaps	20,014	– 12,452	17,426	– 8,287
	7,579,230	**– 10,092**	**6,407,275**	**35,747**

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.

Counterparty risk at 30 September 2020

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	514,587	67,879	340,353	53,147	174,234	14,732
A+ and A1 to A- and A3	132,111	13,973	76,621	10,176	55,490	3,797
BBB+ and Baa1 to BBB- and Baa3	38,694	5,431	18,029	3,189	20,665	2,242
BB+ and Ba1 to BB- and Ba3	62,883	10,435	52,263	9,829	10,620	606
Other	1,694,792	199,592	1,244,880	157,818	449,912	41,774
	2,443,067	**297,310**	**1,732,146**	**234,159**	**710,921**	**63,151**

Counterparty risk at 30 September 2019

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	530,728	78,657	135,095	35,451	395,633	43,206
A+ and A1 to A- and A3	73,604	5,484	7,280	45	66,324	5,439
BBB+ and Baa1 to BBB- and Baa3	88,678	13,532	–	–	88,678	13,532
BB+ and Ba1 to BB- and Ba3	–	–	–	–	–	–
Other	2,609,211	292,366	1,403,246	172,503	1,205,965	119,863
	3,302,221	**390,039**	**1,545,621**	**207,999**	**1,756,600**	**182,040**

Cash flow hedges serve to hedge against fluctuations in future cash flows. At MVV, cash flow hedges are mainly deployed for commodities to hedge price risks on sales and procurement markets. Furthermore, MVV deploys cash flow hedges to limit the interest risk on floating-rate liabilities.

For interest hedges, existing hedged items were included in cash flow hedges with terms of up to 13 years as of 30 September 2020 (previous year: 14 years). For commodity hedges, the terms of planned hedged items amount to up to five years (previous year: up to four years).

Both interest hedging instruments and commodity derivatives require net settlements to be paid at contractually fixed dates mainly corresponding to the hedged items.

In the year under report, MVV concluded hedging transactions with an average interest rate of 0.92 % to 3.87 % to hedge against interest rate risks in its financing activities. The average hedged prices for commodity price risks range from Euro 46.00 to Euro 51.91 in the electricity business, Euro 15.77 to Euro 17.91 in the gas business and Euro 21.74 to Euro 21.74 to Euro 24.92 for emission rights.

The following table presents the carrying amounts and nominal amounts, as well as changes in fair value, for the hedging instruments and hedged items deployed in cash flow hedging relationships:

Hedging relationships involving cash flow hedges at 30 September 2020

	Carrying amount of hedging instrument		**Nominal volume**	**Changes in fair value of hedging instrument**	**Changes in fair value of hedged item**
Euro 000s	**Other financial assets**	**Other financial liabilities**			
Commodity price risk	100,204	116,019	1,297,965	– 48,807	– 48,807
Interest rate risk	–	38,112	604,726	– 5,842	– 6,977
	100,204	**154,131**	**1,902,691**	**– 54,649**	**– 55,784**

Hedging relationships involving cash flow hedges at 30 September 2019

	Carrying amount of hedging instrument		Nominal volume	Changes in fair value of hedging instrument	Changes in fair value of hedged item
Euro 000s	Other financial assets	Other financial liabilities			
Commodity price risk	54,525	50,432	913,137	– 9,388	– 9,388
Interest rate risk	62	40,099	509,661	– 29,581	– 30,179
	54,587	**90,531**	**1,422,798**	**– 38,969**	**– 39,567**

Cash flow hedges had the following impact on MVV's statement of comprehensive income:

Impact of cash flow hedges on total comprehensive income at 30 Sep 2020

Euro 000s	**Hedging gains (+)/ losses (-) recognised in OCI**	**Ineffective-ness recognised through profit or loss**	**Reclassi-fication through profit or loss**
Commodity price risk	– 48,807	–	– 28,899
Interest rate risk	– 6,977	–	– 8,010
	– 55,784	**–**	**– 36,909**

Impact of cash flow hedges on total comprehensive income at 30 Sep 2019

Euro 000s	Hedging gains (+)/ losses (-) recognised in OCI	Ineffective-ness recognised through profit or loss	Reclassi-fication through profit or loss
Commodity price risk	– 9,388	–	32,688
Interest rate risk	– 30,179	598	– 8,229
	– 39,567	**598**	**24,459**

Ineffectivenesses resulting from cash flow hedges and their reclassification from other comprehensive income to profit or loss are recognised in the income statement line item in which the respective hedged item is also recognised. For commodity hedges, amounts of Euro 112,285 thousand and Euro 141,184 thousand were reclassified through profit or loss and recognised under sales and cost of materials respectively in the 2020 financial year. For interest rate hedges, an amount of Euro 7,012 thousand was reclassified through profit or loss and recognised under financing expenses. The reclassifications from equity through profit or loss to the income statement refer to hedged items realised in the financial year under report.

The following table shows the development in the cash flow hedge reserve:

Development in hedge reserve

Euro 000s	**FY 2020**	FY 2019
Balance at 1 October	– 35,875	27,903
Unrealised change in reserve for hedging costs		
Interest rate hedges	310	248
Unrealised change in cash flow hedge reserve		
Commodity hedges	– 48,807	– 9,388
Interest rate hedges	– 6,977	– 30,179
Reclassification through profit or losses		
Commodity hedges	28,899	– 32,688
Interest rate hedges	8,010	8,229
Balance at 30 September	**– 54,440**	**– 35,875**

Fair value hedges serve to hedge risks relating to changes in fair value. At MVV, fair value hedges include one foreign currency hedge for intragroup loans and payments denominated in foreign currency. The hedged items amount to Euro 231,702 thousand. The hedging instruments deployed involve a bank liability in British pounds and a forward exchange transaction. The average hedging rate amounts to 0.93 GBP/Euro.

As of 30 September 2020, existing hedged items were included in fair value hedges with terms of up to 12 years (previous year: 13 years).

Other assets include a cumulative amount of Euro 1,020 thousand for hedging-related adjustments (previous year: Euro 1,832 thousand).

The following table presents the carrying amounts and nominal volumes, as well as changes in the fair value, for the hedged items and hedging instruments deployed in fair value hedging relationships.

Hedging relationships involving fair value hedges at 30 September 2020

	Carrying amount of hedging instrument		Nominal volume	Changes in fair value of hedging instrument	Changes in fair value of hedged item
Euro 000s	Other financial liabilities	Other financial debt			
Currency risk	1,631	178,702	231,702	5,842	6,084
	1,631	**178,702**	**231,702**	**5,842**	**6,084**

Hedging relationships involving fair value hedges at 30 September 2019

	Carrying amount of hedging instrument		Nominal volume	Changes in fair value of hedging instrument	Changes in fair value of hedged item
Euro 000s	Other financial liabilities	Other financial debt			
Currency risk	1,547	194,235	247,235	1,617	1,625
	1,547	**194,235**	**247,235**	**1,617**	**1,625**

Fair value hedges had the following impact on MVV’s statement of comprehensive income:

Impact of fair value hedges on total comprehensive income at 30 Sep 2020

Euro 000s	Ineffectiveness recognised through profit or loss
Currency risk	1
	1

Impact of fair value hedges on total comprehensive income at 30 Sep 2019

Euro 000s	Ineffectiveness recognised through profit or loss
Currency risk	1
	1

In the 2020 financial year, income from the ineffectiveness of a currency hedge was recognised in the financial result. The ineffectiveness resulted from slightly different nominal volumes of intragroup loans.

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 presents adjusted consolidated equity as a proportion of adjusted total assets. Adjusted equity comprises all equity items reported in the consolidated financial statements, including non-controlling and minority interests, but excluding non-operating IFRS 9 derivative measurement items and the associated impact on deferred taxes. MVV intends 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

Segment report from 1 October 2019 to 30 September 2020

Euro 000s	Adjusted external sales excluding energy taxes	Intercompany sales excluding energy taxes	Scheduled depreciation	Impairment Losses
Customer Solutions	2,553,218	224,594	28,297	10,463
New Energies	591,482	106,735	80,407	–
Supply Reliability	278,026	617,574	68,850	–
Strategic Investments	90,610	921	11,274	–
Other Activities	1,984	44,627	16,008	–
Consolidation	–	– 994,451	–	–
	3,515,320	**–**	**204,836**	**10,463**

Euro 000s	Material non-cash income and expenses	Adjusted EBIT	Income from companies recognised at equity	Investments
Customer Solutions	11,773	21,191	– 219	39,223
New Energies	4,919	113,162	5,143	104,333
Supply Reliability	– 6,291	66,871	7,064	148,710
Strategic Investments	– 302	23,521	9,425	18,509
Other Activities	– 186	8,489	91	11,382
Consolidation	–	–	–	–
	9,913	**233,234**	**21,504**	**322,157**

Segment report from 1 October 2018 to 30 September 2019

Euro 000s	Adjusted external sales excluding energy taxes [1]	Intercompany sales excluding energy taxes	Scheduled depreciation	Impairment losses
Customer Solutions	2,655,824	162,970	18,531	–
New Energies	734,227	102,217	80,235	–
Supply Reliability	278,121	621,973	59,253	–
Strategic Investments	85,950	1,304	10,924	–
Other Activities	2,368	50,369	14,550	–
Consolidation	–	– 938,833	–	–
	3,756,490	**–**	**183,493**	**–**

Euro 000s	Material non-cash income and expenses	Adjusted EBIT	Income from companies recognised at equity	Investments
Customer Solutions	15,980	26,281	– 6,726	36,665
New Energies	1,442	108,584	9,252	119,346
Supply Reliability	– 8,022	68,909	12,789	124,488
Strategic Investments	515	20,553	9,908	15,681
Other Activities	3,890	969	109	14,025
Consolidation	–	–	–	–
	13,805	**225,296**	**25,332**	**310,205**

1 Previous year's figures adjusted. Accounting methodology adjusted in connection with NIFRIC "Physical settlement of contracts to buy or sell a non-financial item (IFRS 9)".

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 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 appropriate, 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, Mannheim.

  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 plants and biogas plants are allocated to the **New Energies** reporting segment. Furthermore, this reporting segment also includes the renewable energies project development and operations management activities.

  The business fields aggregated in this segment focus on the provision of 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 addition 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 infrastructure 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. 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 pursuant to 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 below. 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 2019 to 30 Sep 2020**	1 Oct 2018 to 30 Sep 2019	+/– change
EBIT as per income statement	209,494	165,485	+ 44,009
Financial derivative measurement items	19,768	56,100	– 36,332
Structural adjustment for part-time early retirement	11	172	– 161
Interest income in connection with finance leases	3,961	3,539	+ 422
Adjusted EBIT	**233,234**	**225,296**	**+ 7,938**

Reconciliation of external sales excluding energy taxes with adjusted external sales excluding energy taxes

Euro 000s	**1 Oct 2019 to 30 Sep 2020**	1 Oct 2018 to 30 Sep 2019	+/– change
Sales after electricity and natural gas taxes	3,432,094	3,739,469	– 307,375
Realisation effects for financial derivatives	83,226	17,021	+ 66,205
Adjusted sales after electricity and natural gas taxes	**3,515,320**	**3,756,490**	**– 241,170**

Of adjusted segment sales with external customers, 92.33 % were generated in Germany (previous year: 88.1 %). The regional breakdown of sales is based on the geographical location of the respective companies.

No individual customers of MVV account for 10 % or more 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.

After the elimination of non-cash income and expenses, the significant year-on-year improvement in annual earnings before taxes (EBT) led the cash flow before working capital and taxes to increase by Euro 27 million. Non-cash IFRS 9 measurement items were the largest item within this elimination.

This positive development was significantly amplified in the cash flow from operating activities, which improved year-on-year by Euro 145 million. The largest positive item related to the settlement of project development projects at the Juwi subgroup. Further items with a significantly positive impact on the cash flow on the one hand included the reduction in trade receivables and on the other the receipt of advance payments, mainly in connection with a project in the Customer Solutions segment. The depositing of securities for counterparty default risk (margins) also led to a significantly lower outflow of cash in the year under report than in the previous year and thus contributed to the improvement in the cash flow from operating activities.

To improve the presentation of changes in other asset and liability items, since the end of the 2020 financial year non-cash measurement items for derivatives subject to hedge accounting have no longer been presented in these items. The previous year's items have been adjusted accordingly, which resulted in the following changes: Other non-cash income and expenses decreased by Euro 3,758 thousand, while the change in other asset items fell by Euro 23,672 thousand and the change in other liability items rose by Euro 27,430 thousand.

The development in the cash flow from investing activities was mainly shaped by significantly higher investments in property, plant and equipment, of which a major share related to the gas-fired CHP plant in Kiel. Payments for other financial assets also had the effect of reducing the cash flow compared with the previous year. One significant item here involved capital increases at joint ventures recognised using the equity method. An opposing positive effect resulted from the lower volume of payments made to acquire fully consolidated companies, which in the current period under report related to the acquisition of EnDaNet GmbH. Overall, the cash flow from investing activities fell by Euro 37 million compared with the 2019 financial year.

The cash flow from financing activities showed a significant year-on-year reduction of Euro 162 million, a development mainly due to lower net new borrowing.

MVV posted cash and cash equivalents of Euro 343 million as of 30 September 2020 (30 September 2019: Euro 358 million).

The reconciliation of liabilities in connection with financing activities is summarised in the following overview:

Liabilities in connection with financing activities

	30 Sep 2019	**Cash-effective changes**	**Non-cash-effective changes**			**30 Sep 2020**
Euro 000s			**Change in scope of consolidation**	**Changes in exchange rates**	**Additions to leases**	
Liabilities to banks	1,487,902	36,991	–	– 9,727	–	1,515,166
Lease liabilities	139,335	– 15,344	224	– 464	17,195	140,946
Other financial debt	74,932	– 14,318	– 1	– 34	–	60,579
	1,702,169	**7,329**	**223**	**– 10,225**	**17,195**	**1,716,691**

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 19,473 thousand (previous year: Euro 19,441 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 2019 to 30 Sep 2020**	1 Oct 2018 to 30 Sep 2019	**1 Oct 2019 to 30 Sep 2020**	1 Oct 2018 to 30 Sep 2019	**30 Sep 2020**	30 Sep 2019	**30 Sep 2020**	30 Sep 2019
City of Mannheim	12,032	15,901	24,697	24,995	32	850	6,269	7,245
Abfallwirtschaft Mannheim	7,475	7,567	1,724	1,661	1,330	1,333	348	327
GBG Mannheimer Wohnungsbaugesellschaft mbH	14,091	12,661	66	25	76	166	15	8
m:con - mannheim:congress GmbH	3,449	4,058	431	352	5,373	6,037	24	431
MKB Mannheimer Kommunalbeteiligungen GmbH (previously: MVV GmbH)	63	64	–	–	–	1	–	–
MV Mannheimer Verkehr GmbH (previously: MVV Verkehr GmbH)	34	24	1	1	–	1	1	–
Rhein-Neckar-Verkehr GmbH	7,480	5,786	236	317	1,254	603	1,182	1,369
Stadtentwässerung Mannheim	1,521	1,697	438	376	278	427	75	19
Associates	32,176	9,810	1,349	1,301	2,663	2,849	1,827	1,724
Joint ventures	161,091	117,161	192,215	239,027	70,948	24,268	91,741	54,118
Other related parties	21,977	23,602	4,023	3,364	5,813	5,872	1,146	1,457
	261,389	**198,331**	**225,180**	**271,419**	**87,767**	**42,407**	**102,628**	**66,698**

The income and expenses with other related parties include income of Euro 28 thousand (previous year: Euro 19 thousand) and expenses of Euro 477 thousand (previous year: Euro 358 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 2020. 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 2020.

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

In the year under report, Executive Board members received short-term benefits of Euro 2,812 thousand (previous year: Euro 2,439 thousand). Pension provisions of Euro 10,714 thousand were recognised for them (previous year: Euro 9,871 thousand). The company has not concluded any share-based remuneration agreements or comparable instruments. No long-term remuneration targets have been agreed.

The remuneration paid to active division heads and authorised representatives came to Euro 2,955 thousand in the year under report (previous year: Euro 3,033 thousand). Of this total, Euro 2,845 thousand involved short-term benefits (previous year: Euro 2,926 thousand).

Unless they are insured via municipal supplementary pension companies (ZVKs), division heads and authorised representatives receive a defined contribution company pension of up to 8.6 % of their fixed basic remuneration. They can determine which biometric risks should be covered. The expenses incurred for this scheme amounted to Euro 110 thousand in the 2020 financial year (previous year: Euro 108 thousand).

Active Supervisory Board members were remunerated as follows:

Supervisory Board remuneration

Euro 000s	**FY 2020**	FY 2019
Fixed remuneration (including meeting allowances)	525	400

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

Former members of the Executive Board received benefits of Euro 630 thousand in the year under report (previous year: Euro 531 thousand). Provisions totalling Euro 20,288 thousand have been stated for pension obligations towards former Executive Board members (previous year: Euro 21,727 thousand). A total of Euro 64 thousand was allocated to this item in the year under report (previous year: Euro 347 thousand).

39. MVV's shareholdings

List of MVV's shareholdings at 30 September 2020

	Town/city	Country	Share of capital in % [1]	Footnotes
Fully consolidated subsidiaries				
Associates (Germany)				
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	7
BFE Institut für Energie und Umwelt GmbH	Mühlhausen	Germany	100.00	4
Biokraft Naturbrennstoffe GmbH	Offenbach am Main	Germany	100.00	
Bürgerwind Thaden GmbH & Co. KG	Hanover	Germany	100.00	5
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	
DC-Datacenter-Group GmbH	Wallmenroth	Germany	74.99	
DC-Group Immobilienverwaltung GmbH & Co. OHG	Wallmenroth	Germany	100.00	
econ solutions GmbH	Munich (dom.: Mannheim)	Germany	100.00	4
En/Da/Net GmbH	Erfurt	Germany	100.00	4, 5
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 Ressourcen GmbH	Offenbach am Main	Germany	100.00	4
FRASSUR GmbH Umweltschutz-Dienstleistungen	Mörfelden-Walldorf	Germany	100.00	
Gasversorgung Offenbach GmbH	Offenbach am Main	Germany	74.90	
Gesellschaft für Hochspannungsbau Offenbach mbH (previously: EVO Alpha 5 GmbH)	Offenbach am Main	Germany	100.00	5
IGS Netze GmbH	Gersthofen	Germany	100.00	4
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	
iwo Pellet Rhein - Main GmbH	Offenbach am Main	Germany	100.00	
juwi AG	Wörrstadt	Germany	100.00	
juwi Bestandsanlagen GmbH	Wörrstadt	Germany	100.00	4
juwi Bio Service & Betriebs GmbH	Wörrstadt	Germany	100.00	
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	75.45	
juwi Wind Germany 162 GmbH & Co. KG	Wörrstadt	Germany	80.00	
juwi Wind Germany 180 GmbH & Co. KG	Wörrstadt	Germany	44.80	
juwi Wind Germany 196 GmbH & Co. KG	Wörrstadt	Germany	100.00	
juwi Wind Germany 33 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	
mobiheat GmbH	Friedberg in Bayern	Germany	74.90	
MVV Alpha drei GmbH	Mannheim	Germany	100.00	4, 5
MVV Alpha fünfzehn GmbH	Mannheim	Germany	100.00	4
MVV Biogas Bernburg GmbH	Mannheim (dom.: Bernburg/Saale)	Germany	90.00	

List of MVV's shareholdings at 30 September 2020

	Town/city	Country	Share of capital in % [1]	Footnotes
MVV Biogas Dresden GmbH	Mannheim (dom.: Dresden)	Germany	100.00	
MVV Biomethan GmbH (previously: Biomethananlage Klein Wanzleben GmbH)	Mannheim (dom.: Wanzleben-Börde)	Germany	100.00	
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 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 Windenergie GmbH	Mannheim	Germany	100.00	4
Netzgesellschaft Köthen mbH	Köthen	Germany	100.00	4, 6
New Breeze GmbH	Wörrstadt	Germany	100.00	
RZ-Products GmbH	Wallmenroth	Germany	100.00	
Soluvia Energy Services GmbH	Offenbach am Main	Germany	100.00	
Soluvia GmbH	Mannheim	Germany	100.00	
Soluvia IT-Services GmbH	Kiel	Germany	100.00	
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 Buhlenberg GmbH & Co. KG	Hanover	Germany	100.00	
Windpark Dirlammen GmbH & Co. KG	Offenbach am Main	Germany	100.00	
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 Thaden GmbH & Co. KG	Hanover	Germany	100.00	5
Windwärts Energie GmbH	Hanover	Germany	100.00	
Windwärts Photovoltaik GmbH	Hanover	Germany	100.00	

List of MVV's shareholdings at 30 September 2020

	Town/city	Country	Share of capital in % [1]	Footnotes
Fully consolidated subsidiaries				
Associates (international)				
Cactus Garden Solar LLC	Delaware	USA	100.00	
Ceskolipská teplárenská a.s.	Ceská Lípa	Czech Republic	75.00	
Ceskolipské teplo a.s.	Prague	Czech Republic	100.00	
Corsoleil EURL i.L.	Saint Florent	France	100.00	
CTZ s.r.o.	Uherské Hradiste	Czech Republic	50.96	
e.services s.r.o.	Decín	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 Purchasing Inc.	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 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.	Pasay City	Philippines	99.99	
juwi Renewable Energies (Pty) Ltd.	Cape Town	South Africa	100.00	
juwi Renewable Energies Limited	London	UK	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	100.00	
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.	Cape Town	South Africa	60.00	
juwi Solar ZA O&M 1 (Pty) Ltd.	Cape Town	South Africa	49.00	
juwi Wind LLC	Delaware	USA	100.00	
Kozilio Dio I.K.E. (Monoprosopi)	Athens	Greece	100.00	
Kozilio Ena I.K.E. (Monoprosopi)	Athens	Greece	100.00	
mobiheat Schweiz GmbH	Glattbrugg	Switzerland	100.00	
mobiheat Österreich GmbH	Sankt Lorenz	Austria	100.00	
MVV Energie CZ a.s.	Prague	Czech Republic	100.00	
MVV Environment Baldovie Limited	Dundee	UK	100.00	
MVV Environment Devonport Limited	Plymouth	UK	100.00	
MVV Environment Limited	London	UK	100.00	
MVV Environment Ridham Limited	Sittingbourne/Iwade	UK	100.00	

List of MVV's shareholdings at 30 September 2020

	Town/city	Country	Share of capital in % [1]	Footnotes
MVV Environment Services Limited	London	UK	100.00	
OPATHERM a.s.	Opava	Czech Republic	100.00	
POWGEN a.s.	Prague	Czech Republic	100.00	
Rocky Mountain Solar LLC	Delaware	USA	100.00	
SE Chronus Solar Energy 10 E.P.E.	Athens	Greece	100.00	
SE Chronus Solar Energy 11 E.P.E.	Athens	Greece	100.00	
SE Chronus Solar Energy 12 E.P.E.	Athens	Greece	100.00	
SE Chronus Solar Energy 13 E.P.E.	Athens	Greece	100.00	
SE Chronus Solar Energy 14 E.P.E.	Athens	Greece	100.00	
SE Chronus Solar Energy 15 E.P.E.	Athens	Greece	100.00	
SE Chronus Solar Energy 16 E.P.E.	Athens	Greece	100.00	
SE Chronus Solar Energy 17 E.P.E.	Athens	Greece	100.00	
SE Chronus Solar Energy 18 E.P.E.	Athens	Greece	100.00	
SE Chronus Solar Energy 19 E.P.E.	Athens	Greece	100.00	
SE Chronus Solar Energy 2 E.P.E.	Athens	Greece	100.00	
SE Chronus Solar Energy 3 E.P.E.	Athens	Greece	100.00	
SE Chronus Solar Energy 4 E.P.E.	Athens	Greece	100.00	
SE Chronus Solar Energy 5 E.P.E.	Athens	Greece	100.00	
SE Chronus Solar Energy 6 E.P.E.	Athens	Greece	100.00	
SE Chronus Solar Energy 7 E.P.E.	Athens	Greece	100.00	
SE Chronus Solar Energy 8 E.P.E.	Athens	Greece	100.00	
SE Chronus Solar Energy 9 E.P.E.	Athens	Greece	100.00	
Teplárna Liberec a.s.	Liberec	Czech Republic	76.04	
TERMIZO a.s.	Liberec	Czech Republic	100.00	
TERMO Decín a.s.	Decín	Czech Republic	96.91	
Zásobování teplem Vsetín a.s.	Vsetín	Czech Republic	100.00	
Unconsolidated other shareholdings				
Associates (Germany)				
Blue Village FRANKLIN Mobil GmbH	Mannheim	Germany	100.00	
Erschließungsträgergesellschaft Weeze mbH	Weeze	Germany	75.00	
EVO Vertrieb GmbH	Offenbach am Main	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 178 GmbH & Co. KG	Wörrstadt	Germany	100.00	
juwi Wind Germany 184 GmbH & Co. KG	Wörrstadt	Germany	100.00	
juwi Wind Germany 185 GmbH & Co. KG	Wörrstadt	Germany	100.00	
juwi Wind Germany 186 GmbH & Co. KG	Wörrstadt	Germany	100.00	
juwi Wind Germany 190 GmbH & Co. KG	Wörrstadt	Germany	100.00	
juwi Wind Germany 191 GmbH & Co. KG	Wörrstadt	Germany	100.00	

List of MVV's shareholdings at 30 September 2020

	Town/city	Country	Share of capital in % [1]	Footnotes
juwi Wind Germany 192 GmbH & Co. KG	Wörrstadt	Germany	100.00	
juwi Wind Germany 197 GmbH & Co. KG	Wörrstadt	Germany	100.00	
juwi Wind Germany 198 GmbH & Co. KG	Wörrstadt	Germany	100.00	
juwi Wind Germany 201 GmbH & Co. KG	Wörrstadt	Germany	100.00	
juwi Wind Germany 202 GmbH & Co. KG	Wörrstadt	Germany	100.00	
juwi Wind Germany 203 GmbH & Co. KG	Wörrstadt	Germany	100.00	
juwi Wind Germany 204 GmbH & Co. KG	Wörrstadt	Germany	100.00	
juwi Wind Germany 205 GmbH & Co. KG	Wörrstadt	Germany	100.00	
juwi Wind Germany 206 GmbH & Co. KG	Wörrstadt	Germany	100.00	
juwi Wind Germany 208 GmbH & Co. KG	Wörrstadt	Germany	100.00	
juwi Wind Germany 210 GmbH & Co. KG	Wörrstadt	Germany	100.00	5
juwi Wind Germany 211 GmbH & Co. KG	Wörrstadt	Germany	100.00	5
juwi Wind Germany 212 GmbH & Co. KG	Wörrstadt	Germany	100.00	
juwi Wind Germany 213 GmbH & Co. KG	Wörrstadt	Germany	100.00	
juwi Wind Germany 214 GmbH & Co. KG	Wörrstadt	Germany	100.00	
juwi Wind Germany 215 GmbH & Co. KG	Wörrstadt	Germany	100.00	
juwi Wind Germany 216 GmbH & Co. KG	Wörrstadt	Germany	100.00	5
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	
PEJO Elektrotechnik GmbH	Mannheim	Germany	100.00	5
Windpark Biebelnheim-Gabsheim GmbH & Co. KG	Wörrstadt	Germany	100.00	
Windpark Hellenthal Wiesenhardt GmbH & Co. KG	Wörrstadt	Germany	100.00	
Windpark Mußbach GmbH & Co. KG	Wörrstadt	Germany	100.00	
Windpark Wiebelsheim GmbH & Co. KG	Wörrstadt	Germany	100.00	
Windpark Worms Repowering GmbH & Co. KG (previously: juwi Wind Germany 207 GmbH & Co. KG)	Wörrstadt	Germany	100.00	
Windwärts Betriebs- und Beteiligungsgesellschaft 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 2020

	Town/city	Country	Share of capital in % [1]	Footnotes
Unconsolidated other shareholdings				
Associates (international)				
Achab Wind Farm (Pty) Ltd.	Cape Town	South Africa	100.00	
Alachua Solar LLC	Delaware	USA	100.00	
Ashdown Solar LLC	Delaware	USA	100.00	
Axial Basin Solar LLC	Delaware	USA	100.00	
Bench Solar LLC	Delaware	USA	100.00	5
Birch Creek Solar LLC	Delaware	USA	100.00	
Bishop Cap Solar LLC	Delaware	USA	100.00	
Black Hollow Solar LLC	Delaware	USA	100.00	
Blue Creek Solar LLC	Delaware	USA	100.00	
Blue Earth Solar LLC	Delaware	USA	100.00	
Cache Valley Solar LLC	Delaware	USA	100.00	
Castle Wind Farm (Pty) Ltd.	Cape Town	South Africa	100.00	
Chapeno Solar LLC	Delaware	USA	100.00	
Chico Creek Solar LLC	Delaware	USA	100.00	5
Chino Valley Solar LLC	Delaware	USA	100.00	
Chinquapin Solar LLC	Delaware	USA	100.00	
Coyote Gulch Solar LLC	Delaware	USA	100.00	
Crab Creek Solar LLC	Delaware	USA	100.00	5
Curry Hill Solar LLC	Delaware	USA	100.00	
Daisy Canyon Solar LLC	Delaware	USA	100.00	
Delareyville Solar Farm (Pty) Ltd.	Cape Town	South Africa	100.00	
Dolores Canyon Solar LLC	Delaware	USA	100.00	
Fairforest Solar LLC	Delaware	USA	100.00	5
Firelands Wind Farm LLC	Delaware	USA	100.00	
Gila Solar LLC	Delaware	USA	100.00	
Hartebeest Wind Farm (Pty) Ltd.	Cape Town	South Africa	100.00	
Highland Solar LLC	Delaware	USA	100.00	
Hotazel Solar Farm 1 (Pty) Ltd.	Cape Town	South Africa	100.00	
Hotazel Solar Farm 2 (Pty) Ltd.	Cape Town	South Africa	100.00	
Hudsonville Solar LLC	Delaware	USA	100.00	
Jacksonville Solar LLC	Delaware	USA	100.00	5
JSI Procurement Group LLC	Delaware	USA	100.00	
JSI Rockfish Realty LLC	Delaware	USA	100.00	
juwi Devco Pty. Ltd.	Brisbane	Australia	100.00	5
juwi Development 01 Srl	Verona	Italy	100.00	
juwi Development 02 Srl	Verona	Italy	100.00	
juwi Development 03 Srl	Verona	Italy	100.00	
juwi Development 04 Srl	Verona	Italy	100.00	5
juwi Development 05 Srl	Verona	Italy	100.00	5
juwi Development 06 Srl	Verona	Italy	100.00	5
juwi Development 07 Srl	Verona	Italy	100.00	5
juwi Development 08 Srl	Verona	Italy	100.00	5
juwi Development 09 Srl	Verona	Italy	100.00	5
juwi Energy Services 2 (Pty) Ltd.	Cape Town	South Africa	80.00	
juwi Solar ZA Construction 9 (Pty) Ltd.	Cape Town	South Africa	60.00	
juwi Solar ZA O&M 2 (Pty) Ltd.	Cape Town	South Africa	100.00	

List of MVV's shareholdings at 30 September 2020

	Town/city	Country	Share of capital in % [1]	Footnotes
juwi Viet Nam Company Limited	Hanoi	Vietnam	100.00	
JWT Asset Co., Ltd.	Bangkok	Thailand	49.80	6
Kaip Wind Farm (Pty) Ltd.	Cape Town	South Africa	100.00	
Kalahanai Solar LLC	Delaware	USA	100.00	5
Kap Vley Wind Farm (Pty) Ltd.	Cape Town	South Africa	100.00	
Kenhardt PV1 (Pty) Ltd.	Cape Town	South Africa	100.00	
Kiowa Community Solar LLC	Delaware	USA	100.00	5
Kiowa Creek Solar LLC	Delaware	USA	100.00	
Kiowa 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	
La Garita Solar LLC	Delaware	USA	100.00	
Lavaca Solar LLC	Delaware	USA	100.00	
Los Brazos Solar LLC	Delaware	USA	100.00	
Marovax (Pty) Ltd.	Cape Town	South Africa	100.00	
Mesquite Solar LLC	Delaware	USA	100.00	
Moffat Solar LLC	Delaware	USA	100.00	
Monarch Solar LLC	Delaware	USA	100.00	
Monaville Solar LLC	Delaware	USA	100.00	
Muleshoe Solar LLC	Delaware	USA	100.00	
MVV Environnement Ressources SASU i.L.	Colmar	France	100.00	
Namies Wind Farm (Pty) Ltd.	Cape Town	South Africa	100.00	
Oasis Wind Farm (Pty) Ltd.	Cape Town	South Africa	100.00	
Ophir Canyon Solar I LLC	Delaware	USA	100.00	
Ophir Canyon Solar II LLC	Delaware	USA	100.00	
Ophir Canyon Solar LLC	Delaware	USA	100.00	
Outeniqua Wind Farm (Pty) Ltd.	Cape Town	South Africa	100.00	
Pacolet Solar LLC	Delaware	USA	100.00	
Palisade Solar LLC	Delaware	USA	100.00	
Paradox Valley Solar LLC	Delaware	USA	100.00	
Pike Solar LLC	Delaware	USA	100.00	
Pronghorn Solar LLC	Delaware	USA	100.00	
Rattlesnake Flat Solar LLC	Delaware	USA	100.00	5
Red Dirt Solar LLC	Delaware	USA	100.00	
Royal Slope Solar LLC	Delaware	USA	100.00	
San Carlos Solar LLC	Delaware	USA	100.00	
San Tan Mountain Solar LLC	Delaware	USA	100.00	
Santa Rosa Solar LLC	Delaware	USA	100.00	
Seward Solar LLC	Delaware	USA	100.00	
Sherman Solar LLC	Delaware	USA	100.00	
Sierra Mojada Solar LLC	Delaware	USA	100.00	
Sierra Vista Solar LLC	Delaware	USA	100.00	
Silver Moon Solar LLC	Delaware	USA	100.00	
Silver River Solar LLC	Delaware	USA	100.00	
Skyview Solar LLC	Delaware	USA	100.00	5
Spanish Peaks II Solar LLC	Delaware	USA	100.00	

List of MVV's shareholdings at 30 September 2020

	Town/city	Country	Share of capital in % [1]	Footnotes
Spanish Peaks 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	
Tailwind Solar LLC	Delaware	USA	100.00	
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) Ltd.	Cape Town	South Africa	100.00	
Wyandot Solar LLC	Delaware	USA	100.00	5
Zingesele Wind Farm (Pty) Ltd.	Cape Town	South Africa	100.00	
At equity				
Joint ventures (Germany)				
ABeG Abwasserbetriebsgesellschaft mbH	Dietzenbach	Germany	49.00	
Allegro engineering GmbH	Markranstädt-Thronitz	Germany	30.00	
AVR BioGas GmbH	Sinsheim	Germany	41.50	
BEEGY Operations GmbH	Mannheim	Germany	51.00	
Biomasse Rhein-Main GmbH	Flörsheim am Main	Germany	33.33	
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 Gesellschaft mit beschränkter Haftung	Kiel	Germany	50.00	
Grosskraftwerk Mannheim Aktiengesellschaft	Mannheim	Germany	28.00	
Infrastruktur Donnersberg GmbH & Co. KG	Wörrstadt	Germany	22.91	
Infrastrukturgesellschaft Rheinhessen II GmbH & Co. KG	Wörrstadt	Germany	48.00	
KommunalWind GmbH & Co. KG	Tübingen	Germany	50.00	
MAIN DC Asset GmbH	Offenbach am Main	Germany	60.00	
MAIN DC Offenbach GmbH	Offenbach am Main	Germany	60.00	
Mainnetz GmbH	Obertshausen	Germany	25.10	
Naunhofer Transportgesellschaft mbH	Parthenstein-Großsteinberg	Germany	50.00	
Qivalo GmbH	Mannheim	Germany	42.50	
ReNabi GmbH	Mannheim	Germany	51.00	
Rockenhausen Windenergie-Projektentwicklungs GmbH i.L.	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	22.91	
wärme.netz.werk Rhein-Neckar GmbH	Heidelberg	Germany	33.34	
Zschau GmbH	Leimen	Germany	75.00	5

List of MVV's shareholdings at 30 September 2020

	Town/city	Country	Share of capital in % [1]	Footnotes
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)				
ESN EnergieSystemeNord GmbH	Schwentinental	Germany	25.00	
Infrastrukturgesellschaft Erbes-Büdesheim GmbH & Co. KG	Wörrstadt	Germany	22.36	
juwi Wind Germany 100 GmbH & Co. KG	Wörrstadt	Germany	34.32	
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
Stadtwerke Buchen GmbH & Co. KG	Buchen-Odenwald	Germany	25.10	
Zweckverband Wasserversorgung Kurpfalz	Mannheim (dom.: 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
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	
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 2020 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
7 Citizens' energy company
Further disclosures can be found in the list of shareholdings of MVV Energie AG.

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 2020 financial year:

Auditor's fee

Euro 000s	FY 2020	FY 2019
Audit services	1,962	1,973
Other audit services	230	252
Tax advisory services	41	63
Other services	58	56
	2,291	**2,344**

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 involve audits performed in accordance with energy industry requirements /attestations (EEG, KWKG) and voluntary certification services. The tax advisory services line item particularly involves fees for support provided in the context of external audits and tax advisory services in the field of transfer prices. The fees paid for other services chiefly include fees for market advisory services in connection with obtaining comparative figures.

41. Utilisation of § 264 (3) HGB

The following German subsidiaries will draw on the disclosure exemption provided for under § 264 (3) HGB for the 2020 financial year:

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

42. Declaration of Conformity (§ 161 AktG)

The Executive and Supervisory Boards of MVV Energie AG refer to the management report in respect of the Declaration of Conformity with the recommendations made by the German Corporate Governance Code.

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 (see Note 37 Related party disclosures), further concession agreements have also been concluded between MVV companies and local and regional authorities. The remaining terms range from 10 to 16 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, 10 November 2020

MVV Energie AG

Executive Board

Dr. Müller   Amann   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, 10 November 2020

MVV Energie AG

Executive Board

Dr. Müller   Amann   Klöpfer   Dr. Roll

Directors and Officers

EXECUTIVE BOARD OF MVV ENERGIE AG

Dr. Georg Müller
CEO, Commercial Affairs

Verena Amann
Personnel 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 Chair)
Chair 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

Sabine U. Dietrich
Supervisory Board Member, Consultant
(since 1 October 2020)

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

Gabriele Gröschl-Bahr [1]
Head of Social Insurance Division at ver.di, Berlin

Dieter Hassel
Member of Executive Board of RheinEnergie AG, Cologne
(until 26 June 2020)

Barbara Hoffmann
Auditor, Tax Advisor

Prof. Dr. Heidrun Kämper
Academic Employee at Institut
für Deutsche Sprache, Mannheim
(until 30 September 2020)

Brigitte Kemmer
Tax Advisor
(until 30 September 2020)

Gregor Kurth
Head of Transactions, Infrastructure Investments, Europe,
First Sentier Investors (FSI), London, UK
(since 3 July 2020)

Thoralf Lingnau [1]
Member of Works Council
(since 24 January 2020)

Dr. Lorenz Näger
Deputy Chairman of Executive Board and CFO
of HeidelbergCement AG

Steffen Ratzel
Managing Director of BKV-Bäder- und Kurverwaltung
Baden-Württemberg, Anstalt des öffentlichen Rechts,
Baden-Baden
(until 30 September 2020)

Tatjana Ratzel
Head of Sickness Allowance Department at
INTER Versicherungsgruppe, Mannheim
(since 1 October 2020)

Bernhard Schumacher [1]
Head of Smart Cities Division at MVV Energie AG

Dr. Stefan Seipl
Businessman, Independent Management Consultant
(since 1 October 2020)

Christian Specht
First Mayor of City of Mannheim

Prof. Heinz-Werner Ufer
Graduate in Economics

Susanne Wenz [1]
Deputy State Regional Director at
ver.di Baden-Württemberg

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

Positions held by Executive and Supervisory Board members 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 Chair) • Peter Erni • Detlef Falk • Gregor Kurth (since 1 October 2020) • Dr. Lorenz Näger • Christian Specht (until 30 September 2020)
Personnel Committee	• Dr. Peter Kurz (Chairman) • Heike Kamradt (Deputy Chair) • Ralf Eisenhauer • Peter Erni • Gregor Kurth (since 1 October 2020) • Steffen Ratzel (until 30 September 2020) • Jürgen Wiesner
Nomination Committee	• Dr. Peter Kurz (Chairman) • Ralf Eisenhauer • Barbara Hoffmann • Gregor Kurth (since 1 October 2020) • Steffen Ratzel (until 30 September 2020) • Tatjana Ratzel (since 1 October 2020) • Prof. Heinz-Werner Ufer
Mediation Committee	• Dr. Peter Kurz (Chairman) • Heike Kamradt • Gregor Kurth (since 1 October 2020) • Steffen Ratzel (until 30 September 2020) • Jürgen Wiesner
New Authorised Capital Creation Committee	• Dr. Peter Kurz (Chairman) • Ralf Eisenhauer • Peter Erni • Dieter Hassel (until 26 June 2020) • Heike Kamradt • Gregor Kurth (since 1 October 2020) • Steffen Ratzel (until 30 September 2020) • Tatjana Ratzel (since 1 October 2020) • Christian Specht • 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 (until 2 July 2020) • Stadtwerke Kiel AG, Kiel (Chairman)	
Verena Amann	• Energieversorgung Offenbach AG, Offenbach (since 26 February 2020) • Juwi AG, Wörrstadt (since 19 February 2020) • MVV Enamic GmbH, Mannheim • MVV Netze GmbH, Mannheim (since 1 October 2019) • Stadtwerke Ingolstadt Beteiligungen GmbH, Ingolstadt (since 8 May 2020) • Stadtwerke Kiel AG, Kiel (since 1 January 2020)	
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	• MVV Energie CZ a.s., Prague, Czech Republic (Chairman) • Qivalo GmbH, Mannheim (Chairman since 4 December 2019) • Soluvia GmbH, Mannheim • Stadtmarketing Mannheim GmbH, Mannheim
Dr. Hansjörg Roll	• Energieversorgung Offenbach AG, Offenbach • Grosskraftwerk Mannheim AG, Mannheim (Chairman) • 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)	• GBG Mannheimer Wohnungsbaugesellschaft mbH, Mannheim (Chairman) • mg: mannheimer gründungszentren gmbh, Mannheim (Chairman) • MKB Mannheimer Kommunal-Beteiligungen GmbH, Mannheim (Chairman) • MWS Projektentwicklungsgesellschaft mbH, Mannheim (Chairman) • Sparkasse Rhein Neckar Nord, Mannheim (Chairman) • Stadtmarketing Mannheim GmbH, Mannheim
Heike Kamradt (Deputy Chair) Chair 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	• Soluvia Energy Services GmbH, Offenbach
Johannes Böttcher Chairman of Works Council of Energieversorgung Offenbach AG	• Energieversorgung Offenbach AG, Offenbach (Deputy Chairman)	
Timo Carstensen Deputy Chairman of Works Council of Stadtwerke Kiel AG	• Stadtwerke Kiel AG, Kiel	
Sabine U. Dietrich Supervisory Board Member, Consultant (since 1 October 2020)	• Commerzbank AG, Frankfurt • H&R GmbH & Co. KGaA, Salzbergen	
Ralf Eisenhauer Construction and Project Manager at MWS Projektentwicklungsgesellschaft mbH, Mannheim	• Rhein-Neckar-Verkehr GmbH, Mannheim	• Sparkasse Rhein Neckar Nord, 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 • Soluvia Energy Services GmbH, Offenbach • Soluvia IT-Services GmbH, Kiel
Gabriele Gröschl-Bahr Head of Social Insurance Division at ver.di, Berlin		• Board of Directors of Federal Employment Agency, Nuremberg • Supervisory Board of Federal and State Government Employees Retirement Fund (BVL), Karlsruhe (Chair)

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 (until 26 June 2020)	• BRUNATA-METRONA GmbH, Hürth • NetCologne Gesellschaft für Telekommunikation mbH, Cologne	• Agger Energie GmbH, Gummersbach • BELKAW GmbH, Bergisch Gladbach (Deputy 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 Insititut für Deutsche Sprache, Mannheim (until 30 September 2020)		
Brigitte Kemmer Tax Advisor (until 30 September 2020)		
Gregor Kurth Head of Transactions, Infrastructure Investments, Europe, First Sentier Investors (FSI), London, UK (since 3 July 2020)		• Utilitas Group, Estonia • Owlcastle Holdings Limited, UK
Thoralf Lingnau Member of Works Council of MVV Energie AG (since 24 January 2020)	• MVV Trading GmbH, Mannheim	

Name **Occupation**	**Positions held on other statutory supervisory boards of German companies**	**Membership of comparable German and foreign company supervisory boards**
Dr. Lorenz Näger Deputy Chairman of Executive Board and CFO of HeidelbergCement AG	• PHÖNIX Pharma SE, Mannheim	• Castle Cement Limited, Maidenhead, UK (until 31 January 2020) • Cimenteries CBR S.A., Brussels, Belgium • ENCI Holding N.V., 's-Hertogenbosch, Netherlands • Hanson Limited, Maidenhead, UK (until 31 January 2020) • 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 (until 31 January 2020) • PHOENIX Pharmahandel GmbH & Co. KG, Mannheim, Germany • PT Indocement Tunggal Prakarsa Tbk., Jakarta, Indonesia
Steffen Ratzel Managing Director of BKV-Bäder- und Kurverwaltung Baden-Württemberg, Anstalt des öffentlichen Rechts, Baden-Baden (until 30 September 2020)		• Badenweiler Thermen und Touristik GmbH, Badenweiler • Gemeinschaftskraftwerk Baden-Baden GmbH, Baden-Baden • Staatsbad Wildbad - Bäder- und Kurbetriebsgesellschaft mbH, Bad Wildbad (Deputy Chairman)
Tatjana Ratzel Head of Sickness Allowance Department at INTER Versicherungsgruppe, Mannheim (since 1 October 2020)		
Bernhard Schumacher Head of Smart Cities Division at MVV Energie AG		• Management Stadtwerke Buchen GmbH, Buchen (Deputy Chairman) • Stadtwerke Schwetzingen Verwaltungsgesellschaft mbH, Schwetzingen • Stadtwerke Walldorf GmbH & Co. KG, Walldorf

Name Occupation	Positions held on other statutory supervisory boards of German companies	Membership of comparable German and foreign company supervisory boards
Dr. Stefan Seipl Businessman, Independent Management Consultant (since 1 October 2020)	• Ferngas Netzgesellschaft GmbH, Schwaig (Chairman)	• Nordion Energi AB, Malmö, Sweden • Swedegas AB, Göteborg, Sweden • WEUM AB, Malmö, Sweden
Christian Specht First Mayor of City of Mannheim	• Rhein-Neckar-Verkehr GmbH, Mannheim (Chairman)	• MKB Mannheimer Kommunal-Beteiligungen GmbH, Mannheim (Deputy Chairman) • MV Verkehr GmbH, Mannheim (Chairman) • Verkehrsverbund Rhein-Neckar GmbH (VRN), Mannheim (Chairman)
Prof. Heinz-Werner Ufer Graduate in Economics	• Amprion GmbH, Dortmund (Chairman)	
Susanne Wenz Deputy State Regional Director at ver.di Baden-Württemberg	• Bausparkasse Schwäbisch Hall AG, Schwäbisch Hall	• PSD Bank Karlsruhe-Neustadt eG, Karlsruhe
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 • Soluvia IT-Services GmbH, Kiel

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 at 30 September 2020, 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 2019 to 30 September 2020, 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 2019 to 30 September 2020. 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 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 at 30 September 2020, and of its financial performance for the financial year from 1 October 2019 to 30 September 2020, 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 2019 to 30 September 2020. 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:

❶ Recoverability of goodwill
❷ Accounting treatment of energy trading transactions

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

① Matter and issue
② Audit approach and findings
③ Reference to further information

Hereinafter we present the key audit matters:

❶ Recoverability of goodwill

① Goodwill amounting in total of € 203 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, as are the expected implications of the ongoing coronavirus crisis for the Group's business activities. The discount rate used is the weighted average cost of capital for the respective group of cash-generating units. The regular impairment tests led to the recognition of impairment losses of € 8.3 million in the current financial year.

The outcome of this valuation exercise is dependent to a large extent on the estimates made by the executive directors with respect to the future cash inflows from the respective group of cash-generating units, not least also in view of the implications of the coronavirus crisis, 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.

② 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. We appraised the assessment by the executive directors of the implications of the coronavirus crisis for the Group's business activities and reviewed the inclusion of these implications in the calculation of future cash flows. 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.

③ The Company's goodwill disclosures are contained in note "14 Intangible assets" of the notes to the consolidated financial statements.

❷ Accounting treatment of energy trading transactions

① 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 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 IFRS 9, which are either accounted for at fair value through profit or loss (classified as financial assets or liabilities measured at fair value through profit or loss) or as pending transactions if the underlying for the derivative financial instruments 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 electricity, gas and emission rights are included as hedging instruments in the hedge accounting in accordance with IFRS 9 as so-called hedged cash flows. The underlying transactions are the purchase respectively the sale of electricity, gas and emission rights 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 IFRS 9 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.

② 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 systems 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 analysed 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 IFRS 9, 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. Among other aspects, we evaluated the process used to assess the necessary effectiveness of the cash flow hedges and the correctness of the corresponding amounts recognised in equity as well as the reclassified amounts within the consolidated income statement. In our view, the accounting policies applied by the executive directors and the methodology for accounting for energy trading transactions are appropriate overall.

③ 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 the "Corporate Governance" section of the group management report
- the corporate governance report pursuant to No. 3.10 of the German Corporate Governance Code
- the non-financial declaration contained in the "Combined Non-Financial Declaration" section of the group management report pursuant to § 289b Abs. 1 HGB and § 315b Abs. 1 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 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 scepticism 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 the 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 communicated 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 13 March 2020. We were engaged by the supervisory board on 19 September 2020. We have been the group auditor of MVV Energie AG, Mannheim, without interruption since the 2008/09 financial year.

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 Andrea Ehrenmann.

Essen, 10 November 2020

PricewaterhouseCoopers GmbH

Wirtschaftsprüfungsgesellschaft

Ralph Welter	Andrea Ehrenmann
Wirtschaftsprüfer (German Public Auditor)	Wirtschaftsprüferin (German Public Auditor)

Other Disclosures

Auditor's Report on Combined Non-Financial Declaration

INDEPENDENT PRACTICTIONER'S REPORT ON A LIMITED ASSURANCE ENGAGEMENT ON NON-FINANCIAL REPORTING

To MVV Energie AG, Mannheim

We have performed a limited assurance engagement on the combined non-financial declaration of MVV Energie AG, Mannheim, (hereinafter the "Company") compiled pursuant to § (Article) 289 Abs. (paragraph) 1 and § 315b Abs. 1 HGB ("Handelsgesetzbuch": "German Commercial Code") for the period from 1 October 2019 to 30 September 2020 and included in the "Combined Non-Financial Declaration" section of the combined management report (hereinafter the "Non-Financial Declaration").

Responsibilities of executive directors

The executive directors of the Company are responsible for the preparation of the Non-Financial Declaration in accordance with § 315c in conjunction with § 289c to § 289e HGB.

This responsibility of the Company's executive directors includes the selection and application of appropriate methods of non-financial reporting as well as making assumptions and estimates related to individual non-financial disclosures which are reasonable in the circumstances. Further, the executive directors are responsible for such internal control as they have considered necessary to enable the preparation of a Non-Financial Declaration that is free from material misstatement whether due to fraud or error.

Independence and quality control of the audit firm

We have complied with the German professional provisions regarding independence and with other ethical requirements.

Our audit firm applies the national legal requirements and professional standards – in particular the Professional Code for German Public Auditors and German Chartered Auditors ("Berufssatzung für Wirtschaftsprüfer und vereidigte Buchprüfer": "BS WP/vBP") as well as the Standard on Quality Control 1 published by the Institut der Wirtschaftsprüfer (Institute of Public Auditors in Germany; IDW): Requirements to Quality Control for Audit Firms (IDW Qualitätssicherungsstandard 1: Anforderungen an die Qualitätssicherung in der Wirtschaftsprüferpraxis – IDW QS 1) – and accordingly maintains a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

Practitioner's responsibility

Our responsibility is to express a limited assurance conclusion on the Non-Financial Declaration based on the assurance engagement we have performed.

Within the scope of our engagement we did not perform an audit on external sources of information or expert opinions referred to in the Non-Financial Declaration.

We conducted our assurance engagement in accordance with the International Standard on Assurance Engagements (ISAE) 3000 (Revised): Assurance Engagements other than Audits or Reviews of Historical Financial Information, issued by the IAASB. This Standard requires that we plan and perform the assurance engagement to allow us to conclude with limited assurance that nothing has come to our attention that causes us to believe that the Company's Non-Financial Declaration for the period from 1 October 2019 to 30 September 2020 has not been prepared, in all material aspects, in accordance with § 315c in conjunction with § 289c to 289e HGB. In a limited assurance engagement the assurance procedures are less in extent than for a reasonable assurance engagement, and therefore a substantially lower level of assurance is obtained. The assurance procedures selected depend on the practitioner's judgment.

Within the scope of our assurance engagement, we performed amongst others the following assurance procedures and further activities:

- Obtaining an understanding of the structure of the sustainability organisation and of stakeholder engagement
- Enquiries of the executive directors and personnel involved in the preparation of the Non-Financial Declaration regarding the preparation process, the internal control system relating to this process and select disclosures in the Non-Financial Declaration
- Identification of the likely risks of material misstatement of the Non-Financial Declaration
- Analytical evaluation of disclosures in the Non-Financial Declaration
- Review of the implementation of central management requirements, processes and regulations for data collection based on an audit of the Kiel location (SWK). Due to coronavirus protection measures, this was performed on a virtual basis
- Comparison of disclosures with corresponding data in the consolidated financial statements and in the group management report
- Evaluation of the presentation of the non-financial information.

Assurance conclusion

Based on the assurance procedures performed and assurance evidence obtained, nothing has come to our attention that causes us to believe that the Company's Non-Financial Declaration for the period from 1 October 2019 to 30 September 2020 has not been prepared, in all material aspects, in accordance with § 315c in conjunction with § 289c to § 289e HGB.

Intended use of the assurance report

We issue this report on the basis of the engagement agreed with the Company. The assurance engagement has been performed for purposes of the Company and the report is solely intended to inform the Company about the result of the limited assurance engagement.

The report is not intended for any third parties to base any (financial) decision thereon. Our responsibility lies only with the Company. We do not assume any responsibility towards third parties.

Munich, 10 November 2020

PricewaterhouseCoopers GmbH

Wirtschaftsprüfungsgesellschaft

Hendrik Fink ppa. Meike Beenken

Wirtschaftsprüfer
[German Public Auditor]