Consolidated Financial Statements

Income Statement

Income statement

Euro 000s	**1 Oct 2021 to 30 Sep 2022**	1 Oct 2020 to 30 Sep 2021	Notes
Sales	6,093,298	4,400,508	
Less electricity and natural gas taxes	169,710	166,720	
Sales less electricity and natural gas taxes	**5,923,588**	**4,233,788**	1
Changes in inventories	40,249	27,829	2
Own work capitalised	26,161	23,216	3
Other operating income (including income from derivatives measurement)	4,702,383	1,330,146	4
Cost of materials	5,283,911	3,320,010	5
Employee benefit expenses	510,767	487,301	6
Other operating expenses (including expenses from derivatives measurement)	4,713,641	1,100,158	7
Impairment losses on financial instruments	20,409	8,465	
Income from companies recognised at equity	64,513	36,167	8
Other income from shareholdings	17,550	– 1,644	8
EBITDA	**245,716**	**733,568**	
Depreciation and amortisation	211,262	203,900	9
EBIT	**34,454**	**529,668**	
of which result of IFRS 9 derivative measurement	– 315,329	255,415	
of which EBIT before result of IFRS 9 derivative measurement	349,783	274,253	
Financing income	36,452	13,614	10
Financing expenses	71,676	53,957	11
EBT	**– 770**	**489,325**	
Taxes on income	– 11,397	144,293	12
Annual net income	**10,627**	**345,032**	
of which non-controlling interests	302,732	146,255	
of which earnings attributable to MVV Energie AG shareholders (annual net income after minority interests)	**– 292,105**	**198,777**	13
Basic and diluted earnings per share (Euro)	**– 4.43**	**3.02**	

Statement of Comprehensive Income

Statement of income and expenses recognised in group equity

Euro 000s	**1 Oct 2021 to 30 Sep 2022**	1 Oct 2020 to 30 Sep 2021
Annual net income	**10,627**	**345,032**
Cash flow hedges	745,999	– 44,903
Hedging costs	– 102	310
Currency translation differences	– 2,476	12,022
Reclassifiable share of companies recognised at equity	– 898	– 369
Items that may subsequently be reclassified to profit or loss	**742,523**	**– 32,940**
Actuarial gains and losses	26,912	5,750
Non-reclassifiable share of companies recognised at equity	3,634	– 360
Items that will not be reclassified to profit or loss	**30,546**	**5,390**
Other comprehensive income	**773,069**	**– 27,550**
Total comprehensive income	**783,696**	**317,482**
Non-controlling interests	378,413	173,755
Total comprehensive income attributable to MVV Energie AG shareholders	**405,283**	**143,727**

Balance Sheet

Balance sheet

Euro 000s	30 Sep 2022	30 Sep 2021	Notes
Assets			
Non-current assets			
Intangible assets	316,205	287,663	14
Property, plant and equipment	2,955,387	2,888,292	15
Right-of-use assets	145,411	154,823	16
Investment properties	2,911	2,451	17
Interests in companies recognised at equity	194,418	201,498	18, 19
Other financial assets	59,168	70,647	21
Other receivables and assets (including derivative financial instruments)	3,780,667	1,259,662	22
Deferred tax assets	115,219	103,869	34
	7,569,386	**4,968,905**	
Current assets			
Inventories	352,155	210,880	23
Trade receivables	554,103	376,015	24
Other receivables and assets (including derivative financial instruments)	13,908,354	7,965,545	22
Income tax receivables	58,236	30,136	25
Cash and cash equivalents	1,884,998	1,258,177	26
Assets held for sale	1,047	–	27
	16,758,893	**9,840,753**	
	24,328,279	**14,809,658**	
Equity and debt			
Equity			28
Share capital	168,721	168,721	
Capital reserve	455,241	455,241	
Accumulated net income	569,653	929,166	
Accumulated other comprehensive income	524,178	– 161,911	
Capital of MVV	**1,717,793**	**1,391,217**	
Non-controlling interests	728,278	367,407	
	2,446,071	**1,758,624**	
Non-current debt			
Provisions	147,704	202,577	29, 30
Financial debt	1,733,109	1,609,170	31
Other liabilities (including derivative financial instruments)	3,590,489	1,286,937	32
Deferred tax liabilities	527,143	274,447	34
	5,998,445	**3,373,131**	
Current debt			
Other provisions	202,915	174,289	29, 30
Tax provisions	1,054	1,795	29
Financial debt	183,826	277,106	31
Trade payables	507,216	383,286	33
Other liabilities (including derivative financial instruments)	14,949,368	8,805,416	32
Income tax liabilities	39,384	36,011	34
	15,883,763	**9,677,903**	
	24,328,279	**14,809,658**	

Statement of Changes in Equity

Statement of changes in equity

Euro 000s	Equity contributed		Equity generated						
				Accumulated other comprehensive income					
	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 2020	**168,721**	**455,241**	**803,101**	**9,483**	**– 34,167**	**– 83,241**	**1,319,138**	**215,162**	**1,534,300**
Other comprehensive income	–	–	–	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**
Balance at 1 October 2021	**168,721**	**455,241**	**929,166**	**20,799**	**– 103,886**	**– 78,824**	**1,391,217**	**367,407**	**1,758,624**
Other comprehensive income	–	–	–	– 3,648	676,473	24,563	697,388	75,681	773,069
Result of business operations	–	–	– 292,105	–	–	–	– 292,105	302,732	10,627
Total comprehensive income	**–**	**–**	**– 292,105**	**– 3,648**	**676,473**	**24,563**	**405,283**	**378,413**	**783,696**
Dividends paid	–	–	– 69,202	–	–	–	– 69,202	– 22,919	– 92,121
Capital increase/reduction at subsidiaries	–	–	–	–	–	–	–	–	–
Change in scope of consolidation/ level of shareholding	–	–	1,794	– 120	– 11,179	–	– 9,505	5,377	– 4,128
Balance at 30 September 2022	**168,721**	**455,241**	**569,653**	**17,031**	**561,408**	**– 54,261**	**1,717,793**	**728,278**	**2,446,071**

Cash Flow Statement

Cash flow statement[1]

Euro 000s	**1 Oct 2021 to 30 Sep 2022**	1 Oct 2020 to 30 Sep 2021
Annual net income before taxes on income	– 770	489,325
Amortisation, depreciation and write-ups of intangible assets, property, plant and equipment and investment properties	208,570	203,900
Financial result	35,225	40,344
Interest received	6,976	6,770
Change in non-current provisions	– 12,128	– 5,065
Other non-cash income and expenses	346,025	– 263,377
Result of disposal of non-current assets	– 53,454	– 4,783
Cash flow before working capital and taxes	**530,444**	**467,114**
Change in other assets	– 354,070	– 82,228
Change in other liabilities	840,832	833,345
Change in current provisions	25,412	41,968
Income taxes paid	– 90,592	– 56,968
Cash flow from operating activities	**952,026**	**1,203,231**
Payments for investments in intangible assets, property, plant and equipment and investment properties	– 292,056	– 284,769
Proceeds from disposals of intangible assets, property, plant and equipment and investment properties	4,034	13,048
Proceeds from subsidy payments	18,659	10,155
Proceeds from sale of fully consolidated companies	25,617	–
Proceeds from sale of other financial assets including companies recognised at equity	76,508	2,052
Payments for acquisition of fully consolidated companies and other business units[2]	– 33,969	– 4,702
Payments for other financial assets	– 5,262	– 12,627
Cash flow from investing activities	**– 206,469**	**– 276,843**
Proceeds from taking up of loans[3]	321,792	463,286
Payments for redemption of loans[3]	– 288,064	– 343,075
Dividends paid	– 69,202	– 62,611
Dividends paid to non-controlling interests	– 22,919	– 18,477
Change due to changes in capital at minorities	– 742	– 8,575
Interest paid	– 58,815	– 48,665
Cash flow from financing activities	**– 117,950**	**– 18,117**
Cash-effective changes in cash and cash equivalents	627,607	908,271
Change in cash and cash equivalents due to currency translation	– 786	6,731
Cash and cash equivalents at 1 October 2021 (2020)	1,258,177	343,175
Cash and cash equivalents at 30 September 2022 (2021)	**1,884,998**	**1,258,177**
of which cash and cash equivalents at 30 September 2022 (2021) with restraints on disposal	150	226

1 See further disclosures on cash flow statement in Note 38

2 See disclosures in “Scope of consolidation and changes in scope of consolidation”

3 See “Liabilities in connection with financing activities” in Note 38

Cash Flow Statement

Cash flow – aggregate presentation

Euro 000s	**1 Oct 2021 to 30 Sep 2022**	1 Oct 2020 to 30 Sep 2021
Cash and cash equivalents at 1 October 2021 (2020)	**1,258,177**	**343,175**
Cash flow from operating activities	952,026	1,203,231
Cash flow from investing activities	– 206,469	– 276,843
Cash flow from financing activities	– 117,950	– 18,117
Change in cash and cash equivalents due to currency translation	– 786	6,731
Cash and cash equivalents at 30 September 2022 (2021)	**1,884,998**	**1,258,177**

Notes to MVV's 2022 Consolidated Financial Statements

Information about the company

MVV Energie AG has its legal domicile in Mannheim, Germany (Mannheim District Court: HRB 1780). Its business address is at Luisenring 49, 68159 Mannheim. It is the parent company of the MVV Group (MVV), 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 2022.

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 2022 financial year (1 October 2021 to 30 September 2022). 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 14 November 2022 and subsequently forwarded these to the Supervisory Board for approval.

MVV's 2022 financial year was significantly influenced by a challenging energy industry and policy climate. Moreover, volatility on the energy and procurement markets has risen along with the rapid movements in prices. This had a significant impact, particularly on fair values recognised in the balance sheet and measurement items recognised for derivative financial instruments in the income statement. Procurement prices are contractually agreed, particularly for the main products of electricity and gas. MVV draws on derivative financial instruments to hedge the risk of any increase in the company's procurement costs. MVV is not exposed to any material risks in connection with open positions or open volumes to be covered on the market. In view of this, no provisions for pending losses have been recognised in this respect. Allowances for receivables depend on customers' payment behaviour, taking due account of the macroeconomic situation. The development in sales and the cost of materials in the financial year and in future will be significantly influenced by the development in wholesale prices, particularly for electricity and gas.

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 2022 financial year. These standards and interpretations did not have any material implications for MVV.

The IASB and the IFRS IC have published standards and interpretations not yet requiring mandatory application in the 2022 financial year and of which no voluntary premature application has been made. These standards and interpretations are not expected to have any material implications for MVV.

Consolidation methods

The financial statements included in consolidation have been prepared on the basis of uniform accounting policies as of 30 September 2022.

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 2021	133	35
Additions	9	5
Disposals	11	8
30 September 2022	**131**	**32**

In the 1st quarter of 2022, MVV Enamic GmbH, Mannheim, a fully consolidated company within the MVV Group, acquired 100 % of the shares in the companies Avantag Energy S.a.r.l. (Avantag), Wecker, Luxembourg, and Philipp Rass Energy GmbH (PRE), Trier. This resulted in the full consolidation of both companies. Avantag plans, projects and installs photovoltaics systems with a focus on the German and Luxembourg markets, while PRE offers maintenance and repair services. MVV took over the two companies to better satisfy growing demand for photovoltaics products and exploit synergy effects. These particularly apply to the joint development of on-site power purchase agreements, photovoltaics lease solutions and cross-selling potential. The existing activities of both companies have been identified and recognised by way of purchase price allocations. Given the market climate and regulatory environment, with factors such as the obligation to install photovoltaics in new buildings, rising energy prices and the efforts made by business customers to achieve energy independence, we expect to see substantial growth. This expectation is reflected in a high volume of goodwill.

The fair values of the assets and liabilities identifiable upon the full consolidation of Avantag and PRE are presented in the following table. The preliminary acquisition costs of Euro 32,452 thousand (Avantag) and Euro 1,486 thousand (PRE) correspond to the total of the fair value of net assets thereby acquired and goodwill and were settled in cash. The receivables recognised upon acquisition do not include any allowances. The costs of Euro 274 thousand associated with the two business combinations have been recognised as advisory expenses. These include due diligence expenses and advisory services drawn on to determine the fair value of net assets acquired pursuant to IFRS.

Identifiable assets and liabilities

Euro 000s	Avantag Energy S.a.r.l. Recognised upon acquisition	Philipp Rass Energy GmbH Recognised upon acquisition
Intangible assets	2,333	–
Property, plant and equipment	43	145
Right-of-use assets	832	355
Other financial assets	182	–
Trade receivables	3,016	190
Inventories	1,320	25
Other receivables and assets	2,880	31
Cash and cash equivalents	1,950	12
Deferred tax assets	496	–
Provisions	934	16
Trade payables	2,505	53
Financial debt	832	423
Other liabilities	2,855	150
Deferred tax liabilities	827	–
Fair value of net assets	**5,099**	**116**
Acquired share of net assets	**5,099**	**116**
Goodwill	27,353	1,370

Since being fully consolidated, Avantag and PRE have contributed sales of Euro 30,839 thousand and earnings of Euro – 1,397 thousand. If the two companies had already been included in the Group as of 1 October 2021, they would have contributed sales of Euro 41,118 thousand and earnings of Euro – 1,863 thousand.

Additions to fully consolidated companies also include companies newly added due to the change in status of other majority shareholdings, mainly relating to project companies in the Juwi subgroup. Due to materiality considerations, these now require full consolidation.

Material disposals from fully consolidated companies relate to the sale of the three companies Mobiheat GmbH, Friedberg (Bavaria), Mobiheat Schweiz GmbH, Dietlikon, Switzerland, and Mobiheat Österreich GmbH, Sankt Lorenz, Austria. The remaining changes involve mergers and one liquidation.

Additions to companies recognised at equity relate to the acquisition of SWT Solar GmbH, Trier, and AvanLog Solar GmbH, Munich, and to the foundation of Solventus GmbH and Solventus GmbH & Co. KG, both in Kiel. The company GeoHardt GmbH, Schwetzingen, which was founded in the previous year, was also added to MVV's scope of consolidation in the current financial year. This was due to the inclusion of its parent company, MVV Grüne Wärme GmbH, Mannheim, as a fully consolidated company in the current financial year.

Disposals mainly involve the sale of the following at-equity companies: Main DC Offenbach GmbH, Main DC Asset GmbH, both in Offenbach am Main, Enerix Franchise GmbH & Co. KG and Enerix Management GmbH, both in Regensburg. Furthermore, disposals also include at-equity companies disposed of at the Juwi subgroup.

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

Annual financial statements of foreign group companies are translated into euros (the reporting currency of the Group) in accordance with the functional currency concept and using the modified reporting date method. MVV determines the functional currency for each of its companies. Assets and liabilities are translated from their respective national currencies into euros at the mean exchange rate valid on the balance sheet date. Income and expense items are translated using annual average exchange rates. Currency differences resulting from the use of different exchange rates for the balance sheet and the income statement are recognised directly in equity under accumulated other comprehensive income (currency translation differences).

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

Currency translation

1 Euro	Reporting date rate 30 Sep 2022	30 Sep 2021	Average rate 1 Oct 2021 to 30 Sep 2022	1 Oct 2020 to 30 Sep 2021
Czech crown (CZK)	24.549	25.495	24.817	25.969
British pound (GBP)	0.883	0.861	0.847	0.874
US dollar (USD)	0.975	1.158	1.084	1.195
South African rand (ZAR)	17.535	17.563	17.131	17.731

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 in the preparation of MVV's consolidated financial statements are set out below.

Intangible assets

Intangible assets were predominantly 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	5 – 50
Industrial property rights and patents	1 – 25
Customer contracts and customer lists	2 – 23
Software and software licences	1 – 40
Other intangible assets	1 – 40

With regard to the useful lives of intangible assets, the asset schedules at the group companies include special items at the upper and lower ends of the respective ranges. With the exception of goodwill, there are no material 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 written down but, pursuant to IAS 36, nevertheless reduced by any impairment losses. Development costs are recognised as intangible assets if the following criteria are met:

- The completion of the asset is technically feasible, so that it will be available for use or sale.
- The management has the intention to complete the asset so that it will be available for use or sale.
- The company has the ability to use or sell the asset.
- The company can demonstrate how the asset will generate probable future economic benefits.
- Adequate technical, financial and other resources are available to complete development and to use or sell the asset.
- The expenditure attributable to the asset during its development can be reliably measured.

Directly allocable costs that are capitalised include employee expenses and a commensurate share of relevant overheads. Capitalised development costs are amortised from the time at which the asset is available for use. Research and development expenses that do not satisfy the aforementioned criteria are recognised as expenses in the income statement. Development costs previously expensed are not recognised as assets in subsequent periods.

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.

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 recognised on a time-apportioned basis in the year of addition. Scheduled depreciation is based on the following useful lives:

Useful lives in years	
Buildings	4 – 100
Technical equipment and machinery	4 – 55
Transmission grids	5 – 69
Plant and operating equipment	1 – 50

With regard to the useful lives of tangible assets, the asset schedules at the group companies include special items at the upper and lower ends of the respective ranges.

Investment properties

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

Impairment test 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.

If 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 for which an independent third party would acquire the cash generating unit at the balance sheet date is stated. The fair values/values in use of the cash generating units are determined on the basis of 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 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. Assets are written up to a maximum of amortised cost.

Goodwill is not written up. If the carrying amount of a cash generating unit to which goodwill has been allocated exceeds 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, as well as financial and non-financial receivables and assets.

Further information about financial and non-financial receivables and assets can be found in the notes to financial instruments.

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 comprise raw materials and supplies, unfinished and finished products and services and projects rights, advance payments made for such and gas holdings. 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 impaired 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 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.

Gains or losses from the measurement of discontinued operations and from specific assets within a discontinued operation are recognised separately under earnings from discontinued operations in the income statement. The previous year's figures in the income statement are adjusted accordingly. The relevant assets and liabilities are recognised in the aforementioned separate line items in the balance sheet. In the cash flow statement, the cash flows from discontinued operations are recognised separately, as are the previous year's figures. In the balance sheet, by contrast, the previous year's figures are not adjusted.

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 process impacting on earnings. Any surplus of deferred tax assets from temporary differences is only recognised if it is recoverable. 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 only capitalised if the utilisation of these losses carried forward is certain within a maximum forecast horizon of five years based on existing business plans. Deferred taxes are calculated by reference to 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 settlement 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 outcomes.

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

Leases

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 involves 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 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.

Lease liabilities refer to buildings, various items of technical equipment and plant and operating equipment. Vehicle leases make up the largest share of leases. Further material leases apply for office buildings, CHP units, district heat storage facilities, storage sites and licence agreements permitting the use of agricultural land and needed to operate wind turbines and associated infrastructure. Lease liabilities 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 the 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 any residual value guarantee, and discounted by the interest rate implicit in the lease. Over the term of the finance lease, the lessor increases the lease receivable through profit or loss for interest income and reduces it in equity by the amount of principal payments received from the lessee.

Financial instruments

Primary financial instruments: Financial assets, 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 their market price at 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 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. If they are 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 risks and rewards incidental to ownership of the asset are transferred and the power to dispose over the asset has been ceded.

Financial liabilities, such as 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 fair value. 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.

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. If 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. Fair value hedges are designated for closed foreign currency positions.

Energy trading contracts intended to hedge future commodity purchases and sales may be in the scope of IFRS 9. Financial energy trading contracts are recognised as derivative financial instruments. They are either designated as hedging instruments for cash flow hedge relationships or recognised as standalone derivatives. For physical energy trading contracts, a decision has to be taken as to whether they should be treated as derivative financial instruments pursuant to IFRS 9 or whether application is to be made of the own-use exemption. Other energy trading transactions are designated as all-in-one cash flow hedge relationships and recognised as standalone derivatives.

Energy trading contracts intended to hedge future electricity price risks for proprietary generation plants are in the scope of IFRS 9. They are designated as hedging instruments for a fair value hedge relationship.

Energy trading contracts held for trading or concluded in connection with the overall risk management for all energy trading contracts are in the scope of IFRS 9. Gains and losses from these energy trading contracts are netted and recognised either as other operating income or as other operating expenses.

Interest swaps intended to hedge future interest rate risks are in the scope of IFRS 9. They fix the future interest payments for floating-rate financial liabilities and are designated as hedging instruments for cash flow hedge relationships.

Developments in the fair value of those components of a hedging instrument 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 accounting policies. This has not materially influenced 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. 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.

For assets due to be sold, a decision has to be taken as to whether these can be sold in their current state and whether such sale is highly likely within the next 12 months. If both are the case, the assets and any associated liabilities have to be recognised and measured as "Assets and liabilities held of sales.

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 relevant date in 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 for trade receivables and trade 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 clams 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. In the case of feed-in remuneration, the grid operator accepts the electricity from plant operators and makes this available to the transmission grid operator, which in turn markets it on the energy exchange.

The overwhelming 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 **37.**

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 2022**	FY 2021
Electricity	3,208,871	2,086,418
Heat	437,633	390,820
Gas	1,228,810	774,875
Water	90,766	90,064
Other sales	957,508	891,611
	5,923,588	**4,233,788**

Timing of sales recognition

Euro 000s	**FY 2022**	FY 2021
Sales recognised over time	5,734,066	3,993,118
Electricity	3,208,871	2,086,418
Heat	437,633	390,820
Gas	1,228,810	774,875
Water	90,766	90,064
Other sales	767,986	650,941
Sales recognised at a point in time	189,522	240,670
Project development	189,522	240,670
	5,923,588	**4,233,788**

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

Project development sales include sales from the development and the functional and turnkey construction of wind power and photovoltaics projects. In most cases, the investor becomes involved after completion of the projects by acquiring shares in a project company. The respective sales are therefore recognised at a point in time. Sales of Euro 105,957 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 78,344 thousand).

In group currency, sales at our foreign subsidiaries came to Euro 310, 621 thousand (previous year: Euro 348,217 thousand). The reduction in this share of sales is chiefly due to a lower 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 2022	FY 2021
Income from derivative financial instruments	4,634,560	1,223,996
Exchange rate gains	12,226	3,747
Agency agreements and personnel supplies	9,079	8,572
Reversal of provisions	8,741	23,612
Rental income	5,726	5,874
Reimbursements	4,837	19,636
Income from sales of assets and write-ups	3,357	3,566
Operating taxes (including energy taxes)	1,305	21,428
Miscellaneous	22,552	19,715
	4,702,383	**1,330,146**

Other operating income particularly includes measurement items for derivative financial instruments. This valuation-dependent income is countered by other operating expenses. The marked year-on-year increase in this item is due to significant movements in market prices and the resultant rise in the fair values of energy trading transactions requiring measurement under IFRS 9.

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

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

Miscellaneous other operating income includes large numbers of other business transactions and income, such as income from services to employees, recoveries and dunning charges.

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 interest rate.

Future income from operating lease payments

Euro 000s	FY 2022	FY 2021
Minimum lease payments with maturities < 1 year	2,445	2,462
Minimum lease payments with maturities > 1 year and < 5 years	7,542	5,047
Minimum lease payments with maturities > 5 years	20,380	12,805

5. Cost of materials

Cost of materials

Euro 000s	FY 2022	FY 2021
Raw materials, supplies and purchased goods	4,515,565	2,523,220
Procurement of wind turbines and solar power systems	142,370	184,796
Purchased services	625,976	611,994
	5,283,911	**3,320,010**

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 2022	FY 2021
Wages and salaries	414,967	396,471
Social security expenses and welfare expenses	71,933	68,015
Pension expenses	23,867	22,815
	510,767	**487,301**

MVV had an annual average of 6,517 employees (previous year: 6,344). This total includes 10 executives (previous year: 10), 6,167 employees (previous year: 5,990), 305 trainees (previous year: 308) and 35 interns/students (previous year: 35).

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 2022**	FY 2021
Expenses for derivative financial instruments	4,506,589	899,054
Contributions, fees and duties	38,901	34,302
Expenses for advisory services	31,245	31,809
Maintenance, repair and IT services	21,637	20,170
Rental, leasehold and leasing expenses	17,812	16,227
Operating taxes (including energy taxes)	14,695	36,419
Public relations expenses	14,049	9,389
Other services	12,488	13,111
Other employee-related expenses	12,039	8,928
Exchange rate losses	11,607	2,490
Miscellaneous	32,579	28,259
	4,713,641	**1,100,158**

Other operating expenses particularly include negative measurement items for derivative financial instruments. These valuation-dependent expenses are countered by other operating income. The marked year-on-year increase in this item is due to significant movements in market prices and the resultant rise in the fair values of energy trading transactions requiring measurement under IFRS 9.

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

Miscellaneous other operating expenses include large numbers of other business transactions and expenses, such as expenses for office material, vehicle pool costs (except leasing) and subsidy and sales promotion expenses.

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 shareholdings, 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 2022**	FY 2021
Income from companies recognised at equity	64,513	36,167
Income from other shareholdings	766	– 2,161
Income from disposals of associates	16,784	517
	82,063	**34,523**

At Euro 39,407 thousand, the major share of the increase in income from companies recognised at equity is due to the sale of Main DC Offenbach GmbH.

Income from disposals of associates mainly results from the sale of the three companies Mobiheat GmbH, Mobiheat Schweiz GmbH and Mobiheat Österreich GmbH.

9. Depreciation and amortisation

Depreciation and amortisation

Euro 000s	**FY 2022**	FY 2021
Depreciation and amortisation	211,262	203,900
of which impairment losses	603	–

10. Financing income

Financing income

Euro 000s	**FY 2022**	FY 2021
Interest income from finance leases	3,368	3,900
Income from currency translation in connection with financing activities	18,805	4,663
Income from derivative financial instruments	26	143
Interest income from current account, overnight and fixed-term deposits	975	518
Interest income from discounting provisions and liabilities	9,113	266
Other interest and similar income	4,165	4,124
	36,452	**13,614**

The increase in income from currency translation in connection with financing activities mainly results from the translation of group-internal financing facilities denominated in foreign currencies.

The change in interest income from discounting provisions and liabilities is due to the increase in the discount rates applied.

11. Financing expenses

Financing expenses

Euro 000s	**FY 2022**	FY 2021
Interest expenses from current account, non-current and current loans	40,885	42,732
Expenses for currency translation in connection with financing activities	3,595	2,282
Expenses for derivative financial instruments	10,801	583
Compounding of provisions	1,154	920
Other interest and similar expenses	15,241	7,441
	71,676	**53,958**

The other interest and similar expenses were reduced by Euro 494 thousand as a result of the capitalisation of borrowing interest (previous year: Euro 2,287 thousand). The financing cost rates thereby assumed ranged from 1.8 % to 2.2 % in the 2022 financial year and from 1.8 % to 2.4 % in the previous year.

The increase in expenses for derivative financial instruments mainly results from the measurement of currency derivatives serving to hedge group-internal financing facilities concluded in foreign currencies.

Expenses for compounding provisions principally relate to long-term personnel provisions.

The increase in other interest and expenses is chiefly due to higher interest expenses caused by the development in margins.

12. Taxes on income

Taxes on income

Euro 000s	FY 2022	FY 2021
Current taxes	67,752	64,150
Deferred taxes	– 79,149	80,143
	– 11,397	**144,293**

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.

Deferred tax income is due on the one hand to tax expenses of Euro 10,048 thousand (previous year: Euro 1,202 thousand) attributable to changes in the deferred tax assets stated for losses carried forward and on the other to deferred tax income of Euro 89,197 thousand (previous year: tax expenses of Euro 78,941 thousand) attributable to the arising and/or reversal of temporary differences.

Current tax expenses were reduced by Euro 4,293 thousand by using tax losses not previously recognised (previous year: Euro 10,082 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 2022	FY 2021
Earnings before taxes (EBT)	**– 770**	**489,325**
Expected tax expenses based on tax rate of 30.3 % (previous year: 30.3 %)	**– 233**	**148,265**
Deviations resulting from trade tax assessment base	1,749	1,545
Deviations from expected tax rate	3,390	– 773
Utilisation of losses, carried forward, change in write-down for losses and losses for which no deferred taxes are recognised	7,922	1,202
Non-deductible expenses	2,407	3,569
Tax-exempt income	– 20,784	– 5,009
Income from companies recognised at equity	– 4,403	– 937
Permanent differences	1,735	– 4,818
Taxes for previous years	– 3,188	1,815
Goodwill impairments	–	–
Miscellaneous	8	– 566
Effective tax expenses	**– 11,397**	**144,293**
Effective tax rate (%)	**1,480.1**	**29.5**

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 2022	FY 2021
Share of earnings attributable to MVV Energie AG shareholders (Euro 000s)	– 292,105	198,777
Number of shares (weighted average in 000s)	65,907	65,907
Earnings per share (Euro)	– 4.43	3.02
Dividend per share (Euro)	1.05	1.05

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

The dividend for the 2022 financial year corresponds to the proposal made by the Executive and Supervisory Boards and is dependent on approval by the Annual General Meeting on 10 March 2023. The proposal foresees distributing a dividend of Euro 69,202 thousand. The proposals concerning the level of dividend and the appropriation of profit for the 2021 financial year were accepted by the Annual General Meeting on 11 March 2022. A dividend of Euro 69,202 thousand was distributed.

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 comprise 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 987 thousand in the 2022 financial year (previous year: Euro 659 thousand). Development expenses capitalised under IAS 38 came to Euro 34 thousand in the year under report (previous year: Euro 236 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 2022 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.

Where no market prices or other binding indicators for the value of the units are available, their fair values less costs to sell are 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 are extrapolated over a forecast period comprising three detailed planning years and two subsequent years and discounted using discount rates before taxes (weighted costs of capital) of 7.3 % to 10.9 % (previous year: 4.6 % to 11.3 %). A growth rate of 0.5 % has been assumed for the perpetuity included in the calculation.

Within a sensitivity analysis, the discount rate was varied by 0.5 percentage points. Due to the higher interest yield curve on the capital markets at present, the costs of capital at two cash generating units are especially sensitive. At these two units, the surplus cover of the recoverable amount stood at Euro 14,225 thousand and Euro 17,194 thousand respectively. If the discount rate after taxes were to rise by 0.3 and 0.2 percentage points respectively, with all other assumptions and parameters remaining unchanged, the carrying amounts of these two cash generating units would exceed their recoverable amounts.

The carrying amounts stated for goodwill are structured as follows:

Goodwill carrying amounts

Euro 000s	**30 Sep 2022**	30 Sep 2021
Juwi subgroup	79,076	75,144
Energieversorgung Offenbach subgroup	68,582	75,894
MVV Enamic subgroup	65,317	36,596
Windwärts subgroup	–	3,910
MVV Energie CZ subgroup	6,624	6,346
MVV Umwelt subgroup	3,080	3,082
Other subgroups	8,238	7,935
	230,917	**208,907**

Upon the merger of companies from the Windwärts subgroup into the Juwi subgroup, their goodwill was transferred to the Juwi subgroup. As an additional component of goodwill at the Juwi subgroup, this was also subject to an impairment test. Due to the sale of Mobiheat GmbH, Mobiheat Schweiz GmbH and Mobiheat Österreich GmbH, goodwill at the Energieversorgung Offenbach subgroup decreased by Euro 7,312 thousand. The addition of goodwill at the Enamic subgroup is attributable to the full consolidation of Avantag Energy s.à r.l. and Philipp Rass Energy GmbH.

Intangible assets

Euro 000s	Concessions, industrial property rights and similar rights and values	Goodwill	Advance payments	**Total**
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**
Gross value at 1 October 2021	330,204	263,792	12,346	606,342
Change in scope of consolidation	– 1,435	21,711	– 77	20,199
Currency adjustments	– 371	393	2	24
Additions	1,836	–	15,960	17,796
Disposals	– 58,541	–	– 33	– 58,574
Reclassifications	3,149	–	– 2,941	208
Gross value at 30 September 2022	**274,842**	**285,896**	**25,257**	**585,995**
Amortisation at 1 October 2021	– 263,794	– 54,885	–	– 318,679
Change in scope of consolidation	3,485	–	–	3,485
Currency adjustments	– 3	– 94	–	– 97
Scheduled amortisation	– 12,692	–	–	– 12,692
Impairment losses	– 339	–	–	– 339
Disposals	58,532	–	–	58,532
Amortisation at 30 September 2022	**– 214,811**	**– 54,979**	**–**	**– 269,790**
Net value at 30 September 2022	**60,031**	**230,917**	**25,257**	**316,205**

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 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
Write-ups	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**
Gross value at 1 October 2021	1,040,821	5,178,926	187,864	248,547	6,656,158
Change in scope of consolidation	–	– 9,471	– 1,494	–	– 10,965
Currency adjustments	1,152	– 181	177	151	1,299
Additions	2,472	70,653	7,950	208,803	289,878
Subsidy payments received	– 1,014	– 17,612	– 33	–	– 18,659
Disposals	– 4,181	– 29,951	– 15,884	– 2,385	– 52,401
Reclassifications	13,607	88,553	2,543	– 103,086	1,617
IFRS 5 reclassifications	– 1,047	–	–	–	– 1,047
Gross value at 30 September 2022	**1,051,810**	**5,280,917**	**181,123**	**352,030**	**6,865,880**
Depreciation at 1 October 2021	– 496,663	– 3,128,422	– 142,552	– 229	– 3,767,866
Change in scope of consolidation	–	2,104	723	–	2,827
Currency adjustments	– 1,753	– 2,704	– 141	– 9	– 4,607
Scheduled depreciation	– 25,303	– 145,770	– 9,582	–	– 180,655
Write-ups	787	1,750	155	–	2,692
Impairment losses	–	–	–	– 264	– 264
Disposals	2,408	19,300	15,672	–	37,380
Reclassifications	– 27	27	–	–	–
Depreciation at 30 September 2022	– 520,551	– 3,253,715	– 135,725	– 502	– 3,910,493
Net value at 30 September 2022	**531,259**	**2,027,202**	**45,398**	**351,528**	**2,955,387**

The property, plant and equipment presented mainly relates to internally used property, plant and equipment. In the non-current asset schedule, distribution grids are allocated to the technical equipment and machinery category.

No property, plant and equipment was provided as security for financial debt in the 2022 financial year. The financial debt for which property, plant and equipment with an equivalent value of Euro 9,832 thousand was provided as security in the previous year no longer exists. Property, plant and equipment of Euro 81,966 thousand is subject to restrictions on disposal (previous year: Euro 92,303 thousand).

Subsidy payments received involve government grants received in the 2022 financial year chiefly in connection with urban planning measures for water and district heat 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 2022 financial year include the extension and renewal of distribution grids in Kiel and Mannheim and the construction of a sewage treatment plant and district heat backup plant in Mannheim.

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 2022 were divided into land and buildings of Euro 9,808 thousand, technical equipment and machinery of Euro 4,793 thousand, advance payments and construction in progress of Euro 185 thousand and plant and operating equipment of Euro 161 thousand.

The income from write-ups in the 2022 financial year is due to the reasons for a historic write-down now no longer being applicable. The earnings strength of the pellet production cash generating unit in the New Energies segment performed more positively than originally assumed. The management saw this as indicating a need to perform an impairment test on this cash generating unit. This confirmed the increase in earnings strength. The future values in use were determined using a discount rate of 5.1 % after taxes.

16. Leases as lessee

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

Right-of-use assets

Euro 000s	Land and buildings	IT hardware and software	Vehicles	Technical equipment and machinery	Plant and operating equipment	Other leased items	**Total**
Opening balance at 1 October 2021	122,719	1,175	5,656	25,124	16	133	154,823
Depreciation and amortisation	– 11,684	– 566	– 2,764	– 2,174	– 10	– 115	– 17,313
Additions	14,038	281	3,130	941	16	19	18,425
Other changes	– 5,437	– 1	– 1,150	– 3,934	–	– 2	– 10,524
Closing balance at 30 September 2022	**119,636**	**889**	**4,872**	**19,957**	**22**	**35**	**145,411**

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 2022	FY 2021
Interest expenses for lease liabilities	3,986	4,170
Outflow of cash for leases	17,468	19,325
Expenses for short-term leases	1,048	1,365
Expenses for low-value leases	3,481	721
Expenses for variable lease payments	74	354
Income from sub-lease arrangements	85	–

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 101 thousand in the 2022 financial year (previous year: Euro 33 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 2022	FY 2021
Gross value at 1 October	2,451	2,424
Currency adjustments	460	27
Gross value at 30 September	**2,911**	**2,451**
Depreciation at 1 October	–	–
Depreciation at 30 September	**–**	**–**
Net value at 30 September	**2,911**	**2,451**

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 comprehensive income at material joint ventures are presented in the following tables:

Statement of comprehensive income for material joint ventures

	Grosskraftwerk Mannheim AG, Mannheim		Stadtwerke Ingolstadt Beteiligungen GmbH, Ingolstadt	
Euro 000s	**Financial year**	Previous year	**Financial year**	Previous year
Sales excluding energy taxes	1,007,201	531,867	219,337	200,640
Scheduled depreciation and amortisation	– 117,064	– 127,388	– 15,316	– 15,261
Interest income	–	1	74	88
Interest expenses	– 37,087	– 37,868	– 522	– 691
Income tax expenses/income	– 23,000	– 16,229	– 9,485	– 7,747
Annual net income	30,968	25,256	21,189	18,624
Other comprehensive income	9,693	– 3,211	91	185
Total comprehensive income for period	**40,661**	**22,045**	**21,280**	**18,809**
Dividends received from material joint ventures	–	–	7,976	7,771

Further key financial figures for material joint ventures

	Grosskraftwerk Mannheim AG, Mannheim		Stadtwerke Ingolstadt Beteiligungen GmbH, Ingolstadt	
Euro 000s	**Financial year**	Previous year	**Financial year**	Previous year
Assets	**2,017,183**	**1,795,709**	**288,493**	**287,230**
Non-current assets	1,427,019	1,540,530	246,480	244,134
Current assets	590,164	255,179	42,013	43,096
of which cash and cash equivalents	264	336	2,321	1,483
Equity and debt	**2,017,183**	**1,795,709**	**288,493**	**287,230**
Equity	176,864	136,203	73,285	68,484
Non-current provisions	733,023	721,605	11,628	11,842
Non-current debt and other liability items	530,425	665,589	76,913	80,457
of which non-current financial debt	480,000	605,000	14,192	16,394
Current provisions	437,204	165,799	1,009	225
Current debt and other liability items	139,667	106,513	125,658	126,222
of which current financial debt	69,870	69,870	50,350	91,596

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

	Grosskraftwerk Mannheim AG, Mannheim		Stadtwerke Ingolstadt Beteiligungen GmbH, Ingolstadt	
Euro 000s	**Financial year**	Previous year	**Financial year**	Previous year
Net assets at 1 October	136,203	114,158	68,484	65,731
Profit/loss for period	30,968	25,256	21,189	18,624
Distribution	–	–	– 16,479	– 16,056
Other comprehensive income	9,693	– 3,211	91	185
Net assets at 30 September	**176,864**	**136,203**	**73,285**	**68,484**
Group share of net assets	49,522	38,137	35,470	33,146
Other items	1,897	1,897	– 392	– 154
Goodwill			53,759	53,759
Carrying amount of interest in joint ventures	**51,419**	**40,034**	**88,837**	**86,751**

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	2,671	9,501
Other comprehensive income	1,608	885
Total comprehensive income for period	4,279	10,386
Carrying amount of interest in non-material joint ventures	**39,339**	**59,857**

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	3,422	4,112
Total comprehensive income for period	3,422	4,112
Carrying amount of interest in non-material associates	**14,823**	**14,857**

The income from shareholdings collected by MVV from associates amounted to Euro 962 thousand in the 2022 financial year (previous year: Euro 510 thousand).

MVV's share of the contingent liabilities at associates amounted to Euro 1,521 thousand (previous year: Euro 1,606 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 2021 to 30 Sep 2022**	1 Oct 2020 to 30 Sep 2021
Sales excluding energy taxes	521,402	381,082
Annual net income	271,641	85,292
Other comprehensive income	79,173	38,111
Total comprehensive income for period	**350,814**	**123,403**
Total comprehensive income attributable to non-controlling interests	175,403	61,700
Dividends paid (to non-controlling shareholders)	8,963	8,605

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

Euro 000s	**1 Oct 2021 to 30 Sep 2022**	1 Oct 2020 to 30 Sep 2021
Sales excluding energy taxes	1,521,710	993,666
Annual net income	324,874	218,784
Other comprehensive income	9,387	907
Total comprehensive income for period	**334,261**	**219,691**
Total comprehensive income attributable to non-controlling interests	163,788	107,649
Dividends paid (to non-controlling shareholders)	11,553	7,142

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

Euro 000s	**30 Sep 2022**	30 Sep 2021
Assets	**1,179,403**	**575,465**
Non-current assets	563,984	410,778
Current assets	615,419	164,687
of which cash and cash equivalents	110,663	8,851
Equity and debt	**1,179,403**	**575,465**
Equity	578,135	245,249
Non-current provisions	22,026	30,432
Non-current debt and other liability items	264,206	177,243
of which non-current financial debt	124,366	128,467
Current provisions	9,097	5,876
Current debt and other liability items	305,939	116,665
of which current financial debt	10,974	15,741

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

Euro 000s	**30 Sep 2022**	30 Sep 2021
Assets	**2,318,507**	**1,276,894**
Non-current assets	1,145,131	772,273
Current assets	1,173,376	504,621
of which cash and cash equivalents	320,014	181,697
Equity and debt	**2,318,507**	**1,276,894**
Equity	739,906	429,222
Non-current provisions	25,291	32,979
Non-current debt and other liability items	583,646	344,498
of which non-current financial debt	230,341	257,187
Current provisions	17,434	25,982
Current debt and other liability items	952,230	444,213
of which current financial debt	32,437	36,351

Total non-controlled interests in subsidiaries amounted to Euro 728,278 thousand in the period under report, of which Euro 355,249 thousand related to Stadtwerke Kiel AG, Kiel, Euro 269,740 thousand to Energieversorgung Offenbach AG, Offenbach am Main, and Euro 101,977 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 **36**).

Other financial assets comprise other majority shareholdings, other shareholdings, receivables from finance leases and loans. These items are measured and categorised as follow:

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 5.2 % (previous year: 4.4 %). The average period for which interest rates remain fixed amounts to 2.3 years in the case of fixed-interest loans (previous year: 4.1 years) and 5.4 years in the case of finance leases (previous year: 6.6 years).

Default risks identifiable for financial assets are accounted for by way of adjustments recognised under income from shareholdings or in impairment losses for financial instruments.

Further information about financial instruments can be found in Note **36**.

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

Other financial assets mainly comprise lease receivables of Euro 43,601 thousand (previous year: Euro 55,882 thousand) and loans of Euro 6,539 thousand (previous year: Euro 6,284 thousand).

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 financial 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 2022**	30 Sep 2021
Minimum lease payments with maturities < 1 year	12,105	12,607
Minimum lease payments with maturities > 1 year and < 5 years	37,814	44,079
of which minimum lease payments with maturities > 1 year and < 2 years	10,101	10,930
of which minimum lease payments with maturities > 2 years and < 3 years	10,301	11,152
of which minimum lease payments with maturities > 3 years and < 4 years	10,306	11,143
of which minimum lease payments with maturities > 4 years and < 5 years	7,106	10,854
Minimum lease payments with maturities > 5 years	14,222	25,352
Total minimum lease payments	**64,141**	**82,038**
Less financing income not yet realised	– 11,104	– 16,759
Net investments in finance leases	**53,037**	**65,279**

The reduction in receivables from minimum lease payments and associated interest portions mainly results from the redemption of receivables in connection with the sale of shares in Main DC Offenbach GmbH and Main DC Asset GmbH.

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 2022**	FY 2021
Financing income from net investment in lease	3,368	3,900
Profit on sale	151	16

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 2022			30 September 2021	
Euro 000s	**Non-current**	**Current**	**Total**	Non-current	Current	Total
Financial receivables and assets						
Derivative financial instruments	3,764,544	13,662,345	17,426,889	1,240,355	7,757,340	8,997,695
Receivables from security deposits for energy trading transactions	–	36,235	36,235	–	–	–
Receivables from finance leases	–	9,435	9,435	–	9,397	9,397
Suppliers with debit balances	–	7,580	7,580	–	11,619	11,619
Loans	–	1,973	1,973	–	2,220	2,220
Receivables from employees	–	241	241	–	252	252
Escrow accounts	–	35	35	–	35	35
Miscellaneous other financial assets	5,134	7,070	12,204	8,612	16,203	24,815
Non-financial receivables and assets						
Project development contract assets	–	22,695	22,695	–	47,992	47,992
Other contract assets	2,940	12,882	15,822	3,289	43,106	46,395
Other tax receivables	–	113,419	113,419	–	63,563	63,563
Deferred expenses and accrued income	4,999	29,319	34,318	3,995	7,873	11,868
Emission rights	–	1,335	1,335	–	2,632	2,632
Miscellaneous other non-financial assets	3,050	3,790	6,840	3,411	3,313	6,724
	3,780,667	**13,908,354**	**17,689,021**	**1,259,662**	**7,965,545**	**9,225,207**

Derivative financial instruments (financial receivables and assets)

		30 September 2022			30 September 2021	
Euro 000s	**Non-current**	**Current**	**Total**	Non-current	Current	Total
Derivative financial instruments	3,764,544	13,662,345	17,426,889	1,240,355	7,757,340	8,997,695
of which not involving IFRS 9 hedges	2,071,343	10,243,546	12,314,889	762,334	6,204,528	6,966,862
of which involving IFRS 9 hedges	1,693,201	3,418,799	5,112,000	478,021	1,552,812	2,030,833

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 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 **36**.

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 the settlement of projects, project development contract assets showed a significant reduction of Euro 25,297 thousand. Other contract assets decreased by Euro 30,573 thousand. This reduction was chiefly due to the completion of an investment project in which a subsidiary is acting as general contractor.

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

The increase in deferred expenses and accrued income mainly relates to an advance payment made to Grosskraftwerk Mannheim for its coal stocking measures.

Miscellaneous other non-financial assets include expenses of Euro 6,054 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 2022**	FY 2021
Balance at 1 October	626	627
Balance at 30 September	708	626

Other receivables and assets

	30 September 2022			30 September 2021		
Euro 000s	**Non-current**	**Current**	**Total**	Non-current	Current	Total
Other receivables and assets						
from third parties	3,779,050	13,852,427	17,631,477	1,259,230	7,930,424	9,189,654
from other majority shareholdings	–	1,317	1,317	–	1,139	1,139
from companies recognised at equity	1,617	54,610	56,227	432	33,982	34,414
	3,780,667	**13,908,354**	**17,689,021**	**1,259,662**	**7,965,545**	**9,225,207**

The write-downs and maturity structures for other receivables and assets have been presented in Note **36.**

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 generally made to energy exchanges such as the European Energy Exchange (EEX) or the Intercontinental Exchange (ICE). These are included in the receivables from security deposits for energy trading transactions line item. Due to the charging on of margins to a joint venture, receivables from security deposits rose year-on-year to Euro 36,235 thousand (previous year: Euro 0 thousand).

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

Contract assets

Euro 000s	**FY 2022**	FY 2021
Balance at 1 October	94,387	58,528
Balance at 30 September	38,517	94,387

23. Inventories

Inventories

Euro 000s	**30 Sep 2022**	30 Sep 2021
Raw materials and supplies	121,761	90,441
Finished and unfinished products and services (project rights)	94,816	55,321
Finished and unfinished products and services (other) and merchandise	56,451	50,797
Advance payments	39,703	5,654
Gas holdings	39,424	8,667
	352,155	**210,880**

Write-downs of Euro 1,195 thousand were recognised for inventories (previous year: Euro 5,368 thousand). Write-ups of Euro 2,015 thousand were included due to higher net disposal prices (previous year: Euro 3,464 thousand).

Gas holdings consist of gas stored in caverns. The significant increase in this line item is due to the rise in gas procurement prices.

24. Trade receivables

Trade receivables

Euro 000s	**30 Sep 2022**	30 Sep 2021
Trade receivables	554,103	376,015
of which due from other majority shareholdings	16	122
of which due from companies recognised at equity	12,486	10,698
of which due from other shareholdings	694	876

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 arise in connection with contracts with customers.

The write-downs and maturity structures for trade receivables have been presented in Note **36.**

25. Income tax receivables

The income tax receivables of Euro 58,236 thousand (previous year: Euro 30,136 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 895 million (previous year: inflow of Euro 843 million). The acquisition of fully consolidated companies and other business units resulted in the addition of cash and cash equivalents of Euro 2,049 thousand (previous year: Euro 8,771 thousand). The disposal of fully consolidated companies and other business units led to the retirement of cash and cash equivalents of Euro 2,530 thousand (previous year: Euro 1,508 thousand).

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

27. Assets held for sale

A piece of land owned by MVV Enamic GmbH was classified as held for sale. The land was acquired with the intention of building a data centre. A tender for an anchor customer was not obtained, as a result of which the land is to be resold. The sale has been contractually agreed and all conditions precedent are expected to be satisfied by the end of the 2022 calendar year.

28. 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 2022, 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. Income of Euro 676,473 thousand was 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 70,783 thousand).

29. Provisions

Provisions

Euro 000s	Balance at 1 Oct 2021	Change in scope of consoli-dation	Currency adjust-ments	Utilised	Reversed	Added	Changes within equity	Reclassi-fied	Interest compo-nent	**Balance at 30 Sep 2022**
Non-current provisions										
Pensions and similar obligations	**96,044**	**–**	**1**	**– 3,233**		**3,665**	**– 35,427**	**13,249**	**1,082**	**75,381**
Personnel-related obligations	36,289	–	5	– 13,940	– 380	1,070	–	– 13,684	– 387	8,973
Refurbishment, dismantling and warranty obligations	50,490	–	– 98	– 2	– 1,000	994	– 6,561	– 2,337	– 1,245	40,241
Provisions for litigation and contract risks	1,589	–	–	– 224	– 275	1,979	–	– 36	–	3,033
Miscellaneous contingencies	18,165	–	–	– 299	– 707	767	–	2,248	– 98	20,076
Total other provisions	**106,533**	**–**	**– 93**	**– 14,465**	**– 2,362**	**4,810**	**– 6,561**	**– 13,809**	**– 1,730**	**72,323**
Total non-current provisions	**202,577**	**–**	**– 92**	**– 17,698**	**– 2,362**	**8,475**	**– 41,988**	**– 560**	**– 648**	**147,704**
										–
Current provisions										–
Tax provisions	**1,795**	**934**	**–**	**– 1,869**	**– 200**	**394**	**–**	**–**	**–**	**1,054**
Other provisions										–
Personnel-related obligations	44,263	– 46	341	– 38,260	– 2,227	39,936	–	439	–	44,446
Services not yet invoiced	80,713	–	36	– 77,910	– 503	93,297	–	–	–	95,633
Refurbishment, dismantling and warranty obligations	8,750	– 21	75	– 2,095	– 662	588	–	2,337	–	8,972
Provisions for litigation and contract risks	3,943	–	50	– 1,376	– 1,139	6,819	–	36	–	8,333
Miscellaneous contingencies	36,620	13	50	– 21,474	– 2,675	35,249	–	– 2,252	–	45,531
Total other provisions	**174,289**	**– 54**	**552**	**– 141,115**	**– 7,206**	**175,889**	**–**	**560**	**–**	**202,915**
Total current provisions	**176,084**	**880**	**552**	**– 142,984**	**– 7,406**	**176,283**	**–**	**560**	**–**	**203,969**
										–
Total provisions	**378,661**	**880**	**460**	**– 160,682**	**– 9,768**	**184,758**	**– 41,988**	**–**	**– 648**	**351,673**

Reclassifications mainly involve reclassifications of compensation payments of Euro 13,249 thousand.

Provisions broken down by maturity

	30 September 2022			30 September 2021		
Euro 000s	**Non-current**	**Current**	**Total**	Non-current	Current	Total
Provisions for pensions and similar obligations	75,381	–	75,381	96,044	–	96,044
Tax provisions	–	1,054	1,054	–	1,795	1,795
Personnel-related obligations	8,973	44,446	53,419	36,289	44,263	80,552
Services not yet invoiced	–	95,633	95,633	–	80,713	80,713
Refurbishment, dismantling and warranty obligations	40,241	8,972	49,213	50,490	8,750	59,240
Provisions for litigation and contract risks	3,033	8,333	11,366	1,589	3,943	5,532
Miscellaneous contingencies	20,076	45,531	65,607	18,165	36,620	54,785
	147,704	**203,969**	**351,673**	**202,577**	**176,084**	**378,661**

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, 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 obligations for compensation payments were reclassified to pensions in the current financial year.

The services not yet invoiced category principally relates to the provision and invoicing of CO_2 costs to an at-equity company. These items 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. Depending on their term, non-current provisions are discounted with discount rates of between 1.0 % and 3.8 %.

30. 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 2023 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 37,560 thousand were made to state pension systems in the 2022 financial year (previous year: Euro 33,734 thousand). Moreover, an amount of Euro 16,177 thousand was paid into defined contribution pension schemes (previous year: Euro 16,195 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 2022 are:

Parameters

	FY 2022	FY 2021
Discount rate	3.8 %	0.9 %
Future pay rises	2.5-3.0 %	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 2022**	FY 2021
Service cost	4,127	4,192
Interest expenses	1,082	614
	5,209	**4,806**

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 2022			30 September 2021
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	96,870	826	96,044	100,990	732	100,258
Current service cost	4,127	–	4,127	3,775	–	3,775
Retrospective service cost	–	–	–	418	–	418
Interest expenses (interest income)	1,082	–	1,082	614	–	614
Remeasurement						
(i) Income from plan assets (excluding amounts included in interest income from plan assets)	–	8	– 8	–	5	– 5
(ii) Actuarial gains/losses						
of which due to changes in financial assumptions	– 35,955	– 26	– 35,929	– 4,623	67	– 4,690
of which due to changes in demographic assumptions	–	–	–	–	–	–
of which due to changes in experience adjustments	502	–	502	– 1,479	–	– 1,479
Payments made to beneficiaries	– 3,233	–	– 3,233	– 2,825	–	– 2,825
Employer contributions	–	453	– 453	–	22	– 22
Reclassifications	13,249	–	13,249	–	–	–
Balance at 30 September	**76,642**	**1,261**	**75,381**	**96,870**	**826**	**96,044**

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 2022**	FY 2021
Present value of defined benefit obligation	76,642	96,870
Fair value of plan assets	1,261	826
Provisions recognised at 30 September	**75,381**	**96,044**

The plan assets mainly 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 2022**	FY 2021
Accumulated actuarial gains (+) and losses (-) recognised in equity at 1 October	– 20,720	– 24,323
Actuarial gains (+) and losses (-) recognised in equity	22,074	3,603
Accumulated actuarial gains (+) and losses (-) recognised in equity at 30 September	**1,354**	**– 20,720**

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 5,313 thousand are forecast for existing pension obligations in the 2023 financial year.

In the financial year, use was made of a discount rate appropriate to the expected weighted remaining term of 14 years.

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

Expected pension payments

Euro 000s	
2023	5,313
2024	3,885
2025	6,565
2026	10,676
2027	3,949
>2027	79,481
	109,869

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 6 %	Increase by 7 %
Future pay rises	0.5	No change	No change
Future pension increases	0.5	Increase by 2 %	Reduction by 2 %
Mortality	1 year	Increase by 3 %	–

31. Financial debt

Financial debt

Euro 000s	**30 September 2022** Non-current	Current	Total	30 September 2021 Non-current	Current	Total
Liabilities						
to banks	1,581,379	162,744	1,744,123	1,456,974	254,062	1,711,036
in connection with leases	125,463	14,748	140,211	132,971	15,630	148,601
to other majority shareholdings	–	719	719	–	697	697
to companies recognised at equity	–	1,301	1,301	–	1,581	1,581
to other shareholdings	–	900	900	–	1,500	1,500
Other financial debt	26,267	3,414	29,681	19,225	3,636	22,861
	1,733,109	**183,826**	**1,916,935**	**1,609,170**	**277,106**	**1,886,276**

Maturity in years

Euro 000s	**30 September 2022** < 1 year	1 - 5 years	> 5 years	30 September 2021 < 1 year	1 - 5 years	> 5 years
Liabilities						
to banks	162,744	703,137	878,242	254,062	669,969	787,005
in connection with leases	14,748	44,209	81,254	15,630	46,053	86,918
to other majority shareholdings, companies recognised at equity and other shareholdings	2,920	–	–	3,778	–	–
Other financial debt	3,414	14,524	11,743	3,636	8,001	11,224
	183,826	**761,870**	**971,239**	**277,106**	**724,023**	**885,147**

The fixed-rate liabilities to banks of Euro 1,290,250 thousand (previous year: Euro 1,184,151 thousand) have an average interest rate of 1.5 % (previous year: 1.8 %), while the floating-rate liabilities to banks of Euro 453,874 thousand (previous year: Euro 526,884 thousand) have an average interest rate of 2.4 % (previous year: 1.5 %). The average remaining period for which the interest rate remains fixed in the case of fixed-rate liabilities amounts to nine years (previous year: nine years). The floating-rate liabilities to banks are hedged.

At 30 September 2022, MVV had undrawn committed credit lines of Euro 1,417,087 thousand (previous year: Euro 1,194,929 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”.

32. 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

		30 September 2022			30 September 2021	
Euro 000s	**Non-current**	**Current**	**Total**	Non-current	Current	Total
Other financial liabilities						
Derivative financial instruments	3,428,029	13,177,746	16,605,775	1,124,653	7,732,791	8,857,444
Liabilities to employees	–	32,500	32,500	–	32,476	32,476
Customer credit balances	–	18,028	18,028	–	6,189	6,189
Interest liabilities	–	7,734	7,734	–	6,596	6,596
Liabilities for security deposits for energy trading transactions	–	1,453,276	1,453,276	–	821,734	821,734
Concession duties	–	2,938	2,938	–	3,443	3,443
Social security liabilities	–	1,086	1,086	–	799	799
Miscellaneous other financial liabilities	19,379	25,642	45,021	28,459	13,030	41,489
Other non-financial liabilities						
Contract liabilities for advance payments received	1,049	95,847	96,896	–	77,326	77,326
Contract liabilities for building cost grants	125,320	8,377	133,697	115,556	8,172	123,728
Other contract liabilities	10,573	14,529	25,102	11,569	28,630	40,199
Liabilities in connection with German Fuel Emissions Trading Act (BEHG)	502	23,348	23,850	707	16,861	17,568
Liabilities for other taxes	–	86,409	86,409	–	55,918	55,918
Miscellaneous other non-financial liabilities	5,637	1,908	7,545	5,993	1,451	7,444
	3,590,489	**14,949,368**	**18,539,857**	**1,286,937**	**8,805,416**	**10,092,353**

Other liabilities

		30 September 2022			30 September 2021	
Euro 000s	**Non-current**	**Current**	**Total**	Non-current	Current	Total
Liabilities	3,590,489	14,853,521	18,444,010	1,286,937	8,732,717	10,019,654
of which to companies recognised at equity	2,490	5,951	8,441	1,187	44,430	45,617
Advance payments received for orders	–	95,847	95,847	–	72,699	72,699
	3,590,489	**14,949,368**	**18,539,857**	**1,286,937**	**8,805,416**	**10,092,353**

The value of derivatives financial instruments rose sharply compared with the previous year, with this being due in particular to the significant changes in market prices and resultant rise in the fair values of energy trading transactions recognised under IFRS 9. 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 **36**.

Derivative financial instruments (other financial liabilities)

Euro 000s	**30 September 2022**			30 September 2021		
	Non-current	**Current**	**Total**	Non-current	Current	Total
Derivative financial instruments	3,428,029	13,177,746	16,605,775	1,124,653	7,732,791	8,857,444
of which not involving IFRS 9 hedges	2,200,297	10,210,293	12,410,590	743,090	5,962,443	6,705,533
of which involving IFRS 9 hedges	1,227,732	2,967,453	4,195,185	381,563	1,770,348	2,151,911

To reduce the counterparty risk involved in highly fluctuating fair values of energy trading derivatives, security deposits (margins) are exchanged on the energy exchanges, such as EEX or ICE. Liabilities of Euro 1,453,276 thousand were recognised for security deposits for energy trading transactions as of the balance sheet date on 30 September 2022 (previous year: Euro 821,734 thousand).

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

As of 30 September 2022, non-financial liabilities for other taxes chiefly include value added and energy 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 2022**	FY 2021
Balance at 1 October	241,253	211,050
Balance at 30 September	**255,694**	**241,253**

Other contract liabilities showed a year-on-year decrease as of 30 September 2022. This chiefly resulted from the virtual completion of projects in the field of planning and building photovoltaics system.

MVV expects that, of the transaction price allocated to unsatisfied performance obligations as of 30 September 2022, an amount of Euro 118,752 thousand (previous year: Euro 114,128 thousand) will be recognised as revenues in the next reporting period. The remaining amount of Euro 136,942 thousand (previous year: Euro 127,125 thousand) will be recognised in subsequent financial years.

33. Trade payables

Trade payables

Euro 000s	**30 Sep 2022**	30 Sep 2021
Trade payables	507,216	383,286
to other majority shareholdings	263	153
to companies recognised at equity	7,644	14,905
to other shareholdings	242	–

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.

34. Income tax liabilities and deferred taxes

This line item includes income tax liabilities of Euro 39,384 thousand (previous year: Euro 36,011 thousand).

The deferred taxes reported for the 2022 financial year relate to the following items:

Deferred taxes

	30 September 2022		30 September 2021	
Euro 000s	**Deferred tax assets**	**Deferred tax liabilities**	Deferred tax assets	Deferred tax liabilities
Intangible assets	8,690	– 10,734	2,799	– 12,400
Property, plant and equipment	27,940	– 196,328	20,727	– 179,475
Right-of-use assets	–	– 42,641	–	– 41,386
Inventories	19,530	– 8,105	9,255	– 4,688
Special item	–	– 1,542	–	– 12,516
Other assets and positive fair values of derivatives	25,376	– 6,625,713	15,466	– 3,178,280
Provisions for pensions	7,016	–	17,158	–
Non-current other provisions	15,306	–	22,545	–
Current other provisions	11,417	– 24,193	9,996	– 24,566
Liabilities and negative fair values of derivatives	6,809,562	– 508,160	3,125,029	– 25,885
Lease liabilities	44,640	–	39,580	–
Losses carried forward	36,015	–	46,063	–
Deferred taxes (gross)	7,005,492	– 7,417,416	3,308,618	– 3,479,196
Netting	– 6,890,273	6,890,273	– 3,204,749	3,204,749
Deferred taxes (net)	**115,219**	**– 527,143**	**103,869**	**– 274,447**

Of the (net) deferred taxes presented above, Euro 26,741 thousand (previous year: Euro 18,806 thousand) relate to non-current deferred tax assets and Euro 133,194 thousand (previous year: Euro 60,408 thousand) to non-current deferred tax liabilities.

No deferred tax assets have been recognised for corporate income tax loss carryovers of Euro 62,131 thousand (previous year: Euro 71,504 thousand), trade tax loss carryovers of Euro 42,845 thousand (previous year: Euro 52,359 thousand) or foreign loss carryovers of Euro 186,152 thousand (previous year: Euro 114,369 thousand).

For temporary differences of Euro 10,505 thousand at shareholdings (previous year: Euro 10,220 thousand), no deferred tax liabilities have been stated for an amount of Euro 3,183 thousand (previous year: Euro 3,097 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 2,965 thousand (previous year: Euro 5,667 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 the realisation of the assets is exclusively dependent on the generation of future profits. Such realisation is chiefly attributable to restructuring measures. Any surplus of deferred tax assets from temporary differences is only recognised when it is recoverable.

Deferred taxes of Euro 272,173 thousand (debit balance) were recognised directly in other comprehensive income as part of group equity in the 2022 financial year (previous year: credit balance of Euro 44,851 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 2022		30 September 2021	
Euro 000s	**Income tax**	**Gross**	Income tax	Gross
Actuarial gains and losses	– 8,513	35,426	– 2,102	7,852
Share of total comprehensive income attributable to companies recognised at equity	–	3,634	–	– 360
Items that will not be reclassified to profit or loss	**– 8,513**	**39,060**	**– 2,102**	**7,492**
Cash flow hedges/hedging costs	– 311,511	1,057,407	21,968	– 66,560
Currency translation differences	–	– 2,476	–	12,022
Share of total comprehensive income attributable to companies recognised at equity	–	– 898	–	– 369
Items that will be reclassified to profit or loss	**– 311,511**	**1,054,033**	**21,968**	**– 54,907**

35. 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 7.4 million for warranty agreements (previous year: Euro 7.0 million). It has obligations of this nature in the form of guarantees amounting to Euro 9.5 million (previous year: Euro 9.2 million). As in the previous year, no collateral has been provided for third-party liabilities.

MVV has purchase commitments of Euro 132.4 million in connection with investment orders placed and financial obligations (previous year: Euro 116.1 million).

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

36. 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 2022	30 Sep 2021
Assets			
Financial assets			
of which other shareholdings	Fair value through profit or loss	6,104	5,909
	Not applicable	2,494	2,162
of which loans not involving finance leases	Amortised cost	8,512	8,505
of which loans involving finance leases	Not applicable	53,037	65,279
of which securities	Fair value through profit or loss	204	196
Trade receivables < 1 year	Amortised cost	554,103	376,015
Other assets			
of which derivatives outside hedge accounting	Fair value through profit or loss	12,314,889	6,966,862
of which derivatives within hedge accounting	Not applicable	5,112,000	2,030,833
of which other financial assets	Amortised cost	56,295	36,721
of which contract assets	Not applicable	38,517	94,387
Cash and cash equivalents	Amortised cost	1,884,998	1,258,178
		20,031,153	**10,845,047**
Liabilities			
Financial debt			–
of which financial debt involving leases	Not applicable	140,211	148,601
of which other financial debt	Amortised cost	1,776,724	1,737,675
Trade payables <1 year	Amortised cost	507,216	383,286
Other liabilities			
of which derivatives outside hedge accounting	Fair value through profit or loss	12,410,590	6,705,533
of which derivatives within hedge accounting	Not applicable	4,195,185	2,151,911
of which other financial liabilities	Amortised cost	1,544,201	886,520
	Fair value through profit or loss	16,382	26,206
		20,590,509	**12,039,732**

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. Variances relate to loans in connection with finance leases and other financial debt. The carrying amount of loans in connection with finance leases amounts to Euro 53,037 thousand, while the fair value amounts to Euro 60,328 thousand. The carrying amount of other financial debt amounts to Euro 1,776,724 thousand (previous year: Euro 1,737,675 thousand) and the fair value amounts to Euro 1,624,158 thousand (previous year: Euro 1,780,290 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 2022

Euro 000s	**Level 1**	**Level 2**	**Level 3**
Financial assets			
Other shareholdings	–	–	6,104
Securities	204	–	–
Derivatives outside hedge accounting	9,157,539	3,138,469	18,881
Derivatives within hedge accounting	3,698,897	1,407,413	5,690
Other financial assets	–	–	–
Financial liabilities			
Derivatives outside hedge accounting	9,271,027	3,138,312	1,251
Derivatives within hedge accounting	1,551,195	2,643,517	473
Other financial liabilities	–	–	16,382

Fair value hierarchy at 30 September 2021

Euro 000s	Level 1	Level 2	Level 3
Financial assets			
Other shareholdings	–	–	5,909
Securities	196	–	–
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

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 discount rate valid 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.

Derivatives outside hedge accounting in Level 3 involve commodity derivatives and interest derivatives. Where no market prices are available, the fair value 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 positive fair values mainly relate to a power purchase agreement (PPA) involving a long-term electricity supply contract. The fair value of this derivative amounts to Euro 18,750 thousand. Any change in the market price by 10 % upwards or downwards would increase or reduce the fair value by Euro 1,875 thousand respectively.

The derivatives of Euro 5,217 thousand in Level 3 hedge accounting mainly include interest swaps with floor (previous year: Euro 3,381 thousand). The fair value of these derivatives amounts to Euro 5,217 thousand (previous year: Euro 3,381 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 4 thousand (previous year: Euro 36 thousand) or reduce it by Euro 3 thousand (previous year: Euro 35 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 2021	Gains/losses in income statement	Gains/losses in OCI	Additions/ disposals	Balance at 30 Sep 2022
Financial assets					
Other shareholdings	5,909	–	–	195	6,104
Derivatives outside hedge accounting	3,459	16,758	–	– 1,336	18,881
Derivatives within hedge accounting	11	–	5,679	–	5,690
Financial liabilities					
Derivatives outside hedge accounting	518	1,202	–	– 469	1,251
Derivatives within hedge accounting	3,381	–	– 1,370	– 1,538	473
Other financial liabilities	26,206	– 7,008	–	– 2,816	16,382

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
Other financial assets	–	–	–	–	–
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

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 2022
Other operating income and expenses	15,552	15,786
Financial result	7,012	7,012
Other comprehensive income	7,049	7,037
	29,613	**29,835**

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**

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 2022

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	8,512	–	8,512	–	–	8,512
Securities	204	–	204	–	–	204
Trade receivables < 1 year	772,438	– 218,335	554,103	–	–	554,103
Derivative financial instruments	17,426,889	–	17,426,889	– 14,466,876	– 2,425,314	534,699
Other financial assets	56,295	–	56,295	–	–	56,295
Cash and cash equivalents	1,884,998	–	1,884,998	–	–	1,884,998
	20,149,336	**– 218,335**	**19,931,001**	**– 14,466,876**	**– 2,425,314**	**3,038,811**

Netting of financial liabilities at 30 September 2022

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	1,776,724	–	1,776,724	258,581	1,951	1,516,192
Trade payables < 1 year	695,180	187,964	507,216	–	–	507,216
Derivative financial instruments	16,605,775	–	16,605,775	14,466,876	1,008,220	1,130,679
Other financial liabilities	1,590,954	30,371	1,560,583	–	–	1,560,583
	20,668,633	**218,335**	**20,450,298**	**14,725,457**	**1,010,171**	**4,714,670**

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: Financial instruments	Related amounts not netted in balance sheet: Cash collateral received/granted	Net amount
Loans not involving finance leases	8,505	–	8,505	–	–	8,505
Securities	196	–	196	–	–	196
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: Financial instruments	Related amounts not netted in balance sheet: Cash collateral received/granted	Net amount
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**

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 2022	FY 2021
Financial assets and liabilities measured at fair value through profit or loss	124,204	325,628
of which mandatorily measured at fair value	124,204	325,628
Financial assets measured at amortised cost	– 20,409	– 8,465

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 comprise write-downs.

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

Total interest income and expenses

Euro 000s	FY 2022	FY 2021
Total interest income	8,526	8,681
Total interest expenses	62,941	46,585

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 process is laid down 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 market 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 combined 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 energy 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 measured at amortised cost. For financial instruments that are measured 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 instrument ("lifetime expected credit losses"). To determine loss allowances, MVV mostly works with a provision matrix based on historic default rates and with prospective and market data-based information, such as knowledge of economic developments at customers and macroeconomic data.

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

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

Loss allowances for loans and other financial assets are determined 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 allowances (simplified approach)

Euro 000s	FY 2022	FY 2021
Balance at 1 October	21,555	19,034
Net balance of additions/reversals	18,220	6,586
Retirements	– 8,068	– 4,615
Change in scope of consolidation	– 12	322
Other	– 144	228
Balance at 30 September	**31,551**	**21,555**

Of the above loss allowance, Euro 30,551 thousand is attributable to trade receivables (previous year: Euro 20,573 thousand), Euro 709 thousand to contract assets (previous year: Euro 582 thousand) and Euro 291 thousand to lease receivables (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 2022

Euro 000s	Gross carrying amount	Loss allowance	Credit default rate
not overdue	462,672	3,495	0.8%
overdue by			
< 89 days	29,381	3,086	10.5%
90 to 179 days	6,535	1,807	27.7%
180 to 359 days	4,925	3,146	63.9%
360 to 719 days	10,178	8,484	83.4%
> 719 days	11,695	11,384	97.3%
	525,386	**31,402**	

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**	

Impairments of Euro 149 thousand relate to assets whose loss allowances were determined on the basis of an internal or external rating (previous year: Euro 145 thousand).

Due to retirements of financial instruments, the loss allowances recognised for trade receivables changed by Euro 8,068 thousand in the 2022 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 2022

	12-month expected credit loss	**Lifetime expected credit loss**		**Total**
Euro 000s	**Level 1**	**Level 2**	**Level 3**	
Balance at 1 Oct 2021	10,732	–	384	11,116
Additions	2,232	–	–	2,232
Reversals	– 33	–	– 10	– 43
Retirements	– 8	–	–	– 8
Reclassifications	–	–	–	–
Other	–	–	–	–
Balance at 30 Sep 2022	**12,923**	**–**	**374**	**13,297**

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 2019	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**

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

Default risk (general approach) at 30 September 2022

Euro 000s	12-month expected credit loss Level 1	Lifetime expected credit loss Level 2	Level 3	Total
Extremely secure contract partner	13,665	–	–	13,665
Secure contract partner	18,140	–	875	19,015
Acceptable contract partner	5,012	–	–	5,012
Speculative contract partner	–	–	–	–
Balance at 30 Sep 2022	**36,817**	**–**	**875**	**37,692**

Default risk (general approach) at 30 September 2021

Euro 000s	12-month expected credit loss Level 1	Lifetime expected credit loss Level 2	Level 3	Total
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**

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, wholly-owned 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 financing 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 complied with as of the balance sheet date on 30 September 2022.

Further information about financial debt, its maturities and committed credit lines can be found in Note **31.**

Items of security have been provided to banks to limit their risks in connection with loans granted to group companies. These are subdivided into receivables and cash and cash equivalents with a total amount of Euro 9,521 thousand (previous year: Euro 2,282 thousand) and interests in subsidiaries amounting to Euro 5,865 thousand (previous year: Euro 11,842 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 2022			30 September 2021		
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	190,734	780,175	941,442	276,566	732,761	835,101
Lease liabilities	16,211	49,115	91,133	–	59,036	101,831
Trade payables	507,217	952	1,877	383,286	961	2,840
Other financial debt	7,008	17,223	19,838	7,624	9,543	16,236
Other financial liabilities	1,558,728	7,521	19,601	913,903	8,392	27,841
Derivative financial liabilities	13,177,212	3,425,217	–	7,716,265	1,115,275	–
	15,457,110	**4,280,203**	**1,073,891**	**9,297,644**	**1,925,968**	**983,849**

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 2022 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 676 thousand/Euro 1,018 thousand (previous year: Euro 1,324 thousand/Euro 1,407 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 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 at all times 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 managed 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 energy trading transactions recognised as derivatives 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 2022, this would have increased/decreased annual net income by Euro 201,866 thousand/Euro 194,381 thousand (previous year: Euro 55,828 thousand/Euro 2,063 thousand). Equity as of the same reporting date would have increased/decreased by Euro 152,504 thousand/ Euro – 91,906 thousand (previous year: Euro 43,524 thousand/Euro – 7,682 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 in the risk management system, aggregated and monitored by the central group controlling function.

Derivative financial instruments and hedging relationships

For commodities, MVV deploys forwards, futures and swaps to hedge its commodity, interest rate and currency risks. 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 using the dollar offset method to quantify the effectiveness or ineffectiveness.

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

Nominal volumes by maturity

Euro 000s	< 1 year	1 - 5 years	> 5 years	< 1 year	1 - 5 years	> 5 years
	30 September 2022			30 September 2021		
Interest derivatives	21,496	151,464	250,667	154,194	202,762	169,371
Commodity derivatives	15,872,808	5,608,535	4,084	11,529,208	3,664,495	4,311
Currency derivatives	83,927	85,767	–	59,643	1,039	–
	15,978,231	**5,845,766**	**254,751**	**11,743,045**	**3,868,296**	**173,682**

The commodity derivatives can be broken down as follows:

Commodity derivatives

Euro 000s	**30 September 2022** Nominal volumes	Fair values	30 September 2021 Nominal volumes	Fair values
Commodity derivatives				
Electricity	13,576,246	– 185,559	10,808,649	– 266,663
Coal	364,084	245,698	131,427	103,649
Gas	4,338,897	645,181	2,029,159	164,627
CO_2 rights	3,203,379	78,893	2,226,882	155,967
Other	2,821	– 1,583	1,897	– 479
	21,485,427	**782,630**	**15,198,014**	**157,101**
Commodity derivatives				
Futures	21,232,115	536,933	15,068,548	53,452
Swaps	253,312	245,697	129,466	103,649
	21,485,427	**782,630**	**15,198,014**	**157,101**

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. No account has been taken of energy trading contracts not recognised as commodity derivatives.

The counterparty risks are analysed by reference to external information and ratings and classified by analogy with the rating categories at Standard & Poor's and/or Moody's

Counterparty risk is based on replacement and sales risks resulting from the fair values of the respective position with the individual trading partner as of the balance sheet date. The calculation takes due account of the netting options agreed with the trading partner in master agreements. If netting has been agreed, the positive and negative fair values are netted for each trading partner. Where no netting agreement is available, only the positive fair values are accounted for.

Counterparty risk at 30 September 2022

Euro 000s	**Total**		**of which < 1 year**		**of which > 1 year**	
Counterparty rating [1]	**Nominal value**	**Counterparty risk**	**Nominal value**	**Counterparty risk**	**Nominal value**	**Counterparty risk**
Without counterparty risk	9,871,847	13,193,861	7,193,442	9,881,788	2,678,405	3,312,073
AAA and Aaa to AA- and Aa3	1,132,604	4,011,286	836,705	3,379,216	295,899	632,070
A+ and A1 to A- and A3	509,161	358,516	89,381	224,541	419,780	133,975
BBB+ and Baa1 to BBB- and Baa3	167,962	944,276	126,016	728,199	41,946	216,077
BB+ and Ba1 to BB- and Ba3	6,466	60,283	5,615	53,312	851	6,971
	11,688,040	**18,568,222**	**8,251,159**	**14,267,056**	**3,436,881**	**4,301,166**

1 By analogy with rating categories at Standard & Poor's and/or Moody's

Counterparty risk at 30 September 2021

Euro 000s	Total		of which < 1 year		of which > 1 year	
Counterparty rating [1]	Nominal value	Counterparty risk	Nominal value	Counterparty risk	Nominal value	Counterparty risk
Without counterparty risk	4,469,022	4,710,482	3,402,100	4,013,372	1,066,922	697,110
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
	7,131,301	**8,552,796**	**5,387,717**	**7,322,650**	**1,743,584**	**1,230,146**

1 By analogy with rating categories at Standard & Poor's and/or Moody's

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 11 years as of 30 September 2022 (previous year: 12 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 0.90 % to 4.20 % to hedge against interest rate risks in its financing activities. The average hedged prices for commodity price risks range from Euro 145.61 to Euro 563.55 in the electricity business, Euro 27.25 to Euro 189.97 in the gas business and Euro 54.83 to Euro 64.74 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 2022

	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	5,055,409	4,174,227	4,869,142	491,034	491,034
Interest rate risk	53,472	48	423,627	63,825	64,749
	5,108,881	**4,174,275**	**5,292,769**	**554,859**	**555,783**

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**

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 2022

Euro 000s	**Hedging gains (+)/ losses (-) recognised in OCI**	**Ineffective -ness recognised through profit or loss**	**Reclassi-fication through profit or loss**
Commodity price risk	491,034	–	– 494,984
Interest rate risk	63,825	–	– 7,333
	554,859	**–**	**– 502,317**

Impact of cash flow hedges on total comprehensive income at 30 Sep 2021

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

Cases of ineffectiveness 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 3,298,425 thousand and of Euro 2,803,441 thousand were reclassified through profit or loss and recognised under sales and cost of materials respectively in the 2022 financial year (previous year: Euro 382,198 thousand and Euro 364,009 thousand respectively). For interest rate hedges, an amount of Euro 7,333 thousand was reclassified through profit or loss and recognised under financing expenses (previous year: Euro 10,299 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 2022**	FY 2021
Balance at 1 October	– 121,001	– 54,440
Unrealised change in reserve for hedging costs		
Interest rate hedges	231	310
Unrealised change in cash flow hedge reserve		
Commodity hedges	491,034	– 107,368
Interest rate hedges	63,825	12,009
Reclassification through profit or loss		
Commodity hedges	494,984	18,189
Interest rate hedges	7,333	10,299
Balance at 30 September	**936,406**	**– 121,001**

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 159,691 thousand. The hedging instrument deployed involves a bank liability in British pounds. Furthermore, fair value hedges are deployed to hedge the electricity price risk at proprietary generation plants. The hedging instrument deployed involves energy trading contracts.

As of 30 September 2022, existing hedged items were included in fair value hedges with terms of up to 10 years (previous year: 11 years).

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

Hedging relationships involving fair value hedges at 30 September 2022

Euro 000s	Carrying amount of hedging instrument – Other financial assets	Carrying amount of hedging instrument – Other financial liabilities	Carrying amount of hedging instrument – Other financial debt	Nominal volume	Changes in fair value of hedging instrument	Changes in fair value of hedged item
Currency risk	–	–	159,691	159,691	– 4,331	– 4,393
Commodity price risk	3,119	20,910	–	37,037	– 17,791	– 13,819
	3,119	**20,910**	**159,691**	**196,728**	**– 22,122**	**– 18,212**

Hedging relationships involving fair value hedges at 30 September 2021

Euro 000s	Carrying amount of hedging instrument – Other financial assets	Carrying amount of hedging instrument – Other financial liabilities	Carrying amount of hedging instrument – Other financial debt	Nominal volume	Changes in fair value of hedging instrument	Changes in fair value of hedged item
Currency risk	–	–	179,017	179,017	10,827	10,819
	–	**–**	**179,017**	**179,017**	**10,827**	**10,819**

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 2022

Euro 000s	Ineffectiveness recognised through profit or loss
Currency risk	62
Commodity price risk	– 3,972
	– 3,910

Impact of fair value hedges on total comprehensive income at 30 Sep 2021

Euro 000s	Ineffectiveness recognised through profit or loss
Currency risk	8
	8

In the 2022 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.

In the 2022 financial year, the ineffectiveness for commodities was recognised in other operating expenses.

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.

37. Segment reporting

Segment report from 1 October 2021 to 30 September 2022

Euro 000s	Adjusted external sales excluding energy taxes	Intercompany sales excluding energy taxes	Scheduled depreciation and amortisation	Impairment losses
Customer Solutions	3,106,292	435,029	18,240	–
New Energies	579,280	308,880	91,309	339
Supply Reliability	387,430	845,550	74,661	264
Strategic Investments	125,405	27,763	11,742	–
Other Activities	1,090	43,193	14,707	–
Consolidation	–	– 1,660,415		–
	4,199,497	**–**	**210,659**	**603**

Euro 000s	Material non-cash income and expenses	Adjusted EBIT	Income from companies recognised at equity	Investments
Customer Solutions	– 7,077	135,552	40,504	57,807
New Energies	18,545	149,841	5,343	109,264
Supply Reliability	8,454	37,348	7,924	134,600
Strategic Investments	2,251	17,996	10,488	11,370
Other Activities	2,942	12,414	254	21,568
Consolidation	–	–	–	–
	25,115	**353,151**	**64,513**	**334,609**

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**

External reporting is based on the internal management structure, thus complying with the management approach pursuant to IFRS 8. Units are groups 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 field 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 service 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 share 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 is basically aligned to payments for investments in the period under report as presented in the cash flow statement. Alongside payments for intangible assets, property, plant and equipment (adjusted for dismantling obligations) and investment properties, in the management perspective investments also include payments for the acquisition of fully consolidated companies and other business units and payments for other financial assets. In this concept, investments exclude additions to receivables for finance leases reported in other financial assets but rather include additions to unfinished products in connection with finance leases. Further items not included in this concept of investments are additions to securities and loans.

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 heat 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 2021 to 30 Sep 2022**	1 Oct 2020 to 30 Sep 2021	+/– change
EBIT as per income statement	34,454	529,668	– 495,214
Measurement and realisation effects for derivatives	315,329	– 255,415	+ 570,744
Structural adjustment for part-time early retirement	–	1	– 1
Interest income from finance leases	3,368	3,900	– 532
Adjusted EBIT	**353,151**	**278,154**	**+ 74,997**

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

Euro 000s	**1 Oct 2021 to 30 Sep 2022**	1 Oct 2020 to 30 Sep 2021	+/– change
Sales after electricity and natural gas taxes	5,923,588	4,233,788	+ 1,689,800
Realisation effects for derivatives	– 1,724,091	– 102,313	– 1,621,778
Adjusted sales after electricity and natural gas taxes	**4,199,497**	**4,131,475**	**+ 68,022**

Of adjusted segment sales with external customers, 92.6 % were generated in Germany (previous year: 91.8 %). 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.

38. 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.

Based on lower earnings before taxes (EBT) compared with the previous year, the elimination of non-cash and non-operating income and expenses led the cash flow before working capital and taxes to increase by Euro 63 million. The largest item in this elimination related to the non-cash-effective measurement of derivatives pursuant to IFRS 9. By contrast, this cash flow figure was negatively affected by the reclassification of non-operating income from the sale of fully consolidated and at-equity companies to the cash flow from investing activities.

The cash flow from operating activities fell year-on-year by Euro 251 million. This resulted above all from lower inflows of security deposits for counterparty default risk (margins). From an operating perspective, factors reducing the cash flow more significantly than in the previous year chiefly included the more marked rise in trade receivables due to the higher level of wholesale prices on energy markets and the higher increase in inventories. These factors were countered, with a correspondingly positive impact, in particular by the invoicing of project development work in the Juwi subgroup and the more marked rise in trade payables due to the higher level of wholesale prices on energy markets.

The development in the cash flow from investing activities was mainly shaped by higher proceeds from the sale of fully consolidated and at-equity companies in the period under report. These were countered by higher payments for the acquisition of companies in the current period – especially Avantag Energy S.a r.l. and Philipp Rass Energy GmbH – as well as by higher payments for investments in non-current assets. Overall, the cash flow from investing activities decreased year-on-year by Euro 70 million.

The cash flow from financing activities fell by Euro 100 million compared with the previous year, a development which mainly resulted from a lower volume of net new borrowing.

At 30 September 2022, MVV posted cash and cash equivalents of Euro 1,885 million (30 September 2021: Euro 1,258 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 2021	Cash-effective changes	Non-cash-effective changes: Change in scope of consolidation	Non-cash-effective changes: Changes in exchange rates	Non-cash-effective changes: Additions to leases	Non-cash-effective changes: Other adjustments	30 Sep 2022
Liabilities to banks	1,711,036	43,573	– 3,390	– 7,096	–	–	1,744,123
Lease liabilities	148,601	– 15,805	– 9,872	– 5	17,520	– 228	140,211
Other financial debt	26,639	5,960	–	2	–	–	32,601
	1,886,276	**33,728**	**– 13,262**	**– 7,099**	**17,520**	**– 228**	**1,916,935**

39. 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 heat 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 19,893 thousand (previous year: Euro 19,958 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

Euro 000s	Goods and services provided: Income 1 Oct 2021 to 30 Sep 2022	Goods and services provided: Income 1 Oct 2020 to 30 Sep 2021	Goods and services provided: Expenses 1 Oct 2021 to 30 Sep 2022	Goods and services provided: Expenses 1 Oct 2020 to 30 Sep 2021	Receivables 30 Sep 2022	Receivables 30 Sep 2021	Liabilities 30 Sep 2022	Liabilities 30 Sep 2021
City of Mannheim	9,843	9,302	24,037	25,674	507	885	7,786	4,147
Abfallwirtschaft Mannheim	11,649	9,912	1,722	1,515	1,562	1,617	6,061	422
GBG Mannheimer Wohnungsbaugesellschaft mbH	14,587	13,839	243	784	593	98	40	–
m:con - mannheim:congress GmbH	4,027	3,724	212	197	4,660	5,087	265	277
MKB Mannheimer Kommunalbeteiligungen GmbH	8	85	–	–	–	3	–	–
MV Mannheimer Verkehr GmbH	7	33	19	–	–	–	–	–
Rhein-Neckar-Verkehr GmbH	7,049	7,543	–	–	209	40	1,186	491
Stadtentwässerung Mannheim	1,489	2,227	336	304	56	240	15	–
Associates	6,207	5,313	1,281	1,277	927	1,568	1,628	1,842
Joint ventures	200,928	175,785	441,602	214,207	69,526	45,285	15,757	60,261
Other related parties	25,627	22,019	8,594	5,892	6,634	7,366	2,554	2,776
	281,421	**249,782**	**478,046**	**249,850**	**84,674**	**62,189**	**35,292**	**70,216**

The income and expenses with other related parties include income of Euro 43 thousand (previous year: Euro 18 thousand) and expenses of Euro 336 thousand (previous year: Euro 362 thousand) for goods and services provided to management staff performing key functions. There are no receivables or liabilities in this respect.

Pursuant to IAS 24, related parties include management staff performing key functions. These include the Executive and Supervisory Boards of MVV Energie AG.

Customer contracts concerning the supply of electricity, gas, water, district heat and energy-related services have been concluded between MVV Energie AG and members of its Executive and Supervisory Boards. 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 2022. 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 2022. 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 and Supervisory Boards.

Total remuneration for management staff performing key functions amounted to Euro 5,868 thousand in the year under report (previous year: Euro 6,002 thousand). Of this total, Euro 4,076 thousand related to short-term benefits (previous year: Euro 3,650 thousand) while Euro 1,792 thousand involved post-employment benefits (previous year: Euro 2,352 thousand).

In the year under report, the Executive Board received short-term benefits of Euro 3,510 thousand (previous year: Euro 3,109 thousand). Short-term benefits include fixed remuneration of Euro 1,727 thousand (previous year: Euro 1,528 thousand), fringe benefits of Euro 141 thousand (previous year: Euro 125 thousand) and other remuneration, which includes remuneration paid for board positions held at subsidiaries and shareholdings, of Euro 36 thousand (previous year: Euro 37 thousand), as well as performance-related remuneration totalling Euro 1,606 thousand (previous year: Euro 1,419 thousand). This variable remuneration paid to Executive Board members comprises the annual bonus and sustainability bonuses 1 and 2. Compared with the annual bonus, the sustainability bonuses account for the predominant share of variable remuneration paid to the Executive Board members of MVV Energie AG.

The annual bonus is based on the adjusted EBIT achieved by MVV in the respective past financial year. Sustainability bonuses 1 and 2 are linked to the long-term increase in the company's value and are based on the ROCE and WACC key figures. Sustainability bonus 1 is paid if the bonus-relevant ROCE exceeds the minimum return specified by the Supervisory Board each year over a three-year period. Sustainability bonus 2 is granted if the bonus-relevant ROCE (as an average for the past three years) exceeds the costs of capital (also as an average for the past three years). The bonus components are paid out each year. No more far-reaching long-term remuneration targets have been agreed. There are no share-based remuneration agreements or comparable instruments.

Pension provisions of Euro 8,097 thousand were recognised as of 30 September 2022 for the members of the Executive Board (previous year: Euro 12,278 thousand). The service cost for post-employment benefits amounts to Euro 1,792 thousand (previous year: Euro 2,352 thousand).

Active Supervisory Board members were remunerated as follows:

Supervisory Board remuneration

Euro 000s	**FY 2022**	FY 2021
Fixed remuneration (including meeting allowances)	566	541

Former members of the Executive Board received benefits of Euro 755 thousand in the year under report (previous year: Euro 725 thousand). Provisions totalling Euro 13,076 thousand have been stated for pension obligations towards former Executive Board members (previous year: Euro 18,310 thousand). A total of Euro 161 thousand was allocated to this item in the year under report (previous year: Euro 122 thousand).

40. MVV's shareholdings

List of MVV's shareholdings at 30 September 2022

	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 (previously: Zschau GmbH)	Mannheim	Germany	100.00	4
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	4
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 Bestandsanlagen GmbH	Wörrstadt	Germany	100.00	4
JUWI 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 190 GmbH & Co. KG	Wörrstadt	Germany	100.00	
juwi Wind Germany 203 GmbH & Co. KG	Wörrstadt	Germany	100.00	
juwi Wind Germany 213 GmbH & Co. KG	Wörrstadt	Germany	100.00	
juwi Wind Germany 219 GmbH & Co. KG	Wörrstadt	Germany	100.00	
juwi Wind Germany 223 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	
MVV Alpha drei GmbH	Mannheim	Germany	100.00	4
MVV Alpha eins GmbH (previously: beegy GmbH)	Mannheim	Germany	100.00	
MVV Alpha fünfzehn GmbH	Mannheim	Germany	100.00	4
MVV Biogas GmbH (previously: MVV Biogas Dresden GmbH)	Mannheim	Germany	100.00	
MVV Biomethan GmbH	Mannheim (dom.: Wanzleben-Börde)	Germany	100.00	4

List of MVV's shareholdings at 30 September 2022

	Town/city	Country	Share of capital %[1]	Footnotes
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 Grüne Wärme 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	100.00	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
New Breeze GmbH	Wörrstadt	Germany	100.00	
Philipp Rass Energy GmbH	Trier	Germany	100.00	5
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	

List of MVV's shareholdings at 30 September 2022	Town/city	Country	Share of capital % [1]	Footnotes
Fully consolidated subsidiaries				
Associates (international)				
AVANTAG Energy s.à r.l.	Wecker	Luxembourg	100.00	5
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 Development 02 Srl	Verona	Italy	100.00	
juwi Development 08 Srl	Verona	Italy	100.00	
juwi Energie Rinnovabili Srl	Verona	Italy	100.00	
juwi Energy Services (Pty) Ltd.	Cape Town	South Africa	80.00	
juwi Hellas Renewable Energy Sources Single Member S.A.	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	
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 2022	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	
ČESKOLIPSKÁ 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	
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 192 GmbH & Co. KG	Wörrstadt	Germany	100.00	
juwi Wind Germany 197 GmbH & Co. KG	Wörrstadt	Germany	100.00	
juwi Wind Germany 200 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 214 GmbH & Co. KG	Wörrstadt	Germany	100.00	
juwi Wind Germany 218 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 224 GmbH & Co. KG	Wörrstadt	Germany	100.00	
juwi Wind Germany 225 GmbH & Co. KG	Wörrstadt	Germany	100.00	
juwi Wind Germany 226 GmbH & Co. KG	Wörrstadt	Germany	100.00	
juwi Wind Germany 227 GmbH & Co. KG	Wörrstadt	Germany	100.00	
juwi Wind Germany 228 GmbH & Co. KG	Wörrstadt	Germany	100.00	
juwi Wind Germany 229 GmbH & Co. KG	Wörrstadt	Germany	100.00	
juwi Wind Germany 230 GmbH & Co. KG	Wörrstadt	Germany	100.00	
juwi Wind Germany 231 GmbH & Co. KG	Wörrstadt	Germany	100.00	
juwi Wind Germany 232 GmbH & Co. KG	Wörrstadt	Germany	100.00	5
juwi Wind Germany 233 GmbH & Co. KG	Wörrstadt	Germany	100.00	5
juwi Wind Germany 234 GmbH & Co. KG	Wörrstadt	Germany	100.00	5
juwi Wind Germany 235 GmbH & Co. KG	Wörrstadt	Germany	100.00	5
juwi Wind Germany 236 GmbH & Co. KG	Wörrstadt	Germany	100.00	5
juwi Wind Germany 237 GmbH & Co. KG	Wörrstadt	Germany	100.00	5
juwi Wind Germany 238 GmbH & Co. KG	Wörrstadt	Germany	100.00	5
juwi Wind Germany 239 GmbH & Co. KG	Wörrstadt	Germany	100.00	5
juwi Wind Germany 240 GmbH & Co. KG	Wörrstadt	Germany	100.00	5
juwi Wind Germany 241 GmbH & Co. KG	Wörrstadt	Germany	100.00	5
luminatis Deutschland GmbH	Landau in der Pfalz	Germany	100.00	

List of MVV's shareholdings at 30 September 2022

	Town/city	Country	Share of capital % [1]	Footnotes
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	
Axial Basin Solar LLC	Delaware	USA	100.00	
Baca Solar LLC	Delaware	USA	100.00	
Belviworx (Pty) Ltd.	Cape Town	South Africa	100.00	
Bench Solar LLC	Delaware	USA	100.00	
Blue Creek Solar LLC	Delaware	USA	100.00	
Boxelder Creek Solar LLC	Delaware	USA	100.00	5
Cache Valley Solar LLC	Delaware	USA	100.00	
Castle Wind Farm (Pty) Ltd.	Cape Town	South Africa	100.00	
Chapeno Solar LLC	Delaware	USA	100.00	
Chico Creek Solar LLC	Delaware	USA	100.00	
Chino Valley Solar LLC	Delaware	USA	100.00	
Coalbank Creek Solar LLC	Delaware	USA	100.00	5
Coyote Gulch Solar LLC	Delaware	USA	100.00	
Crystal Springs Solar LLC	Delaware	USA	100.00	5
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	
Fairforest Solar LLC	Delaware	USA	100.00	
Hartebeest Wind Farm (Pty) Ltd.	Cape Town	South Africa	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	
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 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 09 Srl	Verona	Italy	100.00	
juwi Development 10 Srl	Verona	Italy	100.00	5

List of MVV's shareholdings at 30 September 2022

	Town/city	Country	Share of capital % [1]	Footnotes
juwi Development 11 Srl	Verona	Italy	100.00	5
juwi Development 12 Srl	Verona	Italy	100.00	5
juwi Development 13 Srl	Verona	Italy	100.00	5
juwi Development 14 Srl	Verona	Italy	100.00	5
juwi Development 15 Srl	Verona	Italy	100.00	5
juwi Energy Services 2 (Pty) Ltd.	Cape Town	South Africa	80.00	
juwi Solar ZA Construction 9 (Pty) Ltd.	Cape Town	South Africa	60.00	
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	
Kenhardt PV3 (Pty) Ltd.	Cape Town	South Africa	100.00	
Kiowa Solar LLC	Delaware	USA	100.00	
Koppie Enkel Solar Farm (Pty) Ltd.	Cape Town	South Africa	100.00	
Kronos Solar Farm 1 (Pty) Ltd.	Cape Town	South Africa	100.00	
Kronos Solar Farm 2 (Pty) Ltd.	Cape Town	South Africa	100.00	
Kronos Solar Farm 3 (Pty) Ltd.	Cape Town	South Africa	100.00	
La Garita Solar LLC	Delaware	USA	100.00	
Marovax (Pty) Ltd.	Cape Town	South Africa	100.00	
Moffat Solar LLC	Delaware	USA	100.00	
Monarch Solar LLC	Delaware	USA	100.00	
Muleshoe Solar LLC	Delaware	USA	100.00	
Namies Wind Farm (Pty) Ltd.	Cape Town	South Africa	100.00	
North Platte Solar LLC	Delaware	USA	100.00	5
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	
Paradox Valley Solar LLC	Delaware	USA	100.00	
Pike Solar LLC	Delaware	USA	100.00	
Pronghorn Solar LLC	Delaware	USA	100.00	
Rifle Gap Solar LLC	Delaware	USA	100.00	5
Royal Slope Solar LLC	Delaware	USA	100.00	
Saddle Mountain Solar LLC	Delaware	USA	100.00	
San Carlos 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	
Sky Prairie Solar LLC	Delaware	USA	100.00	5
Skyview Solar LLC	Delaware	USA	100.00	
Spanish Peaks II Solar LLC	Delaware	USA	100.00	
Spanish Peaks Solar LLC	Delaware	USA	100.00	
Stansburry Solar II 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	
Zingesele Wind Farm (Pty) Ltd.	Cape Town	South Africa	100.00	

List of MVV's shareholdings at 30 September 2022	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	
AvanLog Solar GmbH	Rosental (dom.: Munich)	Germany	50.00	5
AVR BioGas GmbH	Sinsheim	Germany	41.50	
BEEGY Operations GmbH	Mannheim	Germany	51.00	
Biomasse Rhein-Main GmbH	Flörsheim am Main	Germany	33.33	
Gemeinschaftskraftwerk Kiel Gesellschaft mit beschränkter Haftung	Kiel	Germany	50.00	
GeoHardt GmbH	Schwetzingen	Germany	50.00	
Grosskraftwerk Mannheim Aktiengesellschaft	Mannheim	Germany	28.00	
Infrastruktur Donnersberg GmbH & Co. KG	Wörrstadt	Germany	22.91	
Mainnetz GmbH	Obertshausen	Germany	25.10	
Qivalo GmbH	Mannheim	Germany	42.50	
ReNabi GmbH	Mannheim	Germany	51.00	
sMArt City Mannheim GmbH	Mannheim	Germany	50.00	
Solventus GmbH & CO. KG	Kiel	Germany	50.00	5
Solventus Verwaltungsgesellschaft mbH	Kiel	Germany	50.00	5
Stadtwerke Ingolstadt Beteiligungen GmbH	Ingolstadt	Germany	48.40	
Stadtwerke Sinsheim Versorgungs GmbH & Co. KG	Sinsheim	Germany	30.00	
SWT Solar GmbH	Trier	Germany	55.00	5
Umspannwerk Donnersberg GmbH & Co. KG	Wörrstadt	Germany	22.91	
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	8
Stadtwerke Buchen GmbH & Co. KG	Buchen-Odenwald	Germany	25.10	
Zweckverband Wasserversorgung Kurpfalz	Mannheim (dom.: Heidelberg)	Germany	51.00	3

List of MVV's shareholdings at 30 September 2022

	Town/city	Country	Share of capital % [1]	Footnotes
At equity				
Associates (international)				
juwi Shizen Energy Operation Inc.	Tokyo	Japan	30.00	
Other minority shareholdings				
(Germany)				
8KU GmbH	Berlin	Germany	12.50	
Infrastruktur Oberheimbach I GmbH & Co. KG	Wörrstadt	Germany	15.00	
Infrastrukturgesellschaft Bischheim GmbH & Co. KG	Wörrstadt	Germany	15.31	
juwi Wind Germany 129 GmbH & Co. KG	Wörrstadt	Germany	16.00	
Klimaschutzagentur Mannheim gemeinnützige GmbH	Mannheim	Germany	40.00	
Main-Kinzig-Entsorgungs- und Verwertungs GmbH	Gelnhausen	Germany	49.00	
Management Stadtwerke Buchen GmbH	Buchen-Odenwald	Germany	25.20	
RIO Holzenergie GmbH & Co. Langelsheim KG	Wörrstadt	Germany	37.55	
Stadtmarketing Mannheim GmbH	Mannheim	Germany	3.09	
Stadtwerke Langen Gesellschaft mit beschränkter Haftung	Langen	Germany	10.00	4
Stadtwerke Schwetzingen GmbH & Co. KG	Schwetzingen	Germany	10.00	
Stadtwerke Schwetzingen Verwaltungsgesellschaft mbH	Schwetzingen	Germany	10.00	
Stadtwerke Sinsheim Verwaltungs GmbH	Sinsheim	Germany	30.00	
Stadtwerke Walldorf GmbH & Co. KG	Walldorf	Germany	25.10	
Stadtwerke Walldorf Verwaltungs GmbH	Walldorf	Germany	25.10	
SWT Regionale Erneuerbare Energien GmbH	Trier	Germany	51.00	
Wasserversorgungsverband Neckargruppe	Edingen-Neckarhausen	Germany	25.00	
WiWi Windkraft GmbH & Co. Westpfalz KG	Wörrstadt	Germany	5.32	
WVE Wasserversorgungs- und -entsorgungsgesellschaft Schriesheim mbH	Schriesheim	Germany	24.50	

1 Share of capital at 30 September 2022 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 Controlling influence

7 Citizens' energy company at the Group

8 Significant influence

Further disclosures can be found in the list of shareholdings of MVV Energie AG.

41. Auditor's fee

The following fees were incurred in Germany for the services performed by the auditor of the consolidated financial statement, PricewaterhouseCoopers GmbH Wirtschaftsprüfungsgesellschaft, in the 2022 financial year:

Auditor's fee

Euro 000s	FY 2022	FY 2021
Audit services	2,257	2,166
Other audit services	420	486
Tax advisory services	94	54
Other services	608	333
	3,379	**3,039**

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.

42. Utilisation of § 264 (3) HGB

The following German subsidiaries will draw on the disclosure exemption provided for under § 264 (3) HGB for the 2022 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 Grüne Wärme GmbH, Mannheim
- MVV Umwelt GmbH, Mannheim
- MVV Umwelt Ressourcen GmbH, Mannheim

43. 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.**

44. Information on concessions

In addition to the concession agreements between the City of Mannheim and MVV Energie AG (see Note 39 Related party disclosures), further concession agreements have also been concluded between MVV companies and local and regional authorities. The remaining terms range from 8 to 20 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.

45. Events after balance sheet date

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

Mannheim, 14 November 2022

MVV Energie AG

Executive Board

Dr. Georg Müller   Verena Amann   Ralf Klöpfer   Dr. Hansjörg 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 risk associated with the expected development of the Group.”

Mannheim, 14 November 2022

MVV Energie AG

Executive Board

Dr. Georg Müller | Verena Amann | Ralf Klöpfer | Dr. Hansjörg Roll

Directors and Officers

EXECUTIVE BOARD OF MVV ENERGIE AG

Dr. Georg Müller
CEO, Commercial Affairs

Verena Amann
Personnel and Labour Director

Daniela Kirchner
Commercial Affairs
(from 1 January 2022
to 30 September 2022)

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-Weidner [1]
(Deputy Chairwoman)
Chairwoman of Group Works Council

Johannes Böttcher [1]
Work Safety Specialist
at Energieversorgung Offenbach AG
(until 26 October 2022)

Angelo Bonelli [1]
Trade Union Secretary
ver.di Baden-Württemberg State District

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

Sabine U. Dietrich
Supervisory Board Member, Consultant

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

Martin F. Herrmann
Business Angel, Mentor

Barbara Hoffmann
Auditor, Tax Advisor

Dr. Simon Kalvoda [1]
Head of Facility Management Division at
MVV Energie AG
(since 1 October 2022)

Gregor Kurth
Partner; Igneo Infrastructure Partners (Igneo),
London, UK

Thoralf Lingnau [1]
Member of Works Council of MVV Energie AG

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

Erik Niedenthal [1]
Chairman of Works Council of
Energieversorgung Offenbach AG
(since 27 October 2022)

Tatjana Ratzel
Lawyer, Head of Department
INTER Krankenversicherung AG Mannheim

Thorsten Riehle
Managing Director of Capitol-Betriebs GmbH Mannheim

Andreas Schöniger [1]
Deputy Chairman of Works Council of
MVV Energie AG
(since 1 May 2022)

Susanne Schöttke [1]
State District Director, ver.di Nord

Bernhard Schumacher [1]
Head of Smart Cities Division at MVV Energie AG
(until 30 September 2022)

Dr. Stefan Seipl
Businessman, Independent Management Consultant

Christian Specht
First Mayor of City of Mannheim

Susanne Wenz [1]
Deputy State District Director, ver.di
Baden-Württemberg

Jürgen Wiesner [1]
Chairman of Works Council of MVV Energie AG
(until 30 April 2022)

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) • Heike Kamradt-Weidner (Deputy Chairwoman) • Angelo Bonelli • Detlef Falk • Martin F. Herrmann • Gregor Kurth
Personnel Committee	• Dr. Peter Kurz (Chairman) • Heike Kamradt-Weidner (Deputy Chairwoman) • Angelo Bonelli • Barbara Hoffmann • Gregor Kurth • Andreas Schöniger (since 2 June 2022) • Jürgen Wiesner (until 30 April 2022)
Nomination Committee	• Dr. Peter Kurz (Chairman) • Barbara Hoffmann • Gregor Kurth • Dr. Lorenz Näger • Tatjana Ratzel • Thorsten Riehle
Mediation Committee	• Dr. Peter Kurz (Chairman) • Heike Kamradt-Weidner • Gregor Kurth • Andreas Schöniger (since 2 June 2022) • Jürgen Wiesner (until 30 April 2022)
New Authorised Capital Creation Committee	• Dr. Peter Kurz (Chairman) • Heike Kamradt-Weidner • Gregor Kurth • Dr. Lorenz Näger • Tatjana Ratzel • Thorsten Riehle • Andres Schöniger (since 2 June 2022) • Christian Specht • Jürgen Wiesner (until 30 April 2022)

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 • Energieversorgung Offenbach AG, Offenbach (Chairman) (until 28 February 2022) • Grosskraftwerk Mannheim AG, Mannheim • JUWI GmbH, Wörrstadt (Chairman) • MVV Insurance Services GmbH, Mannheim (Chairman) (until 15 August 2022) • Stadtwerke Kiel AG, Kiel (Chairman) (until 20 March 2022)	• MVV Enamic GmbH, Mannheim (Deputy Chairman) • MVV Trading GmbH, Mannheim • MVV Umwelt GmbH, Mannheim
Verena Amann	• Energieversorgung Offenbach AG, Offenbach • JUWI GmbH, Wörrstadt • MVV Netze GmbH, Mannheim • Stadtwerke Ingolstadt Beteiligungen GmbH, Ingolstadt • Stadtwerke Kiel AG, Kiel	• MVV Enamic GmbH, Mannheim
Daniela Kirchner (from 1 January 2022 to 30 September 2022)	• Energieversorgung Offenbach AG, Offenbach • JUWI GmbH, Wörrstadt	• MVV Energie CZ a.s., Prague, Czech Republic • MVV Trading GmbH, Mannheim • Stadtwerke Sinsheim Versorgungs GmbH & Co.KG, Sinsheim
Ralf Klöpfer	• Energieversorgung Offenbach AG, Offenbach • IDOS Software AG, Karlsruhe (until 31 October 2021) • JUWI GmbH, Wörrstadt • Stadtwerke Ingolstadt Beteiligungen GmbH, Ingolstadt (Deputy Chairman) • Stadtwerke Kiel AG, Kiel (Chairman since 21 March 2022)	• MVV Enamic GmbH, Mannheim (Chairman) • MVV Energie CZ a.s., Prague, Czech Republic (Chairman) • MVV Trading GmbH, Mannheim (Chairman) • Qivalo GmbH, Mannheim (Chairman) • Stadtmarketing Mannheim GmbH, Mannheim
Dr. Hansjörg Roll	• Energieversorgung Offenbach AG, Offenbach (Chairman since 1 March 2022) • Grosskraftwerk Mannheim AG, Mannheim (Chairman) • JUWI GmbH, Wörrstadt (Deputy Chairman) • MVV Netze GmbH, Mannheim (Chairman) • Stadtwerke Kiel AG, Kiel	• MVV Energie CZ a.s., Prague, Czech Republic • MVV Umwelt GmbH, Mannheim (Chairman)

MEMBERS OF SUPERVISORY BOARD OF MVV ENERGIE AG

Name **Occupation**	**Positions held on other statutory supervisory boards of German companies**	**Membership of comparable German and foreign company supervisory boards**
Dr. Peter Kurz (Chairman) Lord High Mayor of City of Mannheim	• Universitätsklinikum Mannheim GmbH, Mannheim (Chairman)	• GBG Mannheimer Wohnungsbaugesellschaft mbH, Mannheim (Chairman) • mg: mannheimer gründungszentren gmbh, Mannheim (Chairman) • MKB Mannheimer Kommunalbeteiligungen GmbH, Mannheim (Chairman) • MWS Projektentwicklungsgesellschaft mbH, Mannheim (Chairman) • Sparkasse Rhein Neckar Nord, Mannheim (Chairman) • Stadtmarketing Mannheim GmbH, Mannheim (Chairman)
Heike Kamradt-Weidner (Deputy Chairwoman) Chairwoman of Group Works Council	• MVV Insurance Services GmbH, Mannheim (until 15 August 2022) • MVV Netze GmbH, Mannheim	• MVV Enamic GmbH, Mannheim • MVV Trading GmbH, Mannheim • MVV Umwelt GmbH, Mannheim • Soluvia Energy Services GmbH, Offenbach • Soluvia IT-Services GmbH, Kiel, (since 7 October 2022)
Johannes Böttcher Work Safety Specialist at Energieversorgung Offenbach AG (until 26 October 2022)	• Energieversorgung Offenbach AG, Offenbach (Deputy Chairman)	• Zusatzversorgungskasse Darmstadt, Darmstadt
Angelo Bonelli Trade Union Secretary at ver.di Baden-Württemberg State District	• TransnetBW GmbH, Stuttgart	
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	
Detlef Falk Chairman of Works Council of Stadtwerke Kiel AG	• Stadtwerke Kiel AG, Kiel	• Soluvia Energy Services GmbH, Offenbach • Soluvia IT-Services GmbH, Kiel
Martin F. Herrmann Business Angel, Mentor		• Česká pošta, s.p., Prague, Czech Republic (Chairman) (since 29 March 2022)
Barbara Hoffmann Auditor, Tax Advisor		• Berliner Stadtreinigungsbetriebe, Anstalt des öffentlichen Rechts, Berlin

Name Occupation	Positions held on other statutory supervisory boards of German companies	Membership of comparable German and foreign company supervisory boards
Dr. Simon Kalvoda Head of Facility Management Division at MVV Energie AG (since 1 October 2022)		
Gregor Kurth Partner; Igneo Infrastructure Partners (Igneo), London, UK		• Utilitas Group, Estonia • Owlcastle Holdings Limited, UK
Thoralf Lingnau Member of Works Council of MVV Energie AG		• MVV Trading GmbH, Mannheim
Dr. Lorenz Näger Former Deputy Chairman of Executive Board and CFO of HeidelbergCement AG	• PHOENIX Pharma SE, Mannheim	• Blanc & Fischer Familienholding GmbH, Oberderdingen, Germany (since 1 May 2022) • PHOENIX Pharmahandel GmbH & Co. KG, Mannheim, Germany • PT Indocement Tunggal Prakarsa Tbk., Jakarta, Indonesia
Erik Niedenthal Chairman of Works Council of Energieversorgung Offenbach AG (since 27 October 2022)	• Energieversorgung Offenbach AG, Offenbach (Deputy Chairman since 3 November 2022)	• Soluvia Energy Services GmbH, Offenbach • Soluvia IT-Services GmbH, Kiel
Tatjana Ratzel Lawyer, Head of Department at INTER Krankenversicherung AG Mannheim		
Thorsten Riehle Managing Director of Capitol-Betriebs GmbH Mannheim		• mg: mannheimer gründungszentren gmbH, Mannheim • Stadtmarketing Mannheim GmbH, Mannheim
Andreas Schöniger Deputy Chairman of Works Council of MVV Energie AG (since 1 May 2022)	• MVV Insurance Services GmbH, Mannheim (until 15 August 2022)	• MVV Trading GmbH Mannheim (since 16 August 2022) • MVV Umwelt GmbH, Mannheim (since 18 August 2022)
Susanne Schöttke State District Director ver.di Nord	• Telekom Deutschland GmbH, Bonn (until 31 March 2022) • Deutsche Telekom AG, Bonn (since 7 April 2022)	
Bernhard Schumacher Head of Smart Cities Division at MVV Energie AG (until 30 September 2022)		• 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	• Nordion Energi AB, Malmö, Sweden

Name Occupation	Positions held on other statutory supervisory boards of German companies	Membership of comparable German and foreign company supervisory boards
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)
Susanne Wenz Deputy State District Director, ver.di Baden-Württemberg		• PSD Bank Karlsruhe-Neustadt eG, Karlsruhe
Jürgen Wiesner Chairman of Works Council of MVV Energie AG (until 30 April 2022)	• MVV Enamic GmbH, Mannheim (until 15 December 2021) • MVV Trading GmbH, Mannheim (until 17 December 2021) • MVV Umwelt GmbH, Mannheim (until 13 April 2022)	• Soluvia IT-Services GmbH, Kiel (until 13 April 2022)

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 2022, the consolidated statement of comprehensive income, consolidated income statement, the consolidated statement of changes in equity and the consolidated cash flow statement for the financial year from 1 October 2021 to 30 September 2022, as well as the notes to the 2022 consolidated financial statements of MVV, which include 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 2021 to 30 September 2022. Consistent with German legal requirements, 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 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 2022 and of its financial performance for the financial year from 1 October 2021 to 30 September 2022, 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) letter (f) of the EU Audit Regulation, we declare that we have not provided any 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 2021 to 30 September 2022. 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 € 231 million is reported under the “Intangible assets” balance sheet item in the consolidated financial statements of MVV Energie AG. Goodwill is tested for impairment by the company once a year or when there are indications of impairment to determine any possible need for write-downs. The impairment test is carried out on 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 as 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 future cash flows at 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. In view of this, and given 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 aspects. Having compared the future cash flows used for the calculation with the medium-term business plan adopted by 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. Aware that even relatively minor 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. To reflect the uncertainty inherent in the projections, we evaluated the sensitivity analyses performed by the company. Overall, the valuation parameters and assumptions used by the executive directors are in line with our expectations and also within the ranges we consider reasonable.

③ The company’s goodwill disclosures are contained in note “14 Intangible assets” of the notes to MVV’s 2022 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. To this end, MVV Trading GmbH trades on the spot and futures markets, mainly for electricity, gas and emissions rights on energy exchanges and the over-the-counter market. The hedging measures take due account of factors such as the expected implications of the war in Ukraine. The contracts thereby concluded constitute derivative instruments in accordance with IFRS 9; these are accounted for either 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 instrument will be received or delivered in future as part of the company's own expected purchase, sale or use 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 use requirements and all financially settled derivative financial instruments are measured at fair value through profit or loss. These derivative financial instruments for electricity, gas and emission rights are in some cases included as hedging instruments in IFRS 9 hedge accounting, in this case as cash flow hedges. The underlying transactions are the purchase and sale of electricity, gas and emission rights at variable prices within a maximum of five years. The energy trading operations are supported by energy trading systems. These 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.

Given the high trading volumes, the complexity of accounting for derivatives in accordance with IFRS 9 and IFRS 13, the increased uncertainty due to the expected implications of the war in Ukraine and the 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 One aspect of our audit involved assessing the appropriateness of the internal control system established for the purpose of entering into and settling energy trading transactions, including the trading systems used to this end. 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 IFRS 13 compliance and conducted 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 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 and of the reclassified amounts within the consolidated income statement, as well as the expected implications of the war in Ukraine. 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 "36 Financial instruments" in the notes to MVV's 2022 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 remuneration report pursuant to § 162 AktG, for which the supervisory board is additionally responsible

- all 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 listed above and, in so doing, to consider whether the other information

- is materially inconsistent with the consolidated financial statements, with the audited contents of 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 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 arrangement 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 ESEF format and therefore neither 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 group management report for the financial year from 1 October 2021 to 30 September 2022 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 the Purpose of Disclosure of Electronic Reproductions pursuant to § 317 Abs. 3a HGB (IDW AsS 410 (10.2021)) 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 Sentence 4 Nr. [Number] 1 HGB and for tagging 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 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 11 March 2022. We were engaged by the supervisory board on 10 May 2022. We have been the group auditor of MVV Energie AG, Mannheim, without interruption since the 2008/2009 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 group management report converted into ESEF format – also in the versions to be published in the Federal Official Gazette (Bundesanzeiger) – are merely electronic reproductions of the audited consolidated financial statements and the audited group management report and do not 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 audited ESEF documents made available in electronic form.

GERMAN PUBLIC AUDITOR RESPONSIBLE FOR THE ENGAGEMENT

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

Essen, 14 November 2022

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 PRACTITIONER'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") for the period from 1 October 2021 to 30 September 2022, which is included in the "Combined Non-Financial Declaration" section of the combined management report (hereinafter the "Combined Non-Financial Declaration").

Our assurance engagement did not extend in scope to the external documentation sources or expert opinions referred to in the Combined Non-Financial Declaration.

Responsibilities of executive directors

The executive directors of the company are responsible for the preparation of the Combined Non-Financial Declaration in accordance with § 315c in conjunction with § 289c to § 289e HGB and with Article 8 of REGULATION (EU) 2020/852 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL dated 18 June 2020 on the establishment of a framework to facilitate sustainable investment and amending Regulation (EU) 2019/2088 (hereinafter the "EU Taxonomy Regulation") and the supplementing Delegated Acts, as well as the company's own interpretation of the wordings and terms contained in the EU Taxonomy Regulation and in the supplementing Delegated Acts as disclosed in the "EU Taxonomy" section of the Combined Non-Financial Declaration.

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 of the Group which are reasonable in the circumstances. Furthermore, the executive directors are responsible for such internal controls as they have determined necessary to enable the preparation of a Combined Non-Financial Declaration that is free from material misstatements due to fraudulent acts (manipulation of the Non-Financial Declaration) or errors.

The EU Taxonomy Regulation and the supplementing Delegated Acts contain wordings and terms that are still subject to substantial uncertainties regarding their interpretation and for which not all clarifications have yet been published. The executive directors have therefore included a description of their interpretation of the EU Taxonomy Regulation and the supplementing Delegated Acts in the "EU Taxonomy" section of the Combined Non-Financial Declaration. They are responsible for the tenability of this interpretation. Due to the innate risk of diverging interpretations of vague legal concepts, the legal conformity of this interpretation is subject to uncertainty.

Independence and quality control of the audit firm

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

Our audit firm applies the national legal requirements and professional standards – in particular the Professional Code for German Public Auditors and German Chartered Accountants (Berufssatzung für Wirtschaftsprüfer und vereidigte Buchprüfer: BS WP/vBP), as well as the Standard on Quality Control 1: Requirements to Quality Control for Audit Firms (IDW Qualitätssicherungsstandard 1: Anforderungen an die Qualitätssicherung in der Wirtschaftsprüferpraxis – IDW QS 1) published by the Institute of Public Auditors in Germany (Institut der Wirtschaftsprüfer: IDW) – 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 disclosures made in the Non-Financial Declaration based on the assurance engagement we have performed.

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 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 Combined Non-Financial Declaration, with the exception of the external documentation sources or expert opinions referred to in the Combined Non-Financial Declaration, has not been prepared, in all material respects, in accordance with § 315c in conjunction with § 289c to § 289e HGB and the EU Taxonomy Regulation, the supplementing Delegated Acts and the interpretations by the company's executive directors presented in the "EU Taxonomy" section of the Combined Non-Financial Declaration.

The assurance procedures in a limited assurance engagement are less extensive than in a reasonable assurance engagement; a substantially lower level of assurance is therefore obtained. The assurance procedures selected depend on the practitioner's judgment.

Within the scope of our assurance engagement, we performed, among 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 Combined Non-Financial Declaration
- Identification of the likely risks of misstatement of the Combined Non-Financial Declaration
- Analytical evaluation of select disclosures in the Combined Non-Financial Declaration
- Comparison of select disclosures with corresponding data in the consolidated financial statements and the group management report
- Evaluation of the presentation of the Combined Non-Financial Declaration
- Evaluation of the process used to identify taxonomy-aligned economic activities and the corresponding disclosures in the Combined Non-Financial Declaration
- Enquiries as to the relevance of climate-related risks

The executive directors are required to interpret vague legal concepts when determining the disclosures made under Article 8 of the EU Taxonomy Regulation. Due to the innate risk of diverging interpretations of these concepts, the legal conformity of their interpretation, and thus in this respect of our assurance engagement, is subject to uncertainty.

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 Combined Non-Financial Declaration for the period from 1 October 2021 to 30 September 2022 has not been prepared, in all material respects, in accordance with § 315c in conjunction with § 289c to § 289e HGB and the EU Taxonomy Regulation, the supplementing Delegated Acts and the interpretations by the company's executive directors presented in the "EU Taxonomy" section of the Combined Non-Financial Declaration. We do not issue any assurance conclusion on the external documentation sources or expert opinions referred to in the Combined Non-Financial Declaration.

Restriction on utilisation of assurance report

We point out that the assurance engagement has been performed for the purposes of the company and that the report is solely intended to inform the company about the result of the limited assurance engagement. The report may therefore not be suited for any purpose other than that stated. It is not intended for any third parties to base any (financial) decision thereon. Our responsibility is solely towards the company. We do not assume any responsibility towards third parties. Our assurance conclusion is not modified in this respect.

Munich, 14 November 2022

PricewaterhouseCoopers GmbH
Wirtschaftsprüfungsgesellschaft

Hendrik Fink
[German Public Auditor]

ppa. Meike Beenken