Consolidated Financial Statements

Income Statement

Income statement

Euro 000s	**1 Oct 2020 to 30 Sep 2021**	1 Oct 2019 to 30 Sep 2020	Notes
Sales	4,400,508	3,583,790	
Less electricity and natural gas taxes	166,720	151,696	
Sales less electricity and natural gas taxes	**4,233,788**	**3,432,094**	1
Changes in inventories	27,829	5,483	2
Own work capitalised	23,216	22,167	3
Other operating income	1,330,146	206,344	4
Cost of materials	3,320,010	2,506,252	5
Employee benefit expenses	487,301	456,423	6
Other operating expenses	1,100,158	291,021	7
Impairment losses on financial instruments	8,465	11,666	
Income from companies recognised at equity	36,167	21,504	8
Other income from shareholdings	– 1,644	2,563	8
EBITDA	**733,568**	**424,793**	
Depreciation and amortisation	203,900	206,997	9
EBITA	**529,668**	**217,796**	
Goodwill amortisation	–	8,302	
EBIT	**529,668**	**209,494**	
of which result of IFRS 9 derivative measurement	255,415	– 19,768	
of which EBIT before result of IFRS 9 derivative measurement	274,253	229,262	
Financing income	13,614	12,324	10
Financing expenses	53,957	60,676	11
EBT	**489,325**	**161,142**	
Taxes on income	144,293	46,950	12
Annual net income	**345,032**	**114,192**	
of which non-controlling interests	146,255	20,291	
of which earnings attributable to MVV Energie AG shareholders (annual net income after minority interests)	**198,777**	**93,901**	13
Basic and diluted earnings per share (Euro)	**3.02**	**1.42**	

Statement of Comprehensive Income

Statement of income and expenses recognised in group equity

Euro 000s	**1 Oct 2020 to 30 Sep 2021**	1 Oct 2019 to 30 Sep 2020
Annual net income	**345,032**	**114,192**
Cash flow hedges	– 44,903	– 14,254
Hedging costs	310	310
Currency translation differences	12,022	– 10,030
Reclassifiable share of companies recognised at equity	– 369	– 366
Items that may subsequently be reclassified to profit or loss	**– 32,940**	**– 24,340**
Actuarial gains and losses	5,750	3,318
Non-reclassifiable share of companies recognised at equity	– 360	– 18,217
Items that will not be reclassified to profit or loss	**5,390**	**– 14,899**
Total comprehensive income	**317,482**	**74,953**
Non-controlling interests	173,755	15,196
Total comprehensive income attributable to MVV Energie AG shareholders	**143,727**	**59,757**

Balance Sheet

Balance sheet

Euro 000s	**30 Sep 2021**	30 Sep 2020	Notes
Assets			
Non-current assets			
Intangible assets	287,663	283,964	14
Property, plant and equipment	2,888,292	2,726,545	15
Right-of-use assets	154,823	149,144	16
Investment properties	2,451	2,424	17
Interests in companies recognised at equity	201,498	192,331	18, 19
Other financial assets	70,647	77,735	21
Other receivables and assets	1,259,662	101,914	22
Deferred tax assets	103,869	30,344	33
	4,968,905	**3,564,401**	
Current assets			
Inventories	210,880	198,740	23
Trade receivables	376,015	332,939	24
Other receivables and assets	7,965,545	563,602	22
Income tax receivables	30,136	28,465	25
Cash and cash equivalents	1,258,177	343,175	26
	9,840,753	**1,466,921**	
	14,809,658	**5,031,322**	
Equity and debt			
Equity			27
Share capital	168,721	168,721	
Capital reserve	455,241	455,241	
Accumulated net income	929,166	803,101	
Accumulated other comprehensive income	– 161,911	– 107,925	
Capital of MVV	**1,391,217**	**1,319,138**	
Non-controlling interests	367,407	215,162	
	1,758,624	**1,534,300**	
Non-current debt			
Provisions	202,577	208,419	28, 29
Financial debt	1,609,170	1,553,168	30
Other liabilities	1,286,937	290,146	31
Deferred tax liabilities	274,447	140,200	33
	3,373,131	**2,191,933**	
Current debt			
Other provisions	174,289	127,903	28, 29
Tax provisions	1,795	1,259	28
Financial debt	277,106	163,523	30
Trade payables	383,286	336,752	32
Other liabilities	8,805,416	649,247	31
Income tax liabilities	36,011	26,405	33
	9,677,903	**1,305,089**	
	14,809,658	**5,031,322**	

Statement of Changes in Equity

Statement of changes in equity

	Equity contributed		Equity generated						
				Accumulated other comprehensive income					
Euro 000s	Share capital of MVV Energie AG	Capital reserve of MVV Energie AG	Accumulated net income	Currency translation differences	Fair value measurement of financial instruments	Actuarial gains and losses	**Capital of MVV**	Non-controlling interests	**Total capital**
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**
Balance at 1 October 2020	**168,721**	**455,241**	**803,101**	**9,483**	**– 34,167**	**– 83,241**	**1,319,138**	**215,162**	**1,534,300**
Other income and expenses recognised in equity	–	–	–	11,316	– 70,783	4,417	– 55,050	27,500	– 27,550
Result of business operations	–	–	198,777	–	–	–	198,777	146,255	345,032
Total comprehensive income	**–**	**–**	**198,777**	**11,316**	**– 70,783**	**4,417**	**143,727**	**173,755**	**317,482**
Dividends paid	–	–	– 62,611	–	–	–	– 62,611	– 18,477	– 81,088
Capital increase/reduction at subsidiaries	–	–	–	–	–	–	–	–	–
Change in scope of consolidation/ level of shareholding	–	–	– 10,101	–	1,064	–	– 9,037	– 3,033	– 12,070
Balance at 30 September 2021	**168,721**	**455,241**	**929,166**	**20,799**	**– 103,886**	**– 78,824**	**1,391,217**	**367,407**	**1,758,624**

Cash Flow Statement

Cash flow statement [1]

Euro 000s	**1 Oct 2020 to 30 Sep 2021**	1 Oct 2019 to 30 Sep 2020
Annual net income before taxes on income	489,325	161,142
Amortisation, depreciation and write-ups of intangible assets, property, plant and equipment and investment properties	203,900	206,901
Financial result	40,344	48,352
Interest received	6,770	6,557
Change in non-current provisions	– 5,065	– 432
Other non-cash income and expenses	– 263,377	30,114
Result of disposal of non-current assets	– 4,783	110
Cash flow before working capital and taxes	**467,114**	**452,744**
Change in other assets	– 82,228	– 37,926
Change in other liabilities	833,345	66,069
Change in current provisions	41,968	– 29,870
Income taxes paid	– 56,968	– 68,249
Cash flow from operating activities	**1,203,231**	**382,768**
Payments for investments in intangible assets, property, plant and equipment and investment properties	– 284,769	– 290,483
Proceeds from disposals of intangible assets, property, plant and equipment and investment properties	13,048	23,124
Proceeds from subsidy payments	10,155	11,218
Proceeds from sale of other financial assets	2,052	5,664
Payments for acquisition of fully consolidated companies and other business units	– 4,702	– 3,861
Payments for other financial assets	– 12,627	– 24,011
Cash flow from investing activities	**– 276,843**	**– 278,349**
Proceeds from taking up of loans	463,286	299,150
Payments for redemption of loans	– 343,075	– 291,820
Dividends paid	– 62,611	– 59,316
Dividends paid to non-controlling interests	– 18,477	– 15,640
Change due to changes in capital at minorities	– 8,575	279
Interest paid	– 48,665	– 45,020
Cash flow from financing activities	**– 18,117**	**– 112,367**
Cash-effective changes in cash and cash equivalents	908,271	– 7,948
Change in cash and cash equivalents due to currency translation	6,731	– 6,441
Cash and cash equivalents at 1 October 2020 (2019)	343,175	357,564
Cash and cash equivalents at 30 September 2021 (2020)	**1,258,177**	**343,175**
of which cash and cash equivalents at 30 September 2021 (2020) with restraints on disposal	226	534

1 See further disclosures on cash flow statement in Note 37

Cash Flow Statement

Cash flow – aggregate presentation

Euro 000s	**1 Oct 2020 to 30 Sep 2021**	1 Oct 2019 to 30 Sep 2020
Cash and cash equivalents at 1 October 2020 (2019)	**343,175**	**357,564**
Cash flow from operating activities	1,203,231	382,768
Cash flow from investing activities	– 276,843	– 278,349
Cash flow from financing activities	– 18,117	– 112,367
Change in cash and cash equivalents due to currency translation	6,731	– 6,441
Cash and cash equivalents at 30 September 2021 (2020)	**1,258,177**	**343,175**

Notes to MVV's 2021 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 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 2021.

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 2021 financial year (1 October 2020 to 30 September 2021). 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 to the consolidated financial statements.

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 9 November 2021 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 2021 financial year. These standards and interpretations did not have any material implications for MVV:

Newly applied standards and interpretations

	EU endorsement	Effective date [1]
IFRS 3 Business Combinations - Definition of a Business	21 Apr 2020	1 Jan 2020

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 2021 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]
IAS 16 Property, Plant and Equipment – Proceeds before Intended Use	2 Jun 2021	1 Jan 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 2021.

Subsidiaries are fully consolidated upon acquisition, i.e. from the time when the Group gains control. Their inclusion in the consolidated financial statements therefore 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	Companies recognised at equity
1 October 2020	155	36
Additions	9	3
Disposals	31	4
30 September 2021	**133**	**35**

MVV RHE GmbH, Mannheim, a fully consolidated company within the MVV Group, took over the remaining 50 % of Fernwärme Rhein-Neckar GmbH (FRN), Mannheim, as of 14 December 2020. This led to the full consolidation of FRN, which was previously accounted for as a joint venture using the equity method. FRN provides transmission pipelines to safeguard the supply of district heating to customers in the Heidelberg and Schwetzingen areas. As the company's district heating pipeline and business object do not constitute a standalone operation, no goodwill was identified upon allocation of the purchase price.

MVV Alpha drei GmbH, Mannheim, a company fully consolidated within the MVV Group, took over the remaining 25 % of the shares in Zschau GmbH, Mannheim, as of 18 June 2021. Zschau GmbH was previously accounted for as a joint venture using the equity method. The acquisition of the remaining shares in the company led to control and thus to its full consolidation within the MVV Group. Zschau GmbH provides sustainable decentralised infrastructure, installation and other technical services in the fields of cable connections, heat, electrical installation, photovoltaics and storage facilities, e-mobility, cooling, heating and sanitary systems. The company thus helps to broaden the Group's market position. Its existing activities have been taken over and are the reason for the goodwill stated.

The fair values of the assets and liabilities identifiable upon the full consolidation of Zschau GmbH are presented in the following table. At Euro 2,026 thousand, the total purchase price corresponds to the fair value of the acquired net assets and goodwill. The portion for the acquisition of the remaining shares in the 4th quarter of the current financial year amounts to Euro 1,026 thousand and was paid in cash.

Identifiable assets and liabilities

	Zschau GmbH, Mannheim
Euro 000s	Recognised upon acquisition
Intangible assets	161
Property, plant and equipment	74
Right-of-use assets	16
Other financial assets	12
Trade receivables	342
Inventories	187
Other receivables and assets	251
Cash and cash equivalents	277
Deferred tax assets	5
Provisions	415
Trade payables	260
Financial debt	3,222
Other liabilities	261
Deferred tax liabilities	53
Fair value of net assets	**– 2,886**
Acquired share of net assets	**– 2,886**
Goodwill	4,912

Since being fully consolidated Zschau GmbH has contributed sales of Euro 1,127 thousand and earnings of Euro -372 thousand.

Additions to fully consolidated companies otherwise mainly involve companies newly added due to the change in status of other majority shareholdings at project companies in the Juwi subgroup.

Disposals from fully consolidated companies mostly relate to mergers of wind power and biogas companies, as well as to sales of project companies at the Juwi subgroup.

The changes in companies recognised at equity mainly relate to additions of project companies at the Juwi subgroup due to changes in the status of other majority shareholdings. Further changes involve the foundation of Smart City Mannheim GmbH, Mannheim, and the sale of Naunhofer Transportgesellschaft mbH, Parthenstein-Großsteinberg.

The remaining shares were acquired in luminatis S.a.r.l., Luxembourg, and thus indirectly in its subsidiary, luminatis Deutschland GmbH, Landau, which led to a change in status from companies recognised at equity to other majority shareholdings.

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 exchange rates:

Currency translation

	Reporting date rate		Average rate	
1 Euro	**30 Sep 2021**	30 Sep 2020	**1 Oct 2020 to 30 Sep 2021**	1 Oct 2019 to 30 Sep 2020
Czech crown (CZK)	25.495	27.233	25.969	26.182
British pound (GBP)	0.861	0.912	0.874	0.879
US dollar (USD)	1.158	1.171	1.195	1.121
South African rand (ZAR)	17.563	19.709	17.731	18.184

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 standard 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. Scheduled amortisation is based on the following useful lives which are guided by economic considerations or contractual conditions:

Useful lives in years	
Concessions	2 – 50
Industrial property rights and patents	1 – 25
Customer contracts and customer lists	1 – 23
Software and software licenses	1 – 40
Other intangible assets	1 – 40

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 – 40

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.

Recoverability review 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. Write-ups are recognised if the reasons for impairment losses recognised in the past no longer apply and the recoverable amount of the asset exceeds its carrying amount in an impairment test. 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 under 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 with a forecast horizon of a maximum of five years 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

Application is made of the right-of-use model for leases recognised at the lessee. 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. The lease payments associated with these leases are permitted to be expensed on a straight-line basis over the term of the lease. 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 value of the following payments not yet made as of the provision date for the right to use such assets:

- 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.

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 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 and payables, 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 the potential loss event 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 risk 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 option of recognising financial assets and liabilities at fair value through profit or loss upon initial recognition (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 in the financial result. Changes in the value of all other derivative financial instruments are recognised as income or expenses under other operating income and expenses. Derivatives deployed in cash flow hedges have to be treated separately. Where they additionally meet 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 have been countered by applying the best possible estimates based, among other methods, 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 less electricity and natural gas taxes

Sales include all revenues generated by the Group's typical business activities. MVV's main products are electricity, heat, gas, water and waste treatment and disposal. The Group also generates significant revenues from services and solar and wind power project development. 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 consideration received is higher than the services performed, a contract liability is recognised.

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 usually 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 2021**	FY 2020
Electricity	2,086,418	1,596,210
Heat	390,820	374,743
Gas	774,875	585,743
Water	90,064	89,458
Other sales	891,611	785,940
	4,233,788	**3,432,094**

Timing of sales recognition

Euro 000s	**FY 2021**	FY 2020
Sales recognised at a point in time	3,937,301	3,156,188
Electricity	2,086,418	1,596,210
Heat	390,820	374,743
Gas	774,875	585,743
Water	90,064	89,458
Other sales	595,124	510,034
Sales recognised over time	296,487	275,906
Project development	240,670	225,102
Operations management services	55,817	50,804
	4,233,788	**3,432,094**

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

Sales of Euro 78,344 thousand were recognised in the current financial year for items that were included in net contract liabilities at the beginning of the period under report (previous year: Euro 31,075 thousand).

In group currency, sales at our foreign subsidiaries came to Euro 348,217 thousand (previous year: Euro 262,857 thousand). The increase in this share of sales is chiefly due to the higher number of projects realised abroad.

2. Changes in inventories

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

3. Own work capitalised

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

4. Other operating income

Other operating income

Euro 000s	FY 2021	FY 2020
Income from IFRS 9 derivatives	1,223,996	110,797
Reversal of provisions	23,612	17,668
Operating taxes (including energy taxes)	21,428	3,133
Reimbursements	19,636	21,810
Agency agreements and personnel supplies	8,572	10,234
Rental income	5,874	4,880
Exchange rate gains	3,747	4,021
Income from sales of assets and write-ups	3,566	14,047
Miscellaneous	19,715	19,754
	1,330,146	**206,344**

Other operating income particularly includes measurement items for those energy trading transactions which require measurement under IFRS 9. This valuation-dependent income is countered by other operating expenses.

Reimbursements include refunds of costs for insurance policies and contractual penalties.

The income from operating taxes mainly relates to refunds of energy taxes.

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 2021	FY 2020
Minimum lease payments with maturities < 1 year	2,462	1,857
Minimum lease payments with maturities > 1 year and < 5 years	5,047	3,302
Minimum lease payments with maturities > 5 years	12,805	6,596

5. Cost of materials

Cost of materials

Euro 000s	FY 2021	FY 2020
Raw materials, supplies and purchased goods	2,523,220	1,807,045
Procurement of wind turbines and solar power systems	184,796	141,223
Purchased services	611,994	557,984
	3,320,010	**2,506,252**

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 2021	FY 2020
Wages and salaries	396,471	371,480
Social security expenses and welfare expenses	68,015	63,143
Pension expenses	22,815	21,800
	487,301	**456,423**

MVV had an annual average of 6,344 employees (previous year: 6,182). This total includes 10 executives (previous year: 10), 5,990 employees (previous year: 5,851), 308 trainees (previous year: 295) and 35 interns/students (previous year: 26).

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 2021	FY 2020
Expenses for IFRS 9 derivatives	899,054	122,944
Operating taxes (including energy taxes)	36,419	14,901
Contributions, fees and duties	34,302	32,183
Expenses for advisory services	31,809	26,262
Maintenance, repair and IT services	20,170	19,632
Rental, leasehold and leasing expenses	16,227	13,851
Other services	13,111	14,241
Public relations expenses	9,389	9,720
Other employee-related expenses	8,928	10,426
Exchange rate losses	2,490	4,951
Miscellaneous	28,259	21,910
	1,100,158	**291,021**

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

The expenses for operating taxes mainly include expenses for energy taxes relating to energy consumption.

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 2021	FY 2020
Income from companies recognised at equity	36,167	21,504
Income from other shareholdings	– 2,161	– 106
Expenses/income from sales of financial assets	517	2,669
	34,523	**24,067**

The increase in income from companies recognised at equity is chiefly due to the remeasurement performed on the shares held in Fernwärme-Rhein-Neckar GmbH due to the takeover of all the remaining shares in this company in the financial year under report.

9. Depreciation and amortisation

Depreciation and amortisation

Euro 000s	FY 2021	FY 2020
Depreciation and amortisation	203,900	206,997
of which impairment losses	–	2,161

10. Financing income

Financing income

Euro 000s	FY 2021	FY 2020
Interest income from finance leases	3,900	3,961
Income from currency translation in connection with financing activities	4,663	3,371
Income from IFRS 9 measurement	143	1,254
Interest income from current account, overnight and fixed-term deposits	518	901
Other interest and similar income	4,390	2,837
	13,614	**12,324**

11. Financing expenses

Financing expenses

Euro 000s	FY 2021	FY 2020
Interest expenses from current account, non-current and current loans	42,732	40,462
Expenses for currency translation in connection with financing activities	2,282	9,737
Expenses for IFRS 9 measurement	583	1,466
Compounding of provisions	920	578
Other interest and similar expenses	7,440	8,433
	53,957	**60,676**

The other interest and similar expenses were reduced by Euro 2,287 thousand as a result of the capitalisation of borrowing interest (previous year: Euro 628 thousand). The financing cost rate thereby assumed ranged from 1.8 % to 2.4 % in the financial year under report and from 1.1 % 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 2021	FY 2020
Actual taxes	64,150	48,405
Deferred taxes	80,143	– 1,455
	144,293	**46,950**

Current tax expenses comprise trade 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 expenses are due on the one hand to tax expenses of Euro 1,202 thousand (previous year: tax expenses of Euro 12,454 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, and on the other hand to deferred tax expenses of Euro 78,941 thousand (previous year: tax income of Euro 13,909 thousand) attributable to the arising and/or reversal of temporary differences.

Actual tax expenses were reduced by Euro 10,082 thousand by using tax losses not previously recognised (previous year: Euro 10,522 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 2021	FY 2020
Earnings before taxes (EBT)	**489,325**	**161,142**
Expected tax expenses based on tax rate of 30.3 % (previous year: 30.3 %)	**148,265**	**48,826**
Deviations resulting from trade tax assessment base	1,545	1,171
Deviations from expected tax rate	– 773	– 5,071
Utilisation of losses carried forward, change in write-down for losses and losses for which no deferred taxes are recognised	1,202	12,447
Non-deductible expenses	3,569	10,380
Tax-exempt income	– 5,009	– 12,856
Income from shareholdings recognised at equity	– 937	– 3,299
Permanent differences	– 4,818	4,913
Taxes for previous years	1,815	– 13,223
Goodwill impairments	–	2,517
Miscellaneous	– 566	1,145
Effective tax expenses	**144,293**	**46,950**
Effective tax rate (%)	**29.5**	**29.1**

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 2021	FY 2020
Share of earnings attributable to MVV Energie AG shareholders (Euro 000s)	198,777	93,901
Number of shares (weighted average in 000s)	65,907	65,907
Earnings per share (Euro)	3.02	1.42
Dividend per share (Euro)	1.05	0.95

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 2020 financial year were accepted by the Annual General Meeting on 12 March 2021. A dividend of Euro 62,611 thousand was distributed.

Given the company's earnings performance, the Executive Board has decided to propose an increase in the dividend of Euro 0.10 per share to Euro 1.05 per share for approval by the Annual General Meeting on 11 March 2022. This would result in a distribution of Euro 69,202 thousand. The Supervisory Board will decide in December 2021 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 amounted to Euro 659 thousand in the 2021 financial year (previous year: Euro 803 thousand). Development expenses capitalised under IAS 38 came to Euro 236 thousand (previous year: Euro 257 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 2021 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 4.6 % to 11.3 % (previous year: 4.3 % to 10.2 %). 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 % in most cases 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 + 14.8 %. An increase in the discount rate by + 0.5 % lowers the recoverable amount by – 12.0 %.

The carrying amounts stated for goodwill are structured as follows:

Goodwill carrying amounts

Euro 000s	**30 Sep 2021**	30 Sep 2020
Juwi subgroup	75,144	74,970
Energieversorgung Offenbach subgroup	75,894	75,894
MVV Enamic subgroup	36,596	36,233
Windwärts subgroup	3,910	3,910
MVV Energie CZ subgroup	6,346	5,885
MVV Umwelt subgroup	3,082	3,080
Other subgroups	7,935	3,023
	208,907	**202,995**

The addition to goodwill at other subgroups is due to the full consolidation of a provider of technical services for heating, sanitary facilities, photovoltaics and electrical installation. The increase in goodwill at the MVV Enamic subgroup results from the acquisition of assets and takeover of staff at IRK DCI GmbH, Hachenburg, by DC-Datacenter-Group GmbH, Wallmenroth, in the 2nd quarter of the 2021 financial year.

Intangible assets				
Euro 000s	Concessions, industrial property rights and similar rights and values	Goodwill	Advance payments	**Total**
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**
Gross value at 1 October 2020	340,523	257,724	5,334	603,581
Change in scope of consolidation	1,362	5,444	–	6,806
Currency adjustments	1,357	624	13	1,994
Additions	3,237	–	10,467	13,704
Disposals	– 20,270	–	– 2	– 20,272
Reclassifications	3,995	–	– 3,466	529
Gross value at 30 September 2021	**330,204**	**263,792**	**12,346**	**606,342**
Amortisation at 1 October 2020	– 264,888	– 54,729	–	– 319,617
Currency adjustments	– 363	– 156	–	– 519
Scheduled amortisation	– 14,582	–	–	– 14,582
Disposals	16,198	–	–	16,198
Reclassifications	– 159	–	–	– 159
Amortisation at 30 September 2021	**– 263,794**	**– 54,885**	**–**	**– 318,679**
Net value at 30 September 2021	**66,410**	**208,907**	**12,346**	**287,663**

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 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**
Gross value at 1 October 2020	957,055	4,871,319	187,918	321,645	6,337,937
Change in scope of consolidation	157	21,350	– 1,971	–	19,536
Currency adjustments	16,480	26,434	371	4,104	47,389
Additions	10,869	87,348	8,581	173,647	280,445
Subsidy payments received	– 1,704	– 6,877	– 18	– 1,557	– 10,156
Disposals	– 2,441	– 24,136	– 9,183	– 4,477	– 40,237
Reclassifications	60,405	203,488	2,166	– 244,815	21,244
Gross value at 30 September 2021	**1,040,821**	**5,178,926**	**187,864**	**248,547**	**6,656,158**
Depreciation at 1 October 2020	– 469,808	– 2,999,110	– 142,396	– 78	– 3,611,392
Change in scope of consolidation	–	–	694	–	694
Currency adjustments	– 5,910	– 11,883	– 284	– 8	– 18,085
Scheduled depreciation	– 22,966	– 138,995	– 9,579	–	– 171,540
Disposals	2,015	21,428	8,855	–	32,298
Reclassifications	6	138	158	– 143	159
Depreciation at 30 September 2021	– 496,663	– 3,128,422	– 142,552	– 229	– 3,767,866
Net value at 30 September 2021	**544,158**	**2,050,504**	**45,312**	**248,318**	**2,888,292**

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 9,832 thousand (previous year: Euro 9,452 thousand) has been provided as security for financial debt. This involves land and buildings, technical equipment and machinery. Property, plant and equipment of Euro 92,303 thousand is subject to restrictions on disposal (previous year: Euro 101,291 thousand).

Subsidy payments received involve government grants received in the 2021 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.

Advance payments account for an immaterial share of advance payments and construction in progress. The largest additions to advance payments and construction in progress in the 2021 financial year include the takeover of a windfarm in Kiel, the extension and renewal of transmission grids in Kiel and Mannheim and the construction of biogas plants in Dresden and Bernburg.

Property, plant and equipment also include assets leased by MVV as the lessor within operating leases. The carrying amounts attributable to these assets as of 30 September 2021 were divided into land and buildings of Euro 3,110 thousand and technical equipment and machinery of Euro 4,646 thousand.

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 operating equipment	Other leased items	**Total**
Opening balance at 1 October 2020	116,990	600	4,391	26,819	33	311	149,144
Depreciation and amortisation	– 11,288	– 555	– 2,707	– 3,027	– 17	– 183	– 17,777
Additions	17,477	1,163	4,107	1,435	–	4	24,186
Other changes	– 460	– 33	– 135	– 103	–	1	– 730
Closing balance at 30 September 2021	**122,719**	**1,175**	**5,656**	**25,124**	**16**	**133**	**154,823**

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 2021**	FY 2020
Interest expenses for lease liabilities	4,170	4,289
Outflow of cash for leases	19,325	16,036
Expenses for short-term leases	1,365	1,309
Expenses for low-value leases	721	509
Expenses for variable lease payments	354	311
Income from sub-lease arrangements	–	308

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 33 thousand in the 2021 financial year (previous year: Euro 32 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 2021**	FY 2020
Gross value at 1 October	2,424	2,606
Currency adjustments	27	– 182
Gross value at 30 September	**2,451**	**2,424**
Depreciation at 1 October	–	–
Depreciation at 30 September	**–**	**–**
Net value at 30 September	**2,451**	**2,424**

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

Euro 000s	Grosskraftwerk Mannheim AG, Mannheim Financial year	Grosskraftwerk Mannheim AG, Mannheim Previous year	Stadtwerke Ingolstadt Beteiligungen GmbH, Ingolstadt Financial year	Stadtwerke Ingolstadt Beteiligungen GmbH, Ingolstadt Previous year
Sales excluding energy taxes	531,867	585,404	200,640	188,633
Scheduled depreciation and amortisation	– 127,388	– 104,230	– 15,261	– 14,450
Interest income	1	2	88	639
Interest expenses	– 37,868	– 46,670	– 691	– 897
Income tax expenses/income	– 16,229	– 11,291	– 7,747	– 6,967
Annual net income	25,256	26,659	18,624	16,634
Other income and expenses	– 3,211	– 64,618	185	128
Total comprehensive income for period	**22,045**	**– 37,959**	**18,809**	**16,762**
Dividends received from material joint ventures	–	–	7,771	8,576

Further key financial figures for material joint ventures

Euro 000s	Grosskraftwerk Mannheim AG, Mannheim Financial year	Grosskraftwerk Mannheim AG, Mannheim Previous year	Stadtwerke Ingolstadt Beteiligungen GmbH, Ingolstadt Financial year	Stadtwerke Ingolstadt Beteiligungen GmbH, Ingolstadt Previous year
Assets	**1,795,709**	**1,887,580**	**287,230**	**273,803**
Non-current assets	1,540,530	1,656,133	244,134	236,566
Current assets	255,179	231,447	43,096	37,237
of which cash and cash equivalents	336	7,028	1,483	963
Equity and debt	**1,795,709**	**1,887,580**	**287,231**	**273,803**
Equity	136,203	114,158	68,484	65,731
Non-current provisions	721,605	723,956	11,842	6,517
Non-current debt and other liability items	665,589	727,626	80,457	83,807
of which non-current financial debt	605,000	668,500	16,394	18,747
Current provisions	165,799	150,521	225	60
Current debt and other liability items	106,513	171,319	126,223	117,688
of which current financial debt	69,870	150,403	91,596	87,698

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

Euro 000s	Grosskraftwerk Mannheim AG, Mannheim Financial year	Grosskraftwerk Mannheim AG, Mannheim Previous year	Stadtwerke Ingolstadt Beteiligungen GmbH, Ingolstadt Financial year	Stadtwerke Ingolstadt Beteiligungen GmbH, Ingolstadt Previous year
Net assets at 1 October	114,158	152,117	65,731	66,689
Profit/loss for period	25,256	26,659	18,624	16,634
Distribution	–	–	– 16,056	– 17,720
Other income and expenses	– 3,211	– 64,618	185	128
Net assets at 30 September	**136,203**	**114,158**	**68,484**	**65,731**
Group share of net assets	38,137	31,964	33,146	31,814
Other items	1,897	1,897	– 154	– 154
Goodwill			53,759	53,759
Carrying amount of interest in joint ventures	**40,034**	**33,861**	**86,751**	**85,419**

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 any 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	9,501	5,369
Other income and expenses	885	– 360
Total comprehensive income for	10,386	5,009
Carrying amount of interest in non-material joint ventures	**59,857**	**58,835**

19. Associates

The aggregate profit/loss, 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	4,112	3,007
Total comprehensive income for period	4,112	3,007
Carrying amount of interest in non-material associates	**14,857**	**14,216**

The income from shareholdings collected by MVV from associates amounted to Euro 510 thousand in the 2021 financial year (previous year: Euro 230 thousand).

MVV's share of the contingent liabilities at associates amounted to Euro 1,606 thousand (previous year: Euro 1,690 thousand).

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

Given their size and 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 2020 to 30 Sep 2021**	1 Oct 2019 to 30 Sep 2020
Sales excluding energy taxes	381,082	354,896
Annual net income	85,292	11,380
Other income and expenses	38,111	– 8,411
Total comprehensive income for period	**123,403**	**2,969**
Total comprehensive income attributable to non-controlling interests	61,700	1,484
Dividends paid (to non-controlling shareholders)	8,605	6,633

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

Euro 000s	**1 Oct 2020 to 30 Sep 2021**	1 Oct 2019 to 30 Sep 2020
Sales excluding energy taxes	993,666	712,670
Annual net income	218,784	25,936
Other income and expenses	907	1,375
Total comprehensive income for period	**219,691**	**27,311**
Total comprehensive income attributable to non-controlling interests	107,649	13,382
Dividends paid (to non-controlling shareholders)	7,142	6,270

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

Euro 000s	**30 Sep 2021**	30 Sep 2020
Assets	**575,465**	**415,889**
Non-current assets	410,778	333,301
Current assets	164,687	82,588
of which cash and cash equivalents	8,851	21,892
Equity and debt	**575,465**	**415,889**
Equity	245,249	139,056
Non-current provisions	30,432	32,487
Non-current debt and other liability items	177,243	163,554
of which non-current financial debt	128,467	130,227
Current provisions	5,876	4,932
Current debt and other liability items	116,665	75,860
of which current financial debt	15,741	7,815

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

Euro 000s	**30 Sep 2021**	30 Sep 2020
Assets	**1,276,894**	**711,181**
Non-current assets	772,273	656,770
Current assets	504,621	54,411
of which cash and cash equivalents	181,697	1,976
Equity and debt	**1,276,894**	**711,181**
Equity	429,222	224,105
Non-current provisions	32,979	32,774
Non-current debt and other liability items	344,498	299,617
of which non-current financial debt	257,187	263,626
Current provisions	25,982	15,343
Current debt and other liability items	444,213	139,342
of which current financial debt	36,351	56,621

Total non-controlled interests in subsidiaries amounted to Euro 367,407 thousand in the period under report, of which Euro 202,667 thousand related to Stadtwerke Kiel AG, Kiel, Euro 103,954 thousand to Energieversorgung Offenbach AG, Offenbach am Main, and Euro 60,786 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 "Financial instruments" (Note **35**).

Other financial assets comprise other majority shareholdings, other shareholdings, receivables from 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. 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 4.4 % (previous year: 4.8 %). The average period for which interest rates remain fixed amounts to 4.1 years in the case of fixed-interest loans (previous year: 2.1 years) and 6.6 years in the case of finance leases (previous year: 6.5 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 the 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 2021**	30 Sep 2020
Minimum lease payments with maturities < 1 year	12,607	13,909
Minimum lease payments with maturities > 1 years and < 5 years	44,079	44,550
of which minimum lease payments with maturities > 1 year and < 2 years	10,930	13,785
of which minimum lease payments with maturities > 2 years and < 3 years	11,152	10,110
of which minimum lease payments with maturities > 3 years and < 4 years	11,143	10,332
of which minimum lease payments with maturities > 4 years and < 5 years	10,854	10,323
Minimum lease payments with maturities > 5 years	25,352	32,297
Total minimum lease payments	**82,038**	**90,756**
Less financing income not yet realised	– 16,759	– 18,657
Net investments in finance leases	**65,279**	**72,099**

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 2021**	FY 2020
Financing income from net investment in lease	3,900	3,961
Profit on sale	16	91

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 2021			30 September 2020	
Euro 000s	**Non-current**	**Current**	**Total**	Non-current	Current	Total
Financial receivables and assets						
Derivative financial instruments	1,240,355	7,757,340	8,997,695	81,246	367,308	448,554
Receivables from security deposits for energy trading transactions	–	–	–	–	21,763	21,763
Receivables from finance leases	–	9,397	9,397	–	10,476	10,476
Suppliers with debit balances	–	11,619	11,619	–	7,730	7,730
Loans	–	2,220	2,220	–	1,245	1,245
Receivables from employees	–	252	252	–	269	269
Escrow accounts	–	35	35	–	35	35
Miscellaneous other financial assets	8,612	16,203	24,815	6,752	18,346	25,098
Non-financial receivables and assets						
Project development contract assets	–	47,992	47,992	–	6,019	6,019
Other contract assets	3,289	43,106	46,395	3,098	49,411	52,509
Other tax receivables	–	63,563	63,563	–	66,893	66,893
Deferred expenses and accrued income	3,995	7,873	11,868	6,250	7,422	13,672
Emission rights	–	2,632	2,632	–	2,462	2,462
Miscellaneous other non-financial assets	3,411	3,313	6,724	4,568	4,223	8,791
	1,259,662	**7,965,545**	**9,225,207**	**101,914**	**563,602**	**665,516**

Derivative financial instruments (financial receivables and assets)

		30 September 2021			30 September 2020	
Euro 000s	**Non-current**	**Current**	**Total**	Non-current	Current	Total
Derivative financial instruments	1,240,355	7,757,340	8,997,695	81,246	367,308	448,554
of which not involving IFS 9 hedges	762,334	6,204,528	6,966,862	52,935	295,415	348,350
of which involving IFRS 9 hedges	478,021	1,552,812	2,030,833	28,311	71,893	100,204

Derivative financial instruments increased sharply in value compared with the previous year. This was due in particular to the significant 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 current 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.

Due to projects which have not yet been settled, project development contract assets showed a significant increase of Euro 41,897 thousand. By contrast, other contract assets decreased by Euro 6,038 thousand, with this reduction being mainly 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 6,416 thousand for the past extension and renewal of infrastructure assets for British generation positions. 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 acquisition costs pursuant to IFRS 15

Euro 000s	**FY 2021**	FY 2020
Balance at 1 October	1,071	444
Balance at 30 September	1,697	1,071

Other receivables and assets

	30 September 2021			30 September 2020		
Euro 000s	**Non-current**	**Current**	**Total**	Non-current	Current	Total
Other receivables and assets						
from third parties	1,259,230	7,930,424	9,189,654	101,120	509,809	610,929
from other majority shareholdings	–	1,139	1,139	–	919	919
from companies recognised at equity	432	33,982	34,414	794	52,857	53,651
from other shareholdings	–	–	–	–	17	17
	1,259,662	**7,965,545**	**9,225,207**	**101,914**	**563,602**	**665,516**

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

To reduce the counterparty risk involved in highly fluctuating fair values of energy trading derivatives, security deposits are exchanged with external trading partners. These involve margins. To reduce these counterparty risks, payments are made to the European Energy Exchange (EEX) and the Intercontinental Exchange (ICE). These are included in the receivables from security deposits for energy trading transactions line item. Receivables from security deposits decreased year-on-year to Euro 0 thousand (previous year: Euro 21,763 thousand).

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

Contract assets

Euro 000s	**FY 2021**	FY 2020
Balance at 1 October	58,528	67,835
Balance at 30 September	94,387	58,528

23. Inventories

Inventories

Euro 000s	**30 Sep 2021**	30 Sep 2020
Raw materials and supplies	90,441	91,247
Finished and unfinished products and services (project rights)	55,321	44,437
Finished and unfinished products and services (other) and merchandise	50,797	48,038
Advance payments	5,654	7,137
Commodity trading assets	8,667	7,881
	210,880	**198,740**

Write-downs of Euro 5,368 thousand were recognised for inventories (previous year: Euro 1,695 thousand). Write-ups of Euro 3,464 thousand were included due to higher net disposal prices (previous year: Euro 1,475 thousand).

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

24. Trade receivables

Trade receivables

Euro 000s	**30 Sep 2021**	30 Sep 2020
Trade receivables	376,015	332,939
of which due from other majority shareholdings	122	238
of which due from companies recognised at equity	10,698	15,081
of which due from other shareholdings	876	387

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 arise in connection with contracts with customers.

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

25. Income tax receivables

The income tax receivables of Euro 30,136 thousand (previous year: Euro 28,465 thousand) mainly relate to corporate income tax and trade tax refund claims. These have been recognised at nominal value.

26. Cash and cash equivalents

Cash and cash equivalents predominantly comprise credit balances at banks. The inflows of security deposits for counterparty default risk (margins) in the year under report increased cash and cash equivalents by Euro 843 million (previous year: outflow of Euro 8 million). The acquisition of fully consolidated companies and other business units resulted in the addition of cash and cash equivalents of Euro 8,771 thousand (previous year: Euro 1,595 thousand). The disposal of fully consolidated companies and other business units led to the retirement of cash and cash equivalents of Euro 1,508 thousand (previous year: Euro 198 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 with an arithmetic value 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 2021, while FS DE Energy GmbH held 45.08 % of the shares. The remaining 4.82 % 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 70,783 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 8,185 thousand).

28. Provisions

Provisions

Euro 000s	Balance at 1 Oct 2020	Change in scope of consolida-tion	Currency adjust-ments	Utilised	Reversed	Added	Reclassi-fied	Interest compo-nent	**Balance at 30 Sep 2021**
Non-current provisions									
Pensions and similar obligations	**100,258**	**–**	**–**	**– 2,825**		**– 2,003**	**–**	**614**	**96,044**
Other provisions									–
Personnel-related obligations	39,709	–	6	– 2,516	– 97	1,887	– 2,662	– 38	36,289
Refurbishment, dismantling and warranty obligations	43,068	15	189	– 835	– 1,742	11,316	– 1,522	1	50,490
Provisions for litigation and con-tract risks	1,012	–	–	– 161	–	753	– 15	–	1,589
Miscellaneous contingencies	24,372	6	–	– 37	– 6,291	38	–	77	18,165
Total other provisions	**108,161**	**21**	**195**	**– 3,549**	**– 8,130**	**13,994**	**– 4,199**	**40**	**106,533**
Total non-current provisions	**208,419**	**21**	**195**	**– 6,374**	**– 8,130**	**11,991**	**– 4,199**	**654**	**202,577**
									–
Current provisions									**–**
Tax provisions	**1,259**	**–**	**–**	**– 130**	**–**	**666**	**–**	**–**	**1,795**
Other provisions									–
Personnel-related obligations	40,707	152	70	– 35,481	– 1,480	37,633	2,662	–	44,263
Services not yet invoiced	43,575	25	45	– 38,433	– 2,697	78,198	–	–	80,713
Refurbishment, dismantling and warranty obligations	18,709	–	390	– 3,326	– 9,718	1,173	1,522	–	8,750
Provisions for litigation and contract risks	4,025	39	13	– 719	– 1,143	1,713	15	–	3,943
Miscellaneous contingencies	20,887	–	17	– 8,071	– 2,344	26,131	–	–	36,620
Total other provisions	**127,903**	**216**	**535**	**– 86,030**	**– 17,382**	**144,848**	**4,199**	**–**	**174,289**
Total current provisions	**129,162**	**216**	**535**	**– 86,160**	**– 17,382**	**145,514**	**4,199**	**–**	**176,084**
									–
Total provisions	**337,581**	**237**	**730**	**– 92,534**	**– 25,512**	**157,505**	**–**	**654**	**378,661**

Provisions broken down by maturity

		30 September 2021			30 September 2020	
Euro 000s	**Non-current**	**Current**	**Total**	Non-current	Current	Total
Provisions for pensions and similar obligations	96,044	–	96,044	100,258	–	100,258
Tax provisions	–	1,795	1,795	–	1,259	1,259
Personnel-related obligations	36,289	44,263	80,552	39,709	40,707	80,416
Services not yet invoiced	–	80,713	80,713	–	43,575	43,575
Refurbishment, dismantling and warranty obligations	50,490	8,750	59,240	43,068	18,709	61,777
Provisions for litigation and contract risks	1,589	3,943	5,532	1,012	4,025	5,037
Miscellaneous contingencies	18,165	36,620	54,785	24,372	20,887	45,259
	202,577	**176,084**	**378,661**	**208,419**	**129,162**	**337,581**

Tax provisions include other tax provisions for value added taxes as of the reporting date.

Provisions are only recognised for uncertain income tax items if the fiscal authorities are unlikely to recognise the respective item.

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 and warranty obligations 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 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.

The provisions recognised are utilised in accordance 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 1.0 %. 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 pension 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 hereby 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 2022 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 33,734 thousand were made to state pension systems in the 2021 financial year (previous year: Euro 31,603 thousand). Moreover, an amount of Euro 16,195 thousand was paid into defined contribution pension schemes (previous year: Euro 15,749 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 pensions and similar obligations are recognised exclusively for defined benefit plans.

The principal estimates used when measuring provisions for pensions and similar obligations particularly include 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.

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 2021:

Parameters		
	FY 2021	FY 2020
Discount rate	0.9 %	0.6 %
Future pay rises	2.0-2.5 %	2.0-2.5 %
Future pension increases	1.6-3.0 %	1.6-3.0 %

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

Pension provision expenses

Euro 000s	**FY 2021**	FY 2020
Service cost	4,192	3,491
Interest expenses	614	375
	4,806	**3,866**

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 2021			30 September 2020
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	100,990	732	100,258	104,521	714	103,807
Current service cost	3,775	–	3,775	3,491	–	3,491
Retrospective service cost	418	–	418	–	–	–
Interest expenses (interest income)	614	–	614	375	–	375
Remeasurement						
(i) Income from plan assets (excluding amounts included in interest income from plan assets)	–	5	– 5	–	2	– 2
(ii) Actuarial gains/losses						
of which due to changes in financial assumptions	– 4,623	67	– 4,690	– 3,891	40	– 3,931
of which due to changes in demographic assumptions	–	–	–	12	–	12
of which due to changes in experience adjustments	– 1,479	–	– 1,479	– 849	–	– 849
Payments made to beneficiaries	– 2,825	–	– 2,825	– 2,680	–	– 2,680
Employer contributions	–	22	– 22	11	– 24	35
Balance at 30 September	**96,870**	**826**	**96,044**	**100,990**	**732**	**100,258**

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 provisions

Euro 000s	FY 2021	FY 2020
Present value of defined benefit obligation	96,870	100,990
Fair value of plan assets	826	732
Provisions recognised at 30 September	**96,044**	**100,258**

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 2021	FY 2020
Accumulated actuarial gains (+) and losses (-) recognised in equity at 1 October	– 24,323	– 26,693
Actuarial gains (+) and losses (-) recognised in equity	3,603	2,370
Accumulated actuarial gains (+) and losses (-) recognised in equity at 30 September	**– 20,720**	**– 24,323**

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 4,641 thousand are forecast for existing pension obligations in the 2022 financial year.

In the financial year, use was made of a discount rate appropriate to the expected weighted remaining term of 16 years.

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

Expected pension payments

Euro 000s	
2022	4,641
2023	3,377
2024	3,467
2025	6,900
2026	11,576
>2026	71,840
	101,801

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 7 %	Increase by 8 %
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 2021			30 September 2020		
Euro 000s	**Non-current**	**Current**	**Total**	Non-current	Current	Total
Liabilities						
to banks	1,456,974	254,062	1,711,036	1,408,149	107,017	1,515,166
in connection with leases	132,971	15,630	148,601	125,744	15,203	140,947
to other majority shareholdings	–	697	697	–	742	742
to companies recognised at equity	–	1,581	1,581	–	36,581	36,581
to other shareholdings	–	1,500	1,500	–	–	–
Other financial debt	19,225	3,636	22,861	19,275	3,980	23,255
	1,609,170	**277,106**	**1,886,276**	**1,553,168**	**163,523**	**1,716,691**

Maturity in years

	30 September 2021			30 September 2020		
Euro 000s	**< 1 year**	**1 - 5 years**	**> 5 years**	< 1 year	1 - 5 years	> 5 years
Liabilities						
to banks	254,062	669,969	787,005	107,017	715,230	692,919
in connection with leases	15,630	46,053	86,918	15,203	44,076	81,668
to other majority shareholdings, companies recognised at equity and other shareholdings	3,778	–	–	37,968	–	–
Other financial debt	3,636	8,001	11,224	3,335	8,051	11,224
	277,106	**724,023**	**885,147**	**163,523**	**767,357**	**785,811**

The fixed-rate liabilities to banks of Euro 1,184,151 thousand (previous year: Euro 1,001,670 thousand) have an average interest rate of 1.8 % (previous year: 2.0 %), while the floating-rate liabilities to banks of Euro 526,884 thousand (previous year: Euro 513,495 thousand) have an average interest rate of 1.5 % (previous year: 1.8 %). This interest rate is influenced by foreign-currency liabilities with higher interest rates. The average remaining period for which the interest rate remains fixed in the case of fixed-rate liabilities amounts to nine years (previous year: seven years). The floating-rate liabilities to banks are hedged.

At 30 September 2021, MVV had undrawn committed credit lines of Euro 1,194,929 thousand (previous year: Euro 1,139,252 thousand).

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 and presented in the tables below. The hedge 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

Euro 000s	**30 September 2021**			30 September 2020		
	Non-current	**Current**	**Total**	Non-current	Current	Total
Other financial liabilities						
Derivative financial instruments	1,124,653	7,732,791	8,857,444	129,085	368,796	497,881
Liabilities to employees	–	32,476	32,476	–	27,770	27,770
Customer credit balances	–	6,189	6,189	–	6,556	6,556
Interest liabilities	–	6,596	6,596	–	6,875	6,875
Liabilities for security deposits for energy trading transactions	–	821,734	821,734	–	–	–
Concession duties	–	3,443	3,443	–	2,521	2,521
Social security liabilities	–	799	799	–	727	727
Miscellaneous other financial liabilities	28,459	13,030	41,489	30,232	41,569	71,801
Other non-financial liabilities						
Contract liabilities for advance payments received	–	77,326	77,326	–	72,699	72,699
Contract liabilities for building cost grants	115,556	8,172	123,728	109,734	7,394	117,128
Other contract liabilities	11,569	28,630	40,199	15,578	5,645	21,223
Liabilities in connection with German Fuel Emissions Trading Act (BEHG)	707	16,861	17,568	–	–	–
Liabilities for other taxes	–	55,918	55,918	–	102,756	102,756
Miscellaneous other non-financial liabilities	5,993	1,451	7,444	5,517	5,939	11,456
	1,286,937	**8,805,416**	**10,092,353**	**290,146**	**649,247**	**939,393**

Other liabilities

Euro 000s	**30 September 2021**			30 September 2020		
	Non-current	**Current**	**Total**	Non-current	Current	Total
Liabilities	1,286,937	8,728,090	10,015,027	290,146	576,548	866,694
of which to companies recognised at equity	1,187	44,430	45,617	999	92,570	93,569
Advance payments received for orders	–	77,326	77,326	–	72,699	72,699
	1,286,937	**8,805,416**	**10,092,353**	**290,146**	**649,247**	**939,393**

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)

Euro 000s	30 September 2021 Non-current	Current	Total	30 September 2020 Non-current	Current	Total
Derivative financial instruments	1,124,653	7,732,791	8,857,444	129,085	368,796	497,881
of which not involving IFRS 9 hedges	743,090	5,962,443	6,705,533	52,642	289,477	342,119
of which involving IFRS 9 hedges	381,563	1,770,348	2,151,911	76,443	79,319	155,762

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. Liabilities of Euro 821,734 thousand were recognised for security deposits for energy trading transactions as of the balance sheet date on 30 September 2021 (previous year: Euro 0 thousand).

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

As of 30 September 2021, non-financial liabilities for other taxes chiefly include value added tax liabilities.

The recognition of liabilities in connection with the German Fuel Emissions Trading Act (BEHG) was introduced upon the entry into force of this legislation as of 1 January 2021.

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

Contract liabilities

Euro 000s	**FY 2021**	FY 2020
Balance at 1 October	211,050	152,147
Balance at 30 September	**241,253**	**211,050**

Contract liabilities showed a significant year-on-year increase as of 30 September 2021. This chiefly resulted from the planning and construction of photovoltaics systems.

MVV expects that, of the transaction price allocated to unsatisfied performance obligations as of 30 September 2021, an amount of Euro 114,128 thousand (previous year: Euro 85,737 thousand) will be recognised as revenues in the next reporting period. The remaining amount of Euro 127,125 thousand (previous year: Euro 125,311 thousand) will be recognised in subsequent financial years.

32. Trade payables

Trade payables

Euro 000s	**30 Sep 2021**	30 Sep 2020
Trade payables	383,286	336,752
to other majority shareholdings	153	190
to companies recognised at equity	14,905	12,229
to other shareholdings	–	10

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 36,011 thousand (previous year: Euro 26,405 thousand).

The deferred taxes reported for the 2021 financial year relate to the following items:

Deferred taxes

	30 September 2021		30 September 2020	
Euro 000s	**Deferred tax assets**	**Deferred tax liabilities**	Deferred tax assets	Deferred tax liabilities
Intangible assets	2,799	– 12,400	3,077	– 13,416
Property, plant and equipment, including investment properties	20,727	– 179,475	20,760	– 180,319
Right-of-use assets	–	– 41,386	–	– 39,513
Inventories	9,255	– 4,688	9,067	– 3,854
Special item	–	– 12,516	–	– 9,870
Other assets and positive fair values of derivatives	15,466	– 3,178,280	13,250	– 200,933
Provisions for pensions	17,158	–	18,672	–
Non-current other provisions	22,545	–	25,806	–
Current other provisions	9,996	– 24,566	5,143	– 16,354
Liabilities and negative fair values of derivatives	3,125,029	– 25,885	210,456	– 20,607
Lease liabilities	39,580	–	37,204	–
Losses carried forward	46,063	–	31,575	–
Deferred taxes (gross)	3,308,618	– 3,479,196	375,010	– 484,866
Netting	– 3,204,749	3,204,749	– 344,666	344,666
Deferred taxes (net)	**103,869**	**– 274,447**	**30,344**	**– 140,200**

Of the (net) deferred taxes presented above, Euro 18,806 thousand (previous year: Euro 15,089 thousand) relate to non-current deferred tax assets and Euro 60,408 thousand (previous year: Euro 89,477 thousand) to non-current deferred tax liabilities.

No deferred tax assets have been recognised for corporate income tax loss carryovers of Euro 71,504 thousand (previous year: Euro 109,814 thousand), trade tax loss carryovers of Euro 52,359 thousand (previous year: Euro 89,110 thousand) or foreign loss carryovers of Euro 114,369 thousand (previous year: Euro 90,474 thousand).

For temporary differences of Euro 10,220 thousand at shareholdings (previous year: Euro 11,525 thousand), no deferred tax liabilities have been stated for an amount of Euro 3,097 thousand (previous year: Euro 3,492 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 5,667 thousand (previous year: Euro 4,442 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 44,851 thousand were recognised directly in other comprehensive income as part of group equity in the 2021 financial year (previous year: Euro 25,045 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 2021		30 September 2020	
Euro 000s	**Income tax**	**Gross**	Income tax	Gross
Actuarial gains and losses	– 2,161	8,046	– 1,450	4,767
Share of total comprehensive income attributable to companies recognised at equity	–	– 360	–	– 18,217
Items that will not be reclassified to profit or loss	**– 2,161**	**7,686**	**– 1,450**	**– 13,450**
Cash flow hedges/hedging costs	21,968	– 66,560	4,622	– 18,566
Currency translation differences	–	12,022	–	– 10,030
Share of total comprehensive income attributable to companies recognised at equity	–	– 369	–	– 366
Items that will be reclassified to profit or loss	**21,968**	**– 54,907**	**4,622**	**– 28,962**

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 7.0 million). It has obligations of this nature in the form of guarantees amounting to Euro 9.2 million (previous year: 13.3 million). As in the previous year, no collateral has been provided for third-party liabilities.

MVV has purchase commitments of Euro 116.1 million in connection with investment orders placed and financial obligations (previous year: Euro 65.7 million).

The Group has a contingent claim from the State of Baden-Württemberg and the City of Manheim in connection with a land decontamination measure. This claim has a present value of Euro 2.3 million (previous year: Euro 2.7 million).

35. Financial instruments

Fair values and carrying amounts of financial instruments

The carrying amounts of financial instruments recognised at MVV and their allocation to the 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

Euro 000s	IFRS 9 measurement categories	30 Sep 2021	30 Sep 2020
Assets			
Financial assets			
of which other shareholdings	Fair value through profit or loss	5,909	5,575
	Not applicable	2,162	1,371
of which loans not involving finance leases	Amortised cost	8,505	10,195
of which loans involving finance leases	Not applicable	65,279	72,099
of which securities	Fair value through profit or loss	196	–
Trade receivables < 1 year	Amortised cost	376,015	332,939
Other assets			
of which derivatives outside hedge accounting	Fair value through profit or loss	6,966,862	348,350
of which derivatives within hedge accounting	Not applicable	2,030,833	100,204
of which other financial assets	Amortised cost	36,721	54,895
of which contract assets	Not applicable	94,387	58,528
Cash and cash equivalents	Amortised cost	1,258,178	343,175
		10,845,047	**1,327,331**
Debt			
Financial debt			
of which financial debt involving leases	Not applicable	148,601	140,947
of which other financial debt	Amortised cost	1,737,675	1,575,745
Trade payables < 1 year	Amortised cost	383,286	336,752
Other liabilities			
of which derivatives outside hedge accounting	Fair value through profit or loss	6,705,533	342,119
of which derivatives within hedge accounting	Not applicable	2,151,911	155,762
of which other financial liabilities	Amortised cost	886,520	90,855
	Fair value through profit or loss	26,206	25,395
		12,039,732	**2,667,574**

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 only variances relate to other financial debt items, whose carrying amounts correspond to Euro 1,737,675 thousand (previous year: Euro 1,575,745 thousand) while their fair value amounts to Euro 1,780,290 thousand (previous year: Euro 1,602,914 thousand).

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 discount 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.

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 2021

Euro 000s	**Level 1**	**Level 2**	**Level 3**
Financial assets			
Other shareholdings	–	–	5,909
Derivatives outside hedge accounting	3,752,931	3,210,472	3,459
Derivatives within hedge accounting	914,332	1,116,490	11
Other financial assets	–	–	–
Financial liabilities			
Derivatives outside hedge accounting	3,385,777	3,319,238	518
Derivatives within hedge accounting	308,060	1,840,470	3,381
Other financial liabilities	–	–	26,206

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

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 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 3,381 thousand in Level 3 hedge accounting include interest swaps with floor (previous year: Euro 4,424 thousand). The fair value of these derivatives amounts to Euro 3,381 thousand (previous year: 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 36 thousand (previous year: Euro 59 thousand) or reduce it by Euro 35 thousand (previous year: 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 2020**	**Gains/losses in income statement**	**Gains/losses in OCI**	**Additions/ disposals**	**Balance at 30 Sep 2021**
Financial assets					
Other shareholdings	5,575	– 8	–	342	5,909
Derivatives outside hedge accounting	47	3,412	–	–	3,459
Derivatives within hedge accounting	36	–	11	– 36	11
Financial liabilities					
Derivatives outside hedge accounting	733	– 215	–	–	518
Derivatives within hedge accounting	4,424	–	– 1,123	80	3,381
Other financial liabilities	25,395	1,355	–	– 544	26,206

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

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 2021**
Other operating income and expenses	2,165	1,825
Income from shareholdings	– 8	– 8
Financial result	107	107
Other comprehensive income	1,134	1,085
	3,398	**3,009**

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**

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 assets 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 received and paid for market transactions and derivative financial instruments not meeting the set-off criteria of IAS 32.

Netting of financial assets at 30 September 2021

Euro 000s	Gross amount of financial assets reported	Gross amount of financial liabilities reported that are netted in balance sheet	Net amount of financial assets reported in balance sheet	Related amounts not netted in balance sheet		Net amount
				Financial instruments	Cash collateral received/granted	
Loans not involving finance leases	8,505	–	8,505	–	–	8,505
Trade receivables < 1 year	584,130	– 208,115	376,015	–	–	376,015
Derivative financial instruments	8,997,695	–	8,997,695	– 7,653,423	– 1,036,975	307,297
Other financial assets	131,108	–	131,108	–	–	131,108
Cash and cash equivalents	1,258,178	–	1,258,178	– 43,789	–	1,214,389
	10,979,812	**– 208,115**	**10,771,697**	**– 7,697,212**	**– 1,036,975**	**2,037,510**

Netting of financial liabilities at 30 September 2021

Euro 000s	Gross amount of financial liabilities reported	Gross amount of financial assets reported that are netted in balance sheet	Net amount of financial liabilities reported in balance sheet	Related amounts not netted in balance sheet		Net amount
				Financial instruments	Cash collateral received/granted	
Other financial debt	1,737,675	–	1,737,675	43,789	1,023	1,692,863
Trade payables < 1 year	199,737	183,549	383,286	–	–	383,286
Derivative financial instruments	8,857,444	–	8,857,444	7,653,423	215,241	988,780
Other financial liabilities	888,160	24,566	912,726	–	–	912,726
	11,683,016	**208,115**	**11,891,131**	**7,697,212**	**216,264**	**3,977,655**

Netting of financial assets at 30 September 2020

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 not involving 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

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
Other 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**

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 2021	FY 2020
Financial assets and liabilities measured at fair value through profit or loss	325,628	– 19,655
of which mandatorily measured at fair value	325,628	– 19,655
Financial assets measured at amortised cost	– 8,465	– 10,587

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 2021	FY 2020
Total interest income	8,681	7,840
Total interest expenses	46,585	46,070

The financial result also includes currency translations and the interest components for provisions and lease liabilities 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 the reclassification through profit or loss of hedging outcomes for cash flow hedges.

Risk management
Due to its business activities, MVV is exposed to various financial risks. These comprise default, liquidity, interest and exchange rate risks, as well as 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 collateral held and other credit collateral available include margin payments received for exchange transactions, particularly in the energy trading business, as well as master set-off agreements.

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.

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 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 collateral and contractual mitigation mechanisms. 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 such as EFET, which ensure that detailed checks are performed on the counterparty's creditworthiness.

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

In the carrying amounts of financial assets, default risks have already been accounted for by way of write-downs. These are only stated 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 partners 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 using 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 after 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 2021	FY 2020
Balance at 1 October	19,034	24,140
Net balance of additions/reversals	6,586	5,391
Retirements	– 4,615	– 10,373
Change in scope of consolidation	322	–
Other	228	– 124
Balance at 30 September	**21,555**	**19,034**

Of the above loss allowance, Euro 20,573 thousand is attributable to trade receivables (previous year: Euro 18,023 thousand) and Euro 582 thousand to contract assets (previous year: Euro 400 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 2021

Euro 000s	Gross carrying amount	Loss allowance	Credit default rate
not overdue	414,017	1,731	0.4%
overdue by			
< 89 days	29,354	502	1.7%
90 to 179 days	8,491	6,078	71.6%
180 to 359 days	3,022	914	30.2%
360 to 719 days	4,681	2,032	43.4%
> 719 days	10,723	10,153	94.7%
	470,288	**21,410**	

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	1.1%
Overdue			
< 89 days	19,262	524	2.7%
90 to 179 days	3,324	796	23.9%
180 to 359 days	6,008	1,903	31.7%
360 to 719 days	5,524	2,853	51.6%
> 719 days	9,614	8,780	91.3%
	416,806	**18,816**	

Impairments of Euro 145 thousand relate to assets whose loss allowances were determined on the basis of an internal or external rating (previous year: Euro 218 thousand).

Due to retirements of financial instruments, the loss allowances recognised for trade receivables changed by Euro 4,615 thousand in the 2021 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 2021

	12-month expected credit loss	**Lifetime expected credit loss**		**Total**
Euro 000s	**Level 1**	**Level 2**	**Level 3**	
Balance at 1 Oct 2020	10,331	–	593	10,924
Additions	3,911	–	4	3,915
Reversals	– 2,036	–	–	– 2,036
Retirements	– 1,643	–	– 3	– 1,646
Reclassifications	270	–	– 270	–
Other	– 101	–	60	– 41
Balance at 30 Sep 2021	**10,732**	**–**	**384**	**11,116**

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
Reversals	– 493	–	– 3,404	– 3,897
Reclassifications	– 39	–	39	–
Other	– 22	–	27	5
Balance at 30 Sep 2020	**10,331**	**–**	**593**	**10,924**

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

Default risk (general approach) at 30 September 2021

	12-month expected credit loss	Lifetime expected credit loss		Total
Euro 000s	Level 1	Level 2	Level 3	
Extremely secure contract partner	18,971	–	–	18,971
Secure contract Partner	31,328	–	886	32,214
Acceptable contract partner	4,329	–	–	4,329
Speculative contract partner	102	–	–	102
Balance at 30 Sep 2021	**54,730**	**–**	**886**	**55,616**

Default risk (general approach) at 30 Sep 2020

	12-month expected credit loss	Lifetime expected credit loss		Total
Euro 000s	Level 1	Level 2	Level 3	
Extremely secure contract par tner	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**

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. The objective of MVV's cash and liquidity management is to maintain 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. Where possible, subsidiaries are centrally financed by MVV Energie AG.

For liquidity management purposes, the company compiles rolling financial budgets which account for operating cash flows, investments, divestments and liquidity requirements in the energy trading business. The degree of detail applied in the budgets decreases from the short-term to the medium-term and long-term perspectives. Any detectible short-term financial requirement is covered within the liquidity management function by drawing on suitable instruments such as credit lines. 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 contractual conditions set out in the financing contracts had been with complied with as of the balance sheet date on 30 September 2021.

Further information about financial debt, its maturities and committed credit lines 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 receivables and cash and cash equivalents with a total amount of Euro 2,282 thousand (previous year: Euro 6,048 thousand) and interests in subsidiaries amounting to Euro 11,842 thousand (previous year: Euro 13,364 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 2021			30 September 2020		
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	276,566	732,761	835,101	130,930	785,610	747,814
Lease liabilities	–	59,036	101,831	–	57,406	97,457
Trade payables	383,286	961	2,840	336,752	867	2,842
Other financial debt	7,624	9,543	16,236	41,513	9,593	16,621
Other financial liabilities	913,903	8,392	27,841	91,059	12,303	29,807
Derivative financial liabilities	7,716,265	1,115,275	–	344,986	77,024	–
	9,297,644	**1,925,968**	**983,849**	**945,240**	**942,803**	**894,541**

Market risks: Market risks mainly relate to interest rate, currency and commodity price risks. They arise due to changes in interest rates, exchange rates and commodity prices that could impact on MVV's earnings. Market risk management is charged with limiting any potentially negative impact of fluctuations in interest rates, exchange rates and commodity prices on the company's earnings by implementing a comprehensive hedging strategy and closing risk positions.

Interest rate risks: At MVV, interest rate risks mainly relate to floating-rate liabilities to banks. They result from any potential change in the reference interest rate underlying the hedged item.

MVV's interest rate risk management pursues the objective of minimising the nominal amount and volatility of interest expenses impacting on earnings and liquidity in order to reduce any negative impact of changes in interest rates on the company's performance and ability to pay dividends.

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 2021 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 1,324 thousand/Euro 1,407 thousand (previous year: Euro 481 thousand/Euro 485 thousand).

The aforementioned measures mean that any interest rate risks arising are mainly hedged. The residual risk for MVV is of subordinate significance.

Currency risks: The MVV Group is exposed to currency risks due to its international activities outside the euro currency area. These relate to work performed or received in foreign currencies, as well as to investments and their financing in foreign currencies.

Currency risks are monitored and managed on a decentralised basis by the major subgroups. The objective of currency risk management is to minimise any negative impact of exchange rate movements on the company's performance and ability to pay dividends, as well as to safeguard its solvency in each relevant currency.

Currency risks are hedged by natural hedges in the form of currency-congruent financing and by using derivative financial instruments. 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.

The aforementioned measures mean that currency risks are hedged in such a way that MVV is not exposed to any material risks. Given the subordinate significance of currency risks at the Group, no sensitivity analysis has been performed.

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 limited by setting narrow and clearly defined limit structures. Compliance with the set limits is monitored on an ongoing basis. Regular reporting is also provided on limit capacity. Commodity price risks are management by the risk management function at our central trading company MVV Trading. Taking due account of the set limits, commodity price risks are hedged by, among other measures, using suitable derivative financial instruments and hedging strategies consistent with the applicable risk management guidelines. Price change simulations enable the potential impact on trading transactions to be determined. Continuous comparison with the trading limits set out in the risk management guidelines then makes it possible to actively manage the risk with corresponding hedging transactions on the market.

The hedging instruments used mainly involve forwards, futures and swaps. The 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 price index for the hedging instruments is always selected in such a way that it is congruent with the hedged item. This means that the hedging instruments are exposed to the same commodity price risk as the hedged item. The objective of MVV's hedging activities is always to optimise and minimise risk across the entire portfolio and the existing underlying risks. In the company's procurement activities, the objective is to hedge purchase prices at the market level at which the respective sales contracts were concluded. To secure the generation capacities available at the Group, marketing prices are hedged, as are the corresponding variable production costs.

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 and energy trading transactions recognised in accordance with IFRS 9. 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 2021, this would have increased/decreased annual net income by Euro 55,828 thousand/ Euro 2,063 thousand (previous year: Euro 9,205 thousand/Euro 10,602 thousand). Equity as of the same reporting date would have increased/decreased by Euro 43,524 thousand/Euro 7,682 thousand (previous year: Euro 20,786 thousand/ Euro 22,111 thousand).

The aforementioned reduction and management measures mean that commodity price risks are mainly hedged and the residual risks are of subordinate significance for MVV. The remaining residual risks are nevertheless assessed by MVV Trading, our central energy trading company, and are recorded, aggregated and monitored by the central group controlling function.

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. Financial 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 2021			30 September 2020		
Euro 000s	**< 1 year**	**1 - 5 years**	**> 5 years**	< 1 year	1 - 5 years	> 5 years
Interest derivatives	154,194	202,762	169,371	17,443	405,838	181,445
Commodity derivatives	11,529,208	3,664,495	4,311	5,586,936	1,992,294	–
Currency derivatives	59,643	1,039	–	76,894	–	–
	11,743,045	**3,868,296**	**173,682**	**5,681,273**	**2,398,132**	**181,445**

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

Commodity derivatives

	30 September 2021		30 September 2020	
Euro 000s	**Nominal volumes**	**Fair values**	Nominal volumes	Fair values
Commodity derivatives				
Electricity	10,808,649	– 266,663	5,345,577	– 4,328
Coal	131,427	103,649	20,015	– 12,452
Gas	2,029,159	164,627	1,481,488	– 17,355
CO_2 rights	2,226,882	155,967	730,607	24,693
Other	1,897	– 479	1,543	– 650
	15,198,014	**157,101**	**7,579,230**	**– 10,092**
Commodity derivatives				
Futures	15,068,548	53,452	7,559,216	2,360
Swaps	129,466	103,649	20,014	– 12,452
	15,198,014	**157,101**	**7,579,230**	**– 10,092**

As derivative financial instruments 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 has been based, where these are available, on external ratings at Standard & Poor's and/or Moody's. Where no external rating is available, an internal rating has been derived using customary market methods.

Counterparty risk at 30 September 2021

Euro 000s	**Total**		**of which < 1 year**		**of which 1 to 5 years**	
Counterparty rating [1]	**Nominal value**	**Counterparty risk**	**Nominal value**	**Counterparty risk**	**Nominal value**	**Counterparty risk**
AAA and Aaa to AA- and Aa3	2,260,723	3,415,395	1,642,067	2,933,964	618,656	481,431
A+ and A1 to A- and A3	136,867	27,452	135,100	24,296	1,767	3,156
BBB+ and Baa1 to BBB- and Baa3	121,332	202,454	95,957	175,857	25,375	26,597
BB+ and Ba1 to BB- and Ba3	143,357	197,013	112,493	175,161	30,864	21,852
Internal rating	4,469,022	4,710,482	3,402,100	4,013,372	1,066,922	697,110
	7,131,301	**8,552,796**	**5,387,717**	**7,322,650**	**1,743,584**	**1,230,146**

1 Most recent available rating

Counterparty risk at 30 September 2020

Euro 000s	Total		of which < 1 year		of which 1 to 5 years	
Counterparty rating [1]	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
Internal rating	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**

1 Most recent available rating

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 12 years as of 30 September 2021 (previous year: 13 years). For commodity hedges, the terms of planned hedges amount to up to five years (previous year: up to five 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 average interest rates of 0.91 % to 3.87 % to hedge against interest risks in its financing activities. The average hedged prices for commodity price risks range from Euro 44.35 to Euro 48.30 in the electricity business, Euro 11.88 to Euro 18.90 in the gas business and Euro 30.74 to Euro 36.65 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 2021

	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	2,030,811	2,135,806	2,733,483	– 107,368	– 107,368
Interest rate risk	22	16,104	526,327	12,009	12,429
	2,030,833	**2,151,910**	**3,259,810**	**– 95,359**	**– 94,939**

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	–	38,112	604,726	– 5,842	– 6,977
	100,204	**154,131**	**1,902,691**	**– 54,649**	**– 55,784**

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 2021

Euro 000s	Hedging gains (+)/ losses (-) recognised in OCI	Ineffectiveness recognised through profit or loss	Reclassification through profit or loss
Commodity price risk	– 107,368	–	– 18,189
Interest rate risk	12,009	–	– 10,299
	– 95,359	**–**	**– 28,488**

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

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

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 included. For commodity hedges, amounts of Euro 382,198 thousand and of Euro 364,009 thousand were reclassified through profit or loss and recognised under sales and cost of materials respectively in the 2021 financial year (previous year: Euro 112,285 thousand and Euro 364,009 thousand respectively). For interest rate hedges, an amount of Euro 10,299 thousand was reclassified through profit or loss and recognised under financing expenses (previous year: Euro 8,010 thousand). 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 2021**	FY 2020
Balance at 1 October	– 54,440	– 35,875
Unrealised change in reserve for hedging costs		
Interest rate hedges	310	310
Unrealised change in cash flow hedge reserve		
Commodity hedges	– 107,368	– 48,807
Interest rate hedges	12,009	– 6,977
Reclassification through profit or loss		
Commodity hedges	18,189	28,899
Interest rate hedges	10,299	8,010
Balance at 30 September	**– 121,001**	**– 54,440**

Fair value hedges serve to hedge risks relating to changes in fair value. At MVV, the fair value hedge includes foreign-currency payments with hedged items of Euro 179,017 thousand. The hedging instrument deployed involves a bank liability in British pounds. The hedge of a foreign-currency payment in British pounds in place in the previous year expired in the 2021 financial year.

As of 30 September 2021, existing hedged items were included in fair value hedges with terms of up to 11 years (previous year: 12 years).

Other assets include a cumulative amount of Euro 0 thousand for hedging-related adjustments (previous year: Euro 1,020 thousand).

The following table presents the carrying amounts and nominal values, 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 2021					
	Carrying amount of hedging instrument		Nominal volume	Changes in fair value of hedg-ing instrument	Changes in fair value of hedged item
Euro 000s	Other financial liabilities	Other financial debt			
Currency risk	–	179,017	179,017	10,827	10,819
	–	**179,017**	**179,017**	**10,827**	**10,819**

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**

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 2021	
Euro 000s	Ineffective-ness recog-nised through profit or loss
Currency risk	8
	8

Impact of fair value hedges on total comprehensive income at 30 Sep 2020	
Euro 000s	Ineffective-ness recog-nised through profit or loss
Currency risk	1
	1

In the 2021 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 2020 to 30 September 2021

Euro 000s	Adjusted external sales excluding energy taxes	Intercompany sales excluding energy taxes	Scheduled depreciation and amortisation	Impairment losses
Customer Solutions	3,101,020	287,665	21,057	–
New Energies	622,455	131,408	82,190	–
Supply Reliability	310,325	727,522	73,087	–
Strategic Investments	96,585	1,042	12,190	–
Other Activities	1,090	44,875	15,376	–
Consolidation	–	– 1,192,512	–	–
	4,131,475	**–**	**203,900**	**–**

Euro 000s	Material non-cash income and expenses	Adjusted EBIT	Income from companies recognised at equity	Investments
Customer Solutions	2,935	46,524	13,683	34,117
New Energies	1,420	120,329	7,283	124,038
Supply Reliability	4,818	77,995	5,309	124,641
Strategic Investments	1,463	22,322	9,568	8,436
Other Activities	1,048	10,984	324	14,586
Consolidation	–	–	–	–
	11,684	**278,154**	**36,167**	**305,818**

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 and amortisation	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**

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, heat, gas and water, the solutions business for all customer segments and the service and trading business at MVV Trading GmbH, Mannheim, The smart cities business field is also included in this reporting segment.

  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, photovoltaics systems, 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 heat from sustainable/partly sustainable commodities such as wind, waste timber, residual 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, heat, 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, heat, 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 2020 to 30 Sep 2021**	1 Oct 2019 to 30 Sep 2020	+/– change
EBIT as per income statement	529,668	209,494	+ 320,174
Financial derivative measurement items	– 255,415	19,768	– 275,183
Structural adjustment for part-time early retirement	1	11	– 10
Interest income from finance leases	3,900	3,961	– 61
Adjusted EBIT	**278,154**	**233,234**	**+ 44,920**

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

Euro 000s	**1 Oct 2020 to 30 Sep 2021**	1 Oct 2019 to 30 Sep 2020	+/– change
Sales after electricity and natural gas taxes	4,233,788	3,432,094	+ 801,694
Realisation effects for financial derivatives	– 102,313	83,226	– 185,539
Adjusted sales after electricity and natural gas taxes	**4,131,475**	**3,515,320**	**+ 616,155**

Of adjusted segment sales with external customers, 91.8 % were generated in Germany (previous year: 92.3 %). 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 year-on-year improvement in annual earnings before taxes (EBT) led the cash flow before working capital and taxes to improve by Euro 14 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 820 million. This exceptional development was due above all to the high inflow of security deposits for counterparty default risks (margins), which amounted to Euro 843 million (previous year: outflow of Euro 8 million). From an operating perspective, the cash flow was positively influenced compared with the previous year above all by the elimination of the significantly higher volume of provisions recognised. The greatest impact was attributable to the provision of CO_2 rights for the power plant Grosskraftwerk Mannheim, as prices rose sharply in the 2021 financial year, and to provisions for risks resulting from changes in market conditions. These factors were mainly countered by a greater increase in receivables due to higher price levels and the expansion in our electricity and gas trading business. The cash flow was also reduced by changes in VAT liabilities; these mainly resulted from pandemic-related deferments in VAT payments due in the 2020 calendar year. By contrast, no deferments were granted for the VAT due for payment in the 2021 financial year.

The development in the cash flow from investing activities was mainly shaped by a lower volume of payments for other financial assets. As well as a lower volume of payments for finance lease projects, the volume of capital increases at joint ventures recognised using the equity method was also lower in the 2021 financial year. An opposing and thus negative effect resulted above all from divestments, which were lower in the period under report than in the previous year. Payments for the acquisition of fully consolidated companies and other business units remained at around the previous year's level. In the 2021 financial year, these related to the acquisition of the remaining shares in Fernwärme Rhein-Neckar GmbH and in Zschau GmbH, as well as to the acquisition of assets and takeover of staff at IRK DCI GmbH in the context of an asset deal. Overall, the cash flow from investing activities was at the previous year's level.

The cash flow from financing activities increased year-on-year by Euro 94 million, a development mainly due to higher net new borrowing.

MVV posted cash and cash equivalents of Euro 1,258 million as of 30 September 2021 (30 September 2020: Euro 343 million).

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

Liabilities in connection with financing activities

Euro 000s	30 Sep 2020	Cash-effective changes	Non-cash-effective changes				30 Sep 2021
			Change in scope of consolidation	Changes in exchange rates	Additions to leases	Other adjustments	
Liabilities to banks	1,515,166	169,926	4,761	21,183	–	–	1,711,036
Lease liabilities	140,946	– 15,775	16	508	24,171	– 1,265	148,601
Other financial debt	60,579	– 33,940	–	–	–	–	26,639
	1,716,691	**120,211**	**4,777**	**21,691**	**24,171**	**– 1,265**	**1,886,276**

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. This company owns 99.99 % of the shares in MV Mannheimer 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 19,958 thousand (previous year: Euro 19,473 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 2020 to 30 Sep 2021**	1 Oct 2019 to 30 Sep 2020	**1 Oct 2020 to 30 Sep 2021**	1 Oct 2019 to 30 Sep 2020	**30 Sep 2021**	30 Sep 2020	**30 Sep 2021**	30 Sep 2020
City of Mannheim	9,302	12,032	25,674	24,697	885	32	4,147	6,269
Abfallwirtschaft Mannheim	9,912	7,475	1,515	1,724	1,617	1,330	422	348
GBG Mannheimer Wohnungsbaugesellschaft mbH	13,839	14,091	784	66	98	76	–	15
m:con - mannheim:congress GmbH	3,724	3,449	197	431	5,087	5,373	277	24
MKB Mannheimer Kommunalbeteiligungen GmbH	85	63	–	–	3	–	–	–
MV Mannheimer Verkehr GmbH	33	34	–	1	–	–	–	1
Rhein-Neckar-Verkehr GmbH	7,543	7,480	–	236	40	1,254	491	1,182
Stadtentwässerung Mannheim	2,227	1,521	304	438	240	278	–	75
Associates	5,313	32,176	1,277	1,349	1,568	2,663	1,842	1,827
Joint ventures	175,785	161,091	214,207	192,215	45,285	70,948	60,261	91,741
Other related parties	22,019	21,977	5,892	4,023	7,366	5,813	2,776	1,146
	249,782	**261,389**	**249,850**	**225,180**	**62,189**	**87,767**	**70,216**	**102,628**

The income and expenses with other related parties include income of Euro 18 thousand (previous year: Euro 28 thousand) and expenses of Euro 362 thousand (previous year: Euro 477 thousand) for goods and services provided to management staff performing key functions and members of the Supervisory Board.

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 2021. 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 2021. Furthermore, MVV Energie has established a process for recording and assessing related party transactions pursuant to § 111a et seq. AktG.

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 3,109 thousand (previous year: Euro 2,812 thousand). Pension provisions of Euro 12,278 thousand were recognised for them (previous year: Euro 10,714 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 3,353 thousand in the year under report (previous year: Euro 2,955 thousand). Of this total, Euro 3,247 thousand involved short-term benefits (previous year: Euro 2,845 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 106 thousand in the 2021 financial year (previous year: Euro 110 thousand).

Active Supervisory Board members were remunerated as follows:

Supervisory Board remuneration

Euro 000s	**FY 2021**	FY 2020
Fixed remuneration (including meeting allowances)	541	525

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

Former members of the Executive Board received benefits of Euro 725 thousand in the year under report (previous year: Euro 630 thousand). Provisions totalling Euro 18,310 thousand have been stated for pension obligations towards former Executive Board members (previous year: Euro 20,288 thousand). A total of Euro 122 thousand was allocated to this item in the year under report (previous year: Euro 64 thousand).

39. MVV's shareholdings

List of MVV's shareholdings at 30 September 2021	Town/city	Country	Share of capital % [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	
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	100.00	
econ solutions GmbH	Munich (dom.: Mannheim)	Germany	100.00	4
En/Da/Net GmbH	Erfurt	Germany	100.00	4
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
Fernwärme Rhein-Neckar GmbH	Mannheim	Germany	100.00	
FRASSUR GmbH Umweltschutz-Dienstleistungen	Mörfelden-Walldorf	Germany	100.00	
Gasversorgung Offenbach GmbH	Offenbach am Main	Germany	74.90	
Gesellschaft für Hochspannungsbau Offenbach mbH	Offenbach am Main	Germany	100.00	
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 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 202 GmbH & Co. KG	Wörrstadt	Germany	100.00	
juwi Wind Germany 203 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 (Anhalt)	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
MVV Alpha fünfzehn GmbH	Mannheim	Germany	100.00	4
MVV Biogas Dresden GmbH	Mannheim (dom.: Dresden)	Germany	100.00	
MVV Biomethan GmbH	Mannheim (dom.: Wanzleben-Börde)	Germany	100.00	

List of MVV's shareholdings at 30 September 2021

	Town/city	Country	Share of capital %[1]	Footnotes
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 (dom.: Mannheim)	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 (Anhalt)	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 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 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	
Windwärts Energie GmbH	Hanover	Germany	100.00	
Windwärts Photovoltaik GmbH	Hanover	Germany	100.00	
Zschau GmbH	Mannheim	Germany	100.00	

List of MVV's shareholdings at 30 September 2021	Town/city	Country	Share of capital % [1]	Footnotes
Fully consolidated subsidiaries				
Associates (international)				
Cactus Garden Solar LLC	Delaware	USA	100.00	
Corsoleil EURL i.L.	Saint Florent	France	100.00	
CTZ s.r.o.	Uherské Hradiště	Czech Republic	50.96	
e.services s.r.o.	Děčín	Czech Republic	100.00	
Electaparc S.A.	Montevideo	Uruguay	100.00	
ENERGIE Holding a.s.	Prague	Czech Republic	100.00	
G-LINDE s.r.o.	Prague	Czech Republic	100.00	
G-RONN s.r.o.	Prague	Czech Republic	100.00	
IROMEZ s.r.o.	Pelhřimov	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 Single Member S.A.(previously: 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	Bengaluru	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 Solar ZA O&M 2 (Pty) Ltd.	Cape Town	South Africa	100.00	
juwi Viet Nam Company Limited	Hanoi	Vietnam	100.00	
juwi Wind LLC	Delaware	USA	100.00	
mobiheat Schweiz GmbH	Dietlikon	Switzerland	100.00	
mobiheat Österreich GmbH	Sankt Lorenz	Austria	100.00	
MVV Energie CZ a.s.	Prague	Czech Republic	100.00	
MVV Environment Baldovie Energy Limited	Dundee	UK	100.00	
MVV Environment Baldovie Limited	Dundee	UK	100.00	
MVV Environment Baldovie Waste Limited	Dundee	UK	100.00	
MVV Environment Devonport Limited	Plymouth	UK	100.00	
MVV Environment Limited	Plymouth	UK	100.00	
MVV Environment Ridham Limited	Sittingbourne / Iwade	UK	100.00	

List of MVV's shareholdings at 30 September 2021	Town/city	Country	Share of capital % [1]	Footnotes
MVV Environment Services Limited	Plymouth	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	
Teplárna Liberec, a.s.	Liberec	Czech Republic	76.04	
TERMIZO a.s.	Liberec	Czech Republic	100.00	
TERMO Děčín a.s.	Děčín	Czech Republic	96.91	
Zásobování teplem Vsetín a.s.	Vsetín	Czech Republic	100.00	
Ceskolipská teplárenská a.s.	Česká Lípa	Czech Republic	75.00	
Českolipské teplo a.s.	Prague	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	
Grüne Wärme GmbH (previously: MVV Alpha vier GmbH)	Mannheim	Germany	100.00	4, 5
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 190 GmbH & Co. KG	Wörrstadt	Germany	100.00	
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 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 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	
juwi Wind Germany 217 GmbH & Co. KG	Wörrstadt	Germany	100.00	
juwi Wind Germany 218 GmbH & Co. KG	Wörrstadt	Germany	100.00	
juwi Wind Germany 219 GmbH & Co. KG	Wörrstadt	Germany	100.00	
juwi Wind Germany 220 GmbH & Co. KG	Wörrstadt	Germany	100.00	
juwi Wind Germany 221 GmbH & Co. KG	Wörrstadt	Germany	100.00	
juwi Wind Germany 222 GmbH & Co. KG	Wörrstadt	Germany	100.00	
juwi Wind Germany 223 GmbH & Co. KG	Wörrstadt	Germany	100.00	5
juwi Wind Germany 224 GmbH & Co. KG	Wörrstadt	Germany	100.00	5
juwi Wind Germany 225 GmbH & Co. KG	Wörrstadt	Germany	100.00	5
juwi Wind Germany 226 GmbH & Co. KG	Wörrstadt	Germany	100.00	5

List of MVV's shareholdings at 30 September 2021

	Town/city	Country	Share of capital % [1]	Footnotes
juwi Wind Germany 227 GmbH & Co. KG	Wörrstadt	Germany	100.00	5
juwi Wind Germany 228 GmbH & Co. KG	Wörrstadt	Germany	100.00	5
juwi Wind Germany 229 GmbH & Co. KG	Wörrstadt	Germany	100.00	5
juwi Wind Germany 230 GmbH & Co. KG	Wörrstadt	Germany	100.00	5
juwi Wind Germany 231 GmbH & Co. KG	Wörrstadt	Germany	100.00	5
luminatis Deutschland GmbH	Landau in der Pfalz	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	
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	
Windwärts Betriebs- und Beteiligungsgesellschaft mbH	Hanover	Germany	100.00	
Windwärts Projektmanagement GmbH	Hanover	Germany	100.00	
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	
Baca Solar LLC	Delaware	USA	100.00	5
Belviworx (Pty) Ltd.	Cape Town	South Africa	100.00	5
Bench 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	

List of MVV's shareholdings at 30 September 2021

	Town/city	Country	Share of capital % [1]	Footnotes
Cache Valley Solar LLC	Delaware	USA	100.00	
Carlino Srl	Verona	Italy	100.00	5
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	
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	
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	
Durbavert (Pty) Ltd.	Cape Town	South Africa	100.00	5
Fairforest Solar 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	
JSI Procurement Group LLC	Delaware	USA	100.00	
JSI Rockfish Realty LLC	Delaware	USA	100.00	
juwi Devco Pty. Ltd.	Brisbane	Australia	100.00	
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	
juwi Development 05 Srl	Verona	Italy	100.00	
juwi Development 06 Srl	Verona	Italy	100.00	
juwi Development 07 Srl	Verona	Italy	100.00	
juwi Development 08 Srl	Verona	Italy	100.00	
juwi Development 09 Srl	Verona	Italy	100.00	
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	
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	
Kap Vley Wind Farm (Pty) Ltd.	Cape Town	South Africa	100.00	
Kenhardt PV1 (Pty) Ltd.	Cape Town	South Africa	100.00	
Kenhardt PV2 (Pty) Ltd.	Cape Town	South Africa	100.00	5
Kenhardt PV3 (Pty) Ltd.	Cape Town	South Africa	100.00	5
Kiowa Community Solar LLC	Delaware	USA	100.00	
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	

List of MVV's shareholdings at 30 September 2021

	Town/city	Country	Share of capital % [1]	Footnotes
La Garita Solar LLC	Delaware	USA	100.00	
Lavaca Solar LLC	Delaware	USA	100.00	
Los Brazos Solar LLC	Delaware	USA	100.00	
luminatis S.à.r.l.	Luxembourg	Luxembourg	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	
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	
Piacenza 4 Srl	Verona	Italy	100.00	5
Piacenza 9 Srl	Verona	Italy	100.00	5
Pike Solar LLC	Delaware	USA	100.00	
Pronghorn Solar LLC	Delaware	USA	100.00	
Rattlesnake Flat Solar LLC	Delaware	USA	100.00	
Red Dirt Solar LLC	Delaware	USA	100.00	
Royal Slope Solar LLC	Delaware	USA	100.00	
Saddle Mountain Solar LLC	Delaware	USA	100.00	5
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	
Spanish Peaks II Solar LLC	Delaware	USA	100.00	
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	
Zingesele Wind Farm (Pty) Ltd.	Cape Town	South Africa	100.00	

List of MVV's shareholdings at 30 September 2021

	Town/city	Country	Share of capital % [1]	Footnotes
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	
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	
Qivalo GmbH	Mannheim	Germany	42.50	
ReNabi GmbH	Mannheim	Germany	51.00	
Rockenhausen Windenergie-Projektentwicklungs GmbH i.L.	Rockenhausen	Germany	49.00	
sMART City Mannheim GmbH	Mannheim	Germany	50.00	5
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	
Windpark Biebelnheim-Gabsheim GmbH & Co. KG	Wörrstadt	Germany	100.00	
Windpark Worms Repowering GmbH & Co. KG	Wörrstadt	Germany	100.00	
wärme.netz.werk Rhein-Neckar GmbH	Heidelberg	Germany	33.34	
At equity				
Joint ventures (international)				
juwi Shizen Energy Inc.	Tokyo	Japan	50.00	
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	

List of MVV's shareholdings at 30 September 2021

	Town/city	Country	Share of capital % [1]	Footnotes
Other minority shareholdings				
(Germany)				
8KU GmbH	Berlin	Germany	12.50	
GeoHardt GmbH	Schwetzingen	Germany	50.00	5
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 2021 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 at the Group

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 2021 financial year:

Auditor's fee

Euro 000s	FY 2021	FY 2020
Audit services	2,166	1,962
Other audit services	486	230
Tax advisory services	54	41
Other services	333	58
	3,039	**2,291**

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 2021 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 Compliance (§ 161 AktG)

The Executive and Supervisory Boards of MVV Energie AG refer to the management report in respect of the Declaration of Compliance 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 38 Related party disclosures), further concession agreements have also been concluded between MVV companies and local and regional authorities. The remaining terms range from 9 to 15 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, 9 November 2021

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, 9 November 2021

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

Angelo Bonelli [1]
Trade Union Secretary
ver.di Baden-Württemberg State District
(since 12 March 2021)

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

Sabine U. Dietrich
Supervisory Board Member, Consultant

Ralf Eisenhauer
Mayor of City of Mannheim
for Construction, Planning, Transport, Sport
(until 12 March 2021)

Peter Erni [1]
Trade Union Secretary at ver.di Rhine-Neckar
(until 12 March 2021)

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

Gabriele Gröschl-Bahr [1]
Head of Social Insurance Division at ver.di, Berlin
(until 12 March 2021)

Martin F. Herrmann
Business Angel, Mentor
(since 12 March 2021)

Barbara Hoffmann
Auditor, Tax Advisor

Gregor Kurth
Partner, Infrastructure Investments, Europe,
First Sentier Investors (FSI), London, UK

Thoralf Lingnau [1]
Member of Works Council

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

Tatjana Ratzel
Lawyer, Head of Department
INTER Krankenversicherung AG Mannheim

Thorsten Riehle
Managing Director of Capitol-Betriebs GmbH Mannheim
(since 12 March 2021)

Susanne Schöttke [1]
State District Director, ver.di Nord
(since 12 March 2021)

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

Dr. Stefan Seipl
Businessman, Independent Management Consultant

Christian Specht
First Mayor of City of Mannheim

Prof. Heinz-Werner Ufer
Graduate in Economics
(until 12 March 2021)

Susanne Wenz [1]
Deputy State District Director, 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	• Dr. Lorenz Näger (Chairman since 12 March 2021/previously committee member) • Prof. Heinz-Werner Ufer (Chairman until 12 March 2021) • Heike Kamradt (Deputy Chair) • Angelo Bonelli (since 12 March 2021) • Peter Erni (until 12 March 2021) • Detlef Falk • Martin F. Herrmann (since 12 March 2021) • Gregor Kurth
Personnel Committee	• Dr. Peter Kurz (Chairman) • Heike Kamradt (Deputy Chair) • Angelo Bonelli (since 12 March 2021) • Ralf Eisenhauer (until 12 March 2021) • Peter Erni (until 12 March 2021) • Barbara Hoffmann (since 12 March 2021) • Gregor Kurth • Jürgen Wiesner
Nomination Committee	• Dr. Peter Kurz (Chairman) • Ralf Eisenhauer (until 12 March 2021) • Barbara Hoffmann • Gregor Kurth • Dr. Lorenz Näger (since 12 March 2021) • Tatjana Ratzel • Thorsten Riehle (since 12 March 2021) • Prof. Heinz-Werner Ufer (until 12 March 2021)
Mediation Committee	• Dr. Peter Kurz (Chairman) • Heike Kamradt • Gregor Kurth • Jürgen Wiesner
New Authorised Capital Creation Committee	• Dr. Peter Kurz (Chairman) • Ralf Eisenhauer (until 12 March 2021) • Peter Erni (until 12 March 2021) • Heike Kamradt • Gregor Kurth • Dr. Lorenz Näger (since 12 March 2021) • Tatjana Ratzel • Thorsten Riehle (since 12 March 2021) • Christian Specht • Prof. Heinz-Werner Ufer (until 12 March 2021) • Jürgen Wiesner (since 12 March 2021)

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	• ABB AG, Mannheim (since 28 June 2021) • 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 • Stadtwerke Kiel AG, Kiel (Chairman)	
Verena Amann	• Energieversorgung Offenbach AG, Offenbach • Juwi AG, Wörrstadt • MVV Enamic GmbH, Mannheim • MVV Netze GmbH, Mannheim • Stadtwerke Ingolstadt Beteiligungen GmbH, Ingolstadt • Stadtwerke Kiel AG, Kiel	
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) • Soluvia GmbH, Mannheim (until 30 November 2020) • Stadtmarketing Mannheim GmbH, Mannheim
Dr. Hansjörg Roll	• Energieversorgung Offenbach AG, Offenbach • Grosskraftwerk Mannheim AG, Mannheim (Chairman) • Juwi AG, Wörrstadt (Deputy Chairman) • 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) (until 30 November 2020)

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)	
Angelo Bonelli Trade Union Secretary at ver.di Rhine-Neckar (since 12 March 2021)	• TransnetBW GmbH, Stuttgart • NetComBW GmbH, Ellwangen (until 4 May 2021)	
Timo Carstensen Deputy Chairman of Works Council of Stadtwerke Kiel AG	• Stadtwerke Kiel AG, Kiel	
Sabine U. Dietrich Supervisory Board Member, Consultant	• Commerzbank AG, Frankfurt • H&R GmbH & Co. KGaA, Salzbergen	

Name Occupation	Positions held on other statutory supervisory boards of German companies	Membership of comparable German and foreign company supervisory boards
Ralf Eisenhauer Mayor of City of Mannheim for Construction, Planning, Transport, Sport (until 12 March 2021)	• Rhein-Neckar-Verkehr GmbH, Mannheim (until 24 November 2020)	• Sparkasse Rhein Neckar Nord, Mannheim (until 24 November 2020) • BBS Bau und Betriebsservice GmbH, Mannheim (since 1 January 2021) • GBG Mannheimer Wohnungsbaugesellschaft mbH, Mannheim (since 3 March 2021) • MKB Mannheimer Kommunal-Beteiligungen GmbH, Mannheim (since 1 January 2021) • MPB Mannheimer Parkhausbetriebe GmbH, Mannheim (Chairman) (since 1 January 2021) • MWS Projektentwicklungsgesellschaft mbH, Mannheim • (since 3 March 2021)
Peter Erni Trade Union Secretary at ver.di Rhine-Neckar (until 12 March 2021)		
Detlef Falk Chairman of Works Council of Stadtwerke Kiel AG	• Stadtwerke Kiel AG, Kiel	• Soluvia GmbH, Mannheim (until 30 November 2020) • Soluvia Energy Services GmbH, Offenbach • Soluvia IT-Services GmbH, Kiel
Gabriele Gröschl-Bahr Head of Social Insurance Division at ver.di, Berlin (until 12 March 2021)		• Board of Directors of Federal Employment Agency, Nuremberg • Supervisory Board of Federal and State Government Employees Retirement Fund (BVL), Karlsruhe (Chair)
Martin F. Herrmann Business Angel, Mentor (since 12 March 2021)		
Barbara Hoffmann Auditor, Tax Advisor		• Berliner Stadtreinigungsbetriebe, Anstalt des öffentlichen Rechts, Berlin
Gregor Kurth Partner, Infrastructure Investments, Europe, First Sentier Investors (FSI), London, UK		• Utilitas Group, Estonia • Owlcastle Holdings Limited, UK
Thoralf Lingnau Member of Works Council of MVV Energie AG	• 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 Former Deputy Chairman of Executive Board and CFO of HeidelbergCement AG	• PHÖNIX Pharma SE, Mannheim	• Cimenteries CBR S.A., Brussels, Belgium (until 31 August 2021) • ENCI Holding N.V., 's-Hertogenbosch, Netherlands (until 31 August 2021) • Hanson Pioneer España, S.L.U., Madrid, Spain (until 31 August 2021) • HeidelbergCement Canada Holding Limited, Maidenhead, UK (until 31 August 2021) • HeidelbergCement Holding S.à.r.l., Luxembourg (until 31 August 2021) • HeidelbergCement UK Holding Limited, Maidenhead, UK (until 31 August 2021) • HeidelbergCement UK Holding II Limited, Maidenhead, UK (until 31 August 2021) • Italcementi Fabbriche Riunite Cemento S.p.A., Bergamo, Italy (until 31 August 2021) • Lehigh B.V., 's-Hertogenbosch, Netherlands (Chairman) (until 31 August 2021) • Lehigh Hanson, Inc., Irving, TX, USA (until 31 August 2021) • Lehigh Hanson Materials Limited, Calgary, Canada (until 31 August 2021) • PHOENIX Pharmahandel GmbH & Co. KG, Mannheim, Germany • PT Indocement Tunggal Prakarsa Tbk., Jakarta, Indonesia
Tatjana Ratzel Lawyer, Head of Sickness Allowance Department at INTER Krankenversicherung AG Mannheim		
Thorsten Riehle Managing Director of Capitol-Betriebs GmbH Mannheim (since 12 March 2021)		• mg: mannheimer gründungszentren gmbH, Mannheim • Stadtmarketing Mannheim GmbH, Mannheim
Susanne Schöttke State District Director, ver.di Nord (since 12 March 2021)	• Telekom Deutschland GmbH, Bonn	

Name Occupation	Positions held on other statutory supervisory boards of German companies	Membership of comparable German and foreign company supervisory boards
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
Dr. Stefan Seipl Businessman, Independent Management Consultant	• Ferngas Netzgesellschaft mbH, Schwaig (Chairman) • Pfisterer Holding AG, Winterbach (since 3 August 2021)	• Nordion Energi 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 (until 12 March 2021)	• Amprion GmbH, Dortmund (Chairman) (until 30 November 2020)	
Susanne Wenz Deputy State District Director, ver.di Baden-Württemberg	• Bausparkasse Schwäbisch Hall AG, Schwäbisch Hall (until 31 March 2021)	• 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 (until 30 November 2020) • 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 2021, the consolidated statement of comprehensive income, consolidated income statement, consolidated statement of changes in equity and consolidated cash flow statement for the financial year from 1 October 2020 to 30 September 2021, and notes to the 2021 consolidated financial statements of MVV, 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 2020 to 30 September 2021. 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 2021, and of its financial performance for the financial year from 1 October 2020 to 30 September 2021, 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 2020 to 30 September 2021. 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 to € 209 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 caried out at the level of the groups of cash-generating units to which the relevant goodwill is allocated. The carrying amount of the relevant cash-generating units, including goodwill, is compared with the corresponding recoverable amount in the context of the impairment test. The recoverable amount is generally determined using the value in use. The present value of the future cash flows from the respective group of cash-generating units normally serves as the basis of valuation. Present values are calculated using discounted cash flow models. For this purpose, the adopted medium-term business plan of the Group forms the starting point which is extrapolated based on assumptions about long-term rates of growth. Expectations relating to future market developments and assumptions about the development of macroeconomic factors are also taken into account. The discount rate used is the weighted average cost of capital for the respective group of cash-generating units. Based on the results of the regular impairment tests, no impairment losses were recognised 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, 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. 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 projects, 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 MVV's 2021 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 a large extent on the spot and futures market for electricity, gas and emission rights on stock exchanges and on the over-the-counter market for these purposes. These contracts are classified as derivative financial instruments in accordance with 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 cash flow hedges. The underlying transactions are the purchase and 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 financial 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 note "35 Financial instruments" in the notes to MVV's 2021 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 corporate governance declaration pursuant to § 289f HGB and § 315d HGB included in the "Corporate Governance Declaration" section of the group management report
- 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 further comprises 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 controls 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 OTHER REGULATORY REQUIREMENTS

Report on the assurance review of the electronic reproductions of the consolidated financial statements and of the group management report prepared for disclosure purposes in accordance with § 317 Abs. 3a HGB

Audit opinion

In accordance with § 317 Abs. 3a HGB, we have performed a reasonable assurance review to determine whether the reproductions of the consolidated financial statements and of the group management report contained in the file "MVV_AG_KA_KLB.zip" (hereinafter also referred to as "ESEF documents") and prepared for disclosure purposes comply in all material respects with the electronic reporting format requirements of § 328 Abs. 1 HGB ("ESEF format"). In accordance with German legal requirements, this audit extends only to the conversion of the information contained in the consolidated financial statements and the group management report into the ESEF format and therefore not to the information contained in these reproductions nor to any other information contained in the above-mentioned file.

In our opinion, the reproductions of the consolidated financial statements and of the group management report contained in the above-mentioned file and prepared for disclosure purposes comply, in all material respects, with the electronic reporting format requirements of § 328 Abs. 1 HGB. Other than this opinion and our opinions on the accompanying consolidated financial statements and on the accompanying group management report for the financial year from 1 October 2020 to 30 September 2021 included in the "Report on the Audit of the Consolidated Financial Statements and of the Group Management Report" above, we do not express any opinion on the information included in these reproductions or on any of the other information included in the above-mentioned file.

Basis for the reasonable assurance conclusion
We conducted our assurance review of the reproduction of the consolidated financial statements and of the group management report contained in the above-mentioned electronic file in accordance with § 317 Abs. 3a HGB, taking due account of the IDW Assurance Standard: Audit for Purpose of Disclosure of Electronic Reproductions pursuant to § 317 Abs. 3a HGB (IDW AsS 410) and of the International Standard on Assurance Engagements 3000 (Revised). Accordingly, our responsibilities are further described under “Group auditor’s responsibilities for the assurance review of the ESEF documents”. Our audit firm has applied the quality assurance system requirements of the IDW Standard for Quality Management in the Audit Firm (IDW QS 1).

Responsibilities of executive directors and supervisory board for the ESEF documents
The executive directors of the company are responsible for the preparation of the ESEF documents including the electronic reproduction of the consolidated financial statements and the group management report in accordance with § 328 Abs. 1 Satz 4 Nr. [Number] 1 HGB and the tagging of the consolidated financial statements in accordance with § 328 Abs. 1 Satz 4 Nr. 2 HGB.

In addition, the executive directors of the company are responsible for such internal controls as they have considered necessary to enable the preparation of ESEF documents free from material non-compliance with the requirements of § 328 Abs. 1 HGB for the electronic reporting format, whether due to fraud or error.

The executive directors of the company are also responsible for the submission of the ESEF documents together with the auditor’s report and the attached audited consolidated financial statements and audited group management report as well as other documents to be published to the operator of the German Federal Gazette (Bundesanzeiger).

The supervisory board is responsible for overseeing the preparation of the ESEF documents as part of the financial reporting process.

Group auditor’s responsibilities for the assurance review of the ESEF documents
Our objective is to obtain reasonable assurance about whether the ESEF documents are free from material non-compliance with the requirements of § 328 Abs. 1 HGB, whether due to fraud or error. We exercise professional judgment and maintain professional scepticism throughout the assurance review. We also:

- Identify and assess the risks of material non-compliance with the requirements of § 328 Abs. 1 HGB, whether due to fraud or error, design and perform assurance procedures responsive to those risks, and obtain assurance evidence that is sufficient and appropriate to provide a basis for our assurance conclusion.
- Obtain an understanding of the internal control relevant to the assurance engagement on the ESEF documents in order to design assurance procedures that are appropriate in the circumstances, but not for the purpose of expressing an assurance conclusion on the effectiveness of these controls.
- Evaluate the technical validity of the ESEF documents, i.e. whether the file containing the ESEF documents meets the requirements of the Delegated Regulation (EU) 2019/815 in the version applicable as of the balance sheet date on the technical specification for this electronic file.
- Evaluate whether the ESEF documents enable an XHTML reproduction with content equivalent to the audited consolidated financial statements and the audited group management report.
- Evaluate whether the tagging of the ESEF documents with Inline XBRL technology (iXBRL) pursuant to Articles 4 and 6 of the Delegated Regulation (EU) 2019/815 in the version applicable as of the balance sheet date enables an appropriate and complete machine-readable XBRL copy of the XHTML reproduction.

Further information pursuant to Article 10 of the EU Audit Regulation

We were elected as group auditor by the annual general meeting on 12 March 2021. We were engaged by the supervisory board on 30 September 2021. We have been the group auditor of MVV Energie AG, Mannheim, without interruption since the 2009 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).

REFERENCE TO A FURTHER MATTER – UTILISATION OF AUDITOR'S REPORT

Our auditor's report should always be read in conjunction with the audited consolidated financial statements and the audited group management report, as well as the audited ESEF documents. The consolidated financial statements and the group management report in XHTML format are merely electronic reproductions of the audited consolidated financial statements and the audited group management report and do no substitute for such. In particular, the "Report on the assurance review of the electronic reproductions of the consolidated financial statements and of the group management report prepared for disclosure purposes in accordance with § 317 Abs. 3a HGB" and the reasonable assurance opinion contained therein may only be utilised in conjunction with the ESEF documents appended electronically on a data carrier or in a file or with the disclosure of a storage address from which the ESEF documents can be electronically downloaded.

GERMAN PUBLIC AUDITOR RESPONSIBLE FOR THE ENGAGEMENT

The German Public Auditor responsible for the engagement is Andrea Ehrenmann.

Essen, 9 November 2021

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 § 315 Abs. 1 HGB ("Handelsgesetzbuch": "German Commercial Code") for the period from 1 October 2020 to 30 September 2021 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 2020 to 30 September 2021 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 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 2020 to 30 September 2021 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, 9 November 2021

PricewaterhouseCoopers GmbH

Wirtschaftsprüfungsgesellschaft

Hendrik Fink   ppa. Meike Beenken

Wirtschaftsprüfer
[German Public Auditor]