We inspire
with energy.

Annual Report 2019

MVV at a Glance

ADJUSTED SALES

3.7 Euro billion

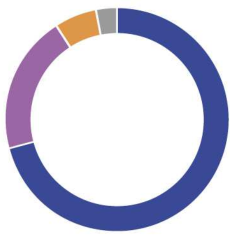
ADJUSTED EBIT

225 Euro million

ADJUSTED SALES BY REPORTING SEGMENT

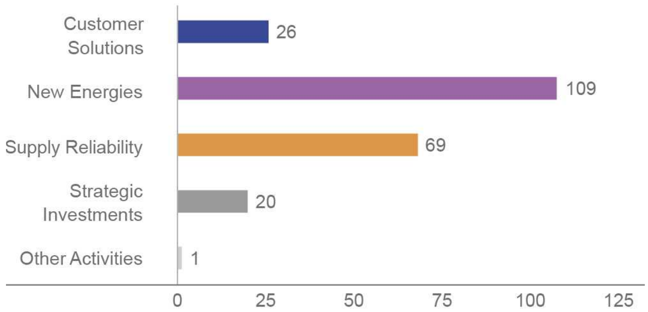
Shares (%)

	FY 2019
Customer Solutions	71
New Energies	20
Supply Reliability	6
Strategic Investments	3



ADJUSTED EBIT BY REPORTING SEGMENT

Euro million



INVESTMENTS

310 Euro million

2019

MVV in Figures

	FY 2019	FY 2018	% change
Financial key figures			
Adjusted sales excluding energy taxes (Euro million)	3,683	3,903	– 6
Adjusted EBITDA [1] (Euro million)	409	443	– 8
Adjusted EBIT [1] (Euro million)	225	228	– 1
Adjusted annual net income [1] (Euro million)	115	111	+ 4
Adjusted annual net income after minority interests [1] (Euro million)	98	94	+ 4
Adjusted earnings per share [1] (Euro)	1.49	1.43	+ 4
Dividend proposal/dividend per share (Euro)	0.90	0.90	0
Cash flow from operating activities (Euro million)	238	331	– 28
Cash flow from operating activities per share (Euro)	3.60	5.03	– 28
Adjusted total assets at 30 September [2] (Euro million)	4,472	4,152	+ 8
Adjusted equity at 30 September [2] (Euro million)	1,544	1,550	0
Adjusted equity ratio at 30 September [2] (%)	34.5	37.3	– 8
Net financial debt at 30 September (Euro million)	1,345	1,075	+ 25
ROCE (%)	7.9	8.5	– 7
WACC (%)	6.3	6.3	0
Value spread (%)	1.6	2.2	– 27
Capital employed (Euro million)	2,847	2,674	+ 6
Investments (Euro million)	310	290	+ 7
Non-financial key figures			
Direct CO_2 emissions (Scope 1) (tonnes 000s)	1,545	1,547	0
Net CO_2 savings (tonnes 000s)	486	485	0
Installed renewable energies capacities (MW)	474	467	+ 1
Share of renewable energies in proprietary electricity generation (%)	63	63	0
Concluded development of new renewable energies plants (MW)	460	1,011	– 55
Number of employees at 30 September (headcount)	6,113	5,978	+ 2
of which women	1,756	1,701	+ 3
of which men	4,357	4,277	+ 2
Share of female managers at 30 September (%)	15	14	+ 7

1 Excluding non-operating measurement item for financial derivatives, excluding structural adjustment for part-time early retirement, excluding restructuring result and including interest income from finance leases
2 Excluding non-operating measurement item for financial derivatives

Contents

Reference to other information contained in this report.

Reference to other information on the internet.

To Our Shareholders

Letter from the CEO

DEAR LADIES AND GENTLEMEN,

The energy turnaround is making progress, there is no doubt about that. How else to explain the fact that the energy industry is the only sector in Germany that will meet its climate protection targets for 2020? How else to explain that a course to exiting from coal has now been charted? And how else to explain that the moves to decarbonise heating energy (“green heat”) and transport (“e-mobility”) are gaining momentum? The energy industry has underlined its claim to be the pioneer here, while also opening up new perspectives for developments in technology and society.

All that glitters is not gold, of course. The target of raising the renewable share of the electricity supply to 65 % is still ambitious. The price of CO_2 in those sectors not yet participating in European emissions trading, especially transport and real estate, is still too low. It takes too long to actually implement necessary infrastructure measures, particularly those required for generation and grids. All this is reducing acceptance for the energy turnaround. People have often lost the plot – whether of developments on the ground or of the advance in climate change.

That in no way qualifies the success of the energy turnaround, or indeed its necessity. Politicians, (the energy) industry and society share a responsibility, both now and in future, to keep working on these weak points. We need more action and more courage, such as more decisive progress with wind and solar. We cannot afford to play off individual renewables against each other. We need a CO_2 price which, following its welcome move to a broad-based system, actually starts influencing developments. And we need to ease the strain placed on electricity prices by taxes and duties. This way, we can accelerate decarbonisation without leaving electricity customers to foot the bill on their own.

Climate neutrality by 2050 – at the latest

Climate protection was, is and will remain a key pillar of MVV’s strategy. We are committed to the targets in the Paris Accord and will reduce emissions at our proprietary conventional generation positions to zero by 2050 at the latest. Here, we always keep one eye on our customers. Our aim is to act as a competent and experienced partner to them as they themselves head for climate neutrality by offering solutions and innovative services to enhance their energy efficiency, improve their CO_2 balance sheets, and raise their share of proprietary renewables generation. We are looking into technologies to reduce, use or offset any unavoidable remaining emissions.

Heading for the future with renewable energies

Today, renewable energies are already one of the most important primary sources in Germany. They are the only way for us to meet national and international climate protection targets. After the interim target in 2030, electricity generation in Germany should, and must, become almost entirely renewable by 2050. We are promoting this expansion in two ways. On the one hand, we are gradually making our proprietary generation portfolio ever greener. In the 2019 financial year, 63 % of the electricity we generated already came from renewable sources. On the other hand, in our green project development business we connected plants and systems with a total capacity of 460 MW to the grid in the past year.

Responsibility for a secure supply

Increasing moves to avoid fossil fuels and the resultant reduction in CO_2 will only succeed if we nevertheless manage to uphold supply security. The new gas-powered CHP plant at Stadtwerke Kiel is a prime example here. Once operations are launched, it will secure the supply of environmentally-friendly heating energy to the state capital of Schleswig-Holstein. At the same time, it will ideally complement an electricity supply that is becoming ever greener and thus less controllable. Its 20 gas-powered motors take just five minutes to go from zero to maximum capacity. That extremely fast reaction time means the plant can react rapidly and flexibly to the new requirements of an energy market that is ever more reliant on wind and solar power.

Green heat

Put simply, there can be no energy turnaround without heating energy, which accounts for around one third of all CO_2 emissions in Germany. District and local heating have been forward-looking topics at MVV for years now. After all, they are and will remain indispensable components of any sustainable heating energy supply, especially in large built-up areas. That is why we are consistently investing in ever greener generation, and thus in reducing CO_2 emissions. We are currently investing around Euro 100 million in connecting our waste incineration plant to the heating energy grid in Mannheim and the region. This link will start operations in the 19/20 heating period. We are working with comparable concepts at other locations as well. From early 2020, for example, we will supply the city of Merseburg with heating energy from our plant in Leuna.

Our sustainability targets

These topics are not new for MVV. We already accounted for them in the sustainability targets we set ourselves in 2016 for the period until 2026. We will double our proprietary electricity generation from renewable energies to more than 800 megawatts and will therefore continue investing in expanding our portfolio. With our project development activities, we will be newly connecting a total of 10,000 megawatts of renewable energies to the grid by 2026. In this, we are focusing on onshore wind power and solar plants, as well as on generating energy from waste, biomass and biogas. At the same time, we will triple the annual CO_2 savings we achieve in the overall system to one million tonnes of CO_2 a year.

Digitalisation as key driver

The digitalisation of the energy industry is playing a key role in the energy system conversion. We are seizing the resultant opportunities on the one hand to further optimise our existing processes and work together more quickly and effectively. On the other hand, digitalisation is helping us to develop new and customised products and services. In our role as system partner to cities and local authorities, for example, digitalisation enables us to offer networked mobility solutions for use in innovative urban planning and development. It also makes possible new forms of customer dialogue, such as those used when planning, developing and implementing user-based campaigns.

Good year in 2019

For MVV, 2019 was an intensive year, one we concluded on a successful note notwithstanding and in part because of the underlying conditions outlined above. We achieved a great deal in terms of implementing our sustainability-based strategy and laid a foundation for future growth. We met our operating earnings target in the 2019 financial year. At Euro 225 million, our adjusted EBIT fell only slightly short of the previous year's figure, and that despite several months of downtime at our biomass power plant at Ridham Dock. Here, we benefited above all from improved earnings in renewable energies project development, as well as from consistent cost management.

On behalf of all members of the Executive Board, I would like to express our sincere thanks and appreciation to all our employees. Their expertise and courage created the basis for these results and for the further development of the entire MVV Group.

Profitable growth for 2020

Looking ahead, the tasks will clearly remain challenging. As a dynamic and forward-looking company, we aim to continue seizing the associated opportunities to boost our business and generate further profitable growth. We expect adjusted EBIT for our 2020 financial year to slightly exceed the previous year's figure. We will uphold a high volume of investment while maintaining the same strategic investment focuses.

We would like to enable our shareholders to participate once again in our success in 2019. Confirming our continuity-based dividend policy, we will therefore propose a dividend of Euro 0.90 per share to the Annual General Meeting on 13 March 2020. This corresponds to a payout ratio of 61 % and a dividend yield of 3.4 % (based on the XETRA closing price at the end of the financial year). Both key figures are certainly respectable.

On behalf of the entire Executive Board, I would like to thank you, our shareholders, for the trust you placed in MVV in 2019 and in many cases in numerous previous years as well. Effective climate protection and successfully implementing the energy turnaround are now part of our company's DNA. We will draw on both to ensure the profitable and secure long-term development of your MVV. We work towards this goal each and every day and would be delighted if you were to continue supporting us.

Yours faithfully,

Dr. Georg Müller
CEO

Executive Board

Dr. Georg Müller
Dr. Georg Müller was born in Höxter in 1963. He gained a doctorate in law and followed this up with a master's degree from the University of Cambridge. Having worked as a lawyer, he came to the energy industry in 1995. His career took him from RWE AG, where he ultimately headed the Legal and Board Affairs department, via a position on the Executive Board at VSE AG (Technology and Sales Director) to RWE Rhein-Ruhr AG, where he was CEO. He has been CEO of MVV Energie AG since 1 January 2009.

Verena Amann
Verena Amann was born in Ravensburg in 1981. She obtained her degree in business administration, majoring in marketing. From 2007 onwards, she held various responsible positions in the HR department at United Internet Group and its subsidiaries. In 2015, she took over the management of the Group HR Department at United Internet Group and also became Managing Director of the service company United Internet Corporate Services GmbH. She joined the Executive Board of MVV Energie AG as of 1 August 2019.

Ralf Klöpfer

Ralf Klöpfer was born in Backnang in 1966. He studied electrical technology, majoring in the energy industry, and thus laid a foundation for his subsequent career. This took him from Badenwerk AG to EnBW AG, where he built up EnBW Gesellschaft für Stromhandel mBH and the Energy Industry/Optimisation department at EnBW AG. He later worked as Director of Risk Management at EnBW Trading GmbH and as Spokesman of the Management at EnBW Vertriebs GmbH. After a stint as Managing Partner at enevio GmbH, he was appointed to the Executive Board of MVV Energie AG on 1 October 2013.

Dr. Hansjörg Roll

Dr. Hansjörg Roll was born in Offenburg in 1965. A graduate in chemical engineering, he went on to obtain a doctorate in engineering. After this, he worked at Badenwerk AG and EnBW Ingenieure GmbH as a project engineer and project director for power plant planning. In 2003, he came to MVV and took over the management of the industrial power plants at Gengenbach and Ludwigshafen. He subsequently held further management responsibilities at what is now MVV Enamic GmbH. He then worked as Managing Director at MVV Umwelt GmbH before being appointed to the Executive Board of MVV Energie AG on 1 January 2015.

Supervisory Board Report

Dr. Peter Kurz
Supervisory Board Chairman
of MVV Energie AG

DEAR LADIES AND GENTLEMEN,

The energy market is undergoing fundamental transformation, with not only the energy turnaround but also the advance of digitalisation leading to far-reaching changes. Even though the conditions in which it operates remain difficult, MVV was able to assert itself once again in the 2019 financial year. That gives us reason to be pleased, as it offers further proof that we took the right strategic decisions in past years and focused our investments accordingly. The company is sustainably and competitively positioned and will be able to seize the opportunities presented by the energy system of the future. The 2020 financial year, which we have begun with great optimism, also promises to be challenging.

Key focuses of Supervisory Board activities

We fulfilled all aspects of our duty to advise and supervise the Executive Board once again in the 2019 financial year. To this end, we were in ongoing dialogue with the Executive Board throughout the period under report. It kept us continuously and comprehensively informed of latest developments in the energy industry and energy policy, as well as of the Group's strategic alignment, business performance and situation, including its risk situation and risk management. Furthermore, the Executive Board presented and substantiated variances between the business performance and the original planning. Our body held in-depth discussions concerning the company's investment decisions. As Supervisory Board Chairman, I was also in close contact with the CEO outside of meetings in order to share views with him on current topics and developments.

We reviewed, questioned and openly discussed all reports and other information provided by the Executive Board in the full Supervisory Board and our committees. We received all documents sufficiently well in advance for us always to have enough time to prepare the meetings. We convinced ourselves of the legality, expediency and correctness of the business management. In our training and development measures, we dealt with current trends in digitalisation, the global challenges presented by the energy turnaround and MVV's new smart cities activities. We also visited the construction site for linking up the CHP plant in Mannheim to the existing district heating grid. This enabled us to form our own impression on location of the construction challenges involved.

Supervisory Board meetings and attendance

In the 2019 financial year, the Supervisory Board held four regular meetings and one unscheduled meeting. All Supervisory Board members complied with the expectation stated in the German Corporate Governance Code that they should attend more than half the meetings. Supervisory Board meetings were attended by an average of 88 % of the members. For the meetings of the full Supervisory Board and of its committees, we can report overall average attendance of 85 %.

Main topics of discussion at Supervisory Board meetings

At an unscheduled meeting held on **8 November 2018,** the Supervisory Board approved the acquisition of all outstanding shares in Juwi AG. For MVV, Juwi is a major strategic pillar with which we aim to exploit the growth opportunities presented by onshore wind power project development in Germany and by photovoltaics in the international arena.

At our meeting on **7 December 2018,** we prepared the agenda for the Annual General Meeting on 8 March 2019 and voted on the necessary draft resolutions. Apart from that, at this meeting we also reviewed and approved the consolidated financial statements (IFRS) and annual financial statements for the 2018 financial year. Furthermore, Verena Amann presented herself to the Supervisory Board for the first time. The resolution appointing Verena Amann to the Executive Board of MVV Energie AG was adopted by circulation and written approval at the end of February 2019.

At the meeting on **7 March 2019,** the Supervisory Board approved the resolution to extend MVV's wind power portfolio with Siegfriedeiche Windfarm. MVV's subsidiary Windwärts began work on building this windfarm in the year under report. Further topics addressed at this meeting included the development of smart cities activities and current challenges in the field of e-mobility.

The meeting on **7 June 2019** looked closely at ways in which the district heating supply in Mannheim and the region can be brought in line with climate targets in the long term, as well as at the disposal of shares held in Vents d'Oc Énergies Renouvables SARL. We also discussed the Non-Financial Declaration to be submitted for the year under report. Consistent with the requirements of the German Corporate Governance Code, we addressed our efficiency review. To continually improve the activities of our body, we analysed and evaluated our structures and the quality and effectiveness of our work.

The key focus of our meeting on **19 September 2019** was the approval of the business plan for the 2020 financial year. Based on the company's long-term strategy, our body discussed the three-year plan. One major component of this is the strategic development of the biomethane and organic waste fermentation business. Consistent with this, the Supervisory Board approved the resolution to build an organic waste fermentation plant in the Bernburg area. A further topic involved the Corporate Governance Report, which we approved for the 2019 financial year. The Non-Financial Declaration was once again on the meeting agenda.

Committee work

The relevant Supervisory Board committees **Page 175** ensure that topics and resolutions due to be discussed and adopted at Supervisory Board meetings are prepared efficiently. The committee chairmen inform our full body regularly and promptly about committee activities and about any decisions due to be taken at the next Supervisory Board meeting.

The **Audit Committee** held five scheduled meetings in the year under report. Key focuses of its work included the annual financial statements of MVV Energie AG, the consolidated financial statements and combined management report for the 2018 financial year and the financial reporting upon conclusion of the 1st quarter, 1st half, and 1st nine months of the 2019 financial year. In each of these quarters, the committee also addressed the company's risk situation and risk management.

Together with the Executive Board, the committee also discussed the company's 2020 business plan, medium-term planning and strategic alignment. Following careful examination, it recommended that the Supervisory Board should approve the budget for the 2020 financial year. The committee also accepted supplementary reports from the company: These related to group internal audit, the internal control system (IKS) in respect of the financial reporting process and the compliance management system. It reviewed these and established that all systems were appropriate, functional and effective. In this context, the committee also addressed MVV's decentralised management and control systems in several meetings. Furthermore, it determined the key audit focuses for the 2019 financial year. Other topics addressed by the committee included reporting on Juwi, Windwärts, MVV Trading and Beegy, the progress made with building the gas-powered CHP plant in Kiel, construction of the CHP plant in Dundee, the report on the selection of the auditor and the Non-Financial Declaration requiring submission for the year under report.

The **Personnel Committee** met five times in the 2019 financial year. It discussed the appointment of the new Personnel Director and recommended that the Supervisory Board should appoint Verena Amann in this capacity to the Executive Board as of 1 August 2019. Moreover, matters relating to the compensation of Executive Board members also formed part of the committee's discussions.

Neither the **Nomination Committee**, nor the **New Authorised Capital Creation Committee** nor the **Mediation Committee** held any meetings in the year under report.

Composition of Supervisory and Executive Boards

Katja Udluft, trade union secretary at ver.di Rhine-Neckar, stood down from the Supervisory Board as of 30 June 2019. By resolution of Mannheim District Court, Susanne Wenz, Deputy State Regional Director of ver.di Baden-Württemberg, was appointed as a member of the Supervisory Board of MVV Energie AG as of 11 July 2019 and assumed her position as an employee representative. Furthermore, Dr. Antje Mohr, trade union secretary at ver.di Kiel, and Peter Sattler, facility management officer, stood down from their positions at the end of the 2019 financial year. Gabriele Gröschl-Bahr was appointed by court order to the Supervisory Board of MVV Energie AG as of 1 October 2019. She is a member of ver.di's Federal Executive Board and has succeeded Dr. Antje Mohr.

Verena Amann, Personnel Director, was newly appointed to the Executive Board on 1 August 2019. Her contract has a term of three years. A graduate in business administration, she previously held responsible HR positions at United Internet Group and its subsidiaries from 2007 onwards. Since January 2015, she headed the Group HR Department and was also Managing Director of the service company United Internet Corporate Services GmbH.

Corporate governance

In the year under report, as in previous years, we dealt closely with the recommendations and provisions of the German Corporate Governance Code (DCGK) and endorsed the Declaration of Conformity with the Code submitted by the Executive Board. MVV Energie AG fully complies with all of the recommendations made by the Code. We approved the Corporate Governance Report, which also includes the Declaration of Conformity and the Corporate Governance Declaration, at our meeting on 19 September 2019 and published this on the internet on 4 November 2019 **www.mvv.de/corporate-governance and Page 64.**

Handling conflicts of interest and independence

All members of our Supervisory Board have committed themselves to disclosing any conflicts of interest immediately, should any such conflicts arise. Due to the consideration RheinEnergie AG was giving at the time to the possibility of selling its shares in MVV Energie AG, as a matter of precaution Dieter Hassel opted not to participate in the "Corporate Planning 2020" agenda item at the Supervisory Board meeting on 19 September 2019 and also not to receive the accompanying documents. We conducted a review and ascertained that all members of our body are independent in the sense defined in the German Corporate Governance Code.

Audit of annual and consolidated financial statements

PricewaterhouseCoopers GmbH Wirtschaftsprüfungsgesellschaft (PwC), Essen, was elected as auditor of the financial statements for the 2019 financial year by the Annual General Meeting on 8 March 2019. The declaration of independence from the auditor has been submitted to the Supervisory Board.

The annual financial statements of MVV Energie AG for the 2019 financial year have been prepared pursuant to the provisions of the German Commercial Code (HGB) and the German Stock Corporation Act (AktG). MVV's consolidated financial statements and combined management report have been prepared in accordance with International Financial Reporting Standards (IFRS) as applicable in the EU. The auditor audited the consolidated financial statements and combined management report of MVV and the annual financial statements of MVV Energie AG and granted unqualified audit opinions. Both the annual financial statements and the consolidated financial statements and combined management report for the 2019 financial year are published in the Federal Gazette (Bundesanzeiger).

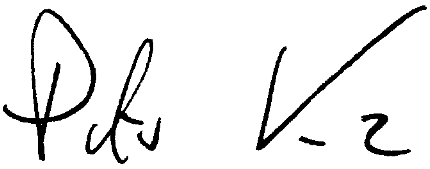
The Supervisory Board was provided sufficiently in advance with the consolidated financial statements, the combined management report, the annual financial statements of MVV Energie AG, the Executive Board proposal concerning the appropriation of profits and the auditor's audit reports. Both the Audit Committee and the full Supervisory Board examined these documents carefully and extensively. Both bodies discussed them in detail in the presence of the auditor. No objections were raised. At our meeting on 2 December 2019, we approved the consolidated financial statements and combined management report of MVV and the annual financial statements of MVV Energie AG. The annual financial statements are thus adopted. We endorsed the Executive Board proposal concerning the appropriation of profits. Moreover, the auditor audited the monitoring system which the Executive Board has established pursuant to § 91 (2) AktG. The auditor determined that the system was suited to the early detection of any developments that could threaten the company's continued existence.

The Executive Board submitted a Combined Non-Financial Declaration for the 2019 financial year. Prior to this, we discussed both the contents and the respective internal processes and checks at meetings of the Audit Committee and the Supervisory Board. We critically reviewed and assessed the plausibility and expediency of the Non-Financial Declaration for MVV's business model. The Supervisory Board did not raise any objections to the reporting by the Executive Board.

According to the Executive Board report on relationships with affiliated companies (Dependent Company Report) for the 2019 financial year, MVV Energie AG was not disadvantaged by the legal transactions performed with affiliated companies outlined therein. The auditor audited the report and granted the following audit opinion: "Following our audit and assessment performed in accordance with professional standards, we confirm 1. That the factual disclosures made in the report are accurate and 2. That the company's compensation in the transactions listed in the report was not incommensurately high." Both the Dependent Company Report and the associated audit report compiled by the auditor were submitted to the Supervisory Board in good time. Based on our own review, we concur with the auditor's assessment and approve its report.

Thanks

MVV was successful in the 2019 financial year, and that despite the difficult market climate in the energy industry. This success, which employees can feel proud of, was the result of everyone's contribution: from the Executive Board of MVV Energie AG to the executive boards and management teams at subsidiaries and shareholdings through to employees and works council members. Speaking on behalf of the entire Supervisory Board, I would like to express my thanks for all their work and dedication!



Dr. Peter Kurz

Chairman

Mannheim, December 2019

Share

Volatile stock markets

Global stock markets were influenced in the period under report by numerous political and economic conflicts. Markets had long ignored the consequences of the trade disputes initiated by US President Donald Trump with China and the European Union (EU), as well as the impact of Brexit, and rather focused on the loose monetary policies pursued by central banks. Once economic forecasts were lowered and earnings outlooks revised for domestic companies and after the US Federal Reserve raised interest rates shortly before the end of the year, share prices began to fall across the board. Between October and December 2018, the DAX fell by 13.8 % to 10,559 points. This was followed by a counter-reaction at the beginning of 2019, one that saw the DAX rise to above 12,300 points once again by the end of April. This was triggered by the progress made in the tariff negotiations and the postponement of the punitive tariffs of 25 % on Chinese goods initially announced for March. Markets also welcomed the extension in the Brexit deadline to the end of October.

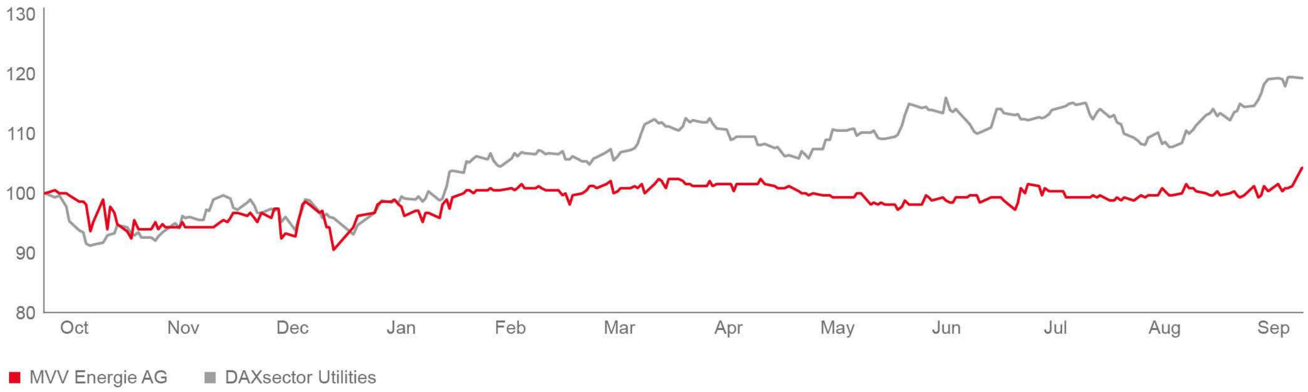
Developments in the further course of the year were characterised by marked fluctuations in share prices, with clear upward trends following on from equally distinct losses – depending on the degree of escalation or easing of tension in the trade disputes between the US and China and the EU. The DAX reached its annual high at 12,656 points in July. Following a renewed escalation in the trade dispute, the index lost ground again towards the end of September when, at 12,428 points, it was 1.5 % up on the previous year's figure. Investors in Germany grew increasingly concerned by a marked slowdown in the domestic economy, with profit warnings particularly conspicuous in the country's core chemicals, engineering and automotive industries. The tariff dispute has hit Germany's companies, with their dependency on exports and the global market, more than their US counterparts, with their greater focus on the domestic market. That meant the DAX was unable to track the strong performance of US stock exchanges, which reached new all-time highs in July.

Key figures on share and dividend of MVV Energie AG

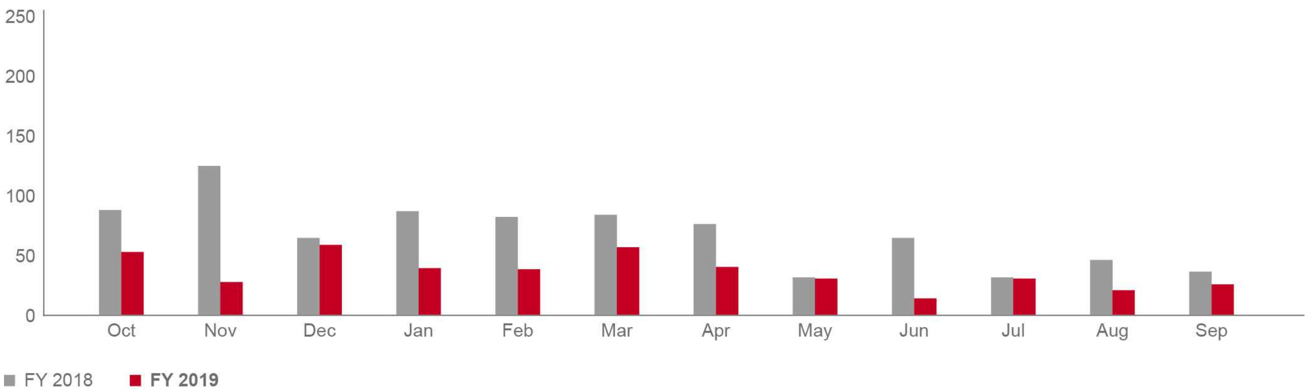
		FY 2019	FY 2018
Closing price on 30 September [1]	Euro	26.50	26.30
Annual high [1]	Euro	26.70	26.80
Annual low [1]	Euro	23.80	22.94
Market capitalisation at 30 September	Euro million	1,747	1,733
Average daily turnover	No. of shares	1,754	3,307
Number of shares at 30 September [2]	000s	65,907	65,907
Dividend per share [3]	Euro	0.90	0.90
Dividend total [3]	Euro million	59.3	59.3
Adjusted earnings per share [4, 5]	Euro	1.49	1.43
Cash flow from operating activities per share [5]	Euro	3.67	5.03
Adjusted carrying amount per share [5, 6, 7]	Euro	20.11	19.71
Price/earnings ratio [8]		17.8	18.4
Price/cash flow ratio [8]		7.2	5.2
Dividend yield [8]	%	3.4 [3]	3.4

1 XETRA trading
2 Number of shares at 30 September corresponds to weighted annual average
3 Pending approval by Annual General Meeting on 13 March 2020
4 Excluding non-operating measurement items for financial derivatives, excluding structural adjustment for part-time early retirement, excluding restructuring result and including interest income from finance leases
5 Number of shares (weighted annual average)
6 Excluding non-operating measurement items for financial derivatives
7 Excluding minority interests
8 Base: closing price in XETRA trading on 30 September

MVV ENERGIE AG SHARE PRICE PERFORMANCE COMPARISON FY 2019
(%)



MONTHLY SHARE TURNOVER
(no. of shares in 000s)



Increase in share price

The MVV Energie AG share was listed at Euro 26.50 on 30 September 2019, corresponding to an increase of 0.8 % compared with its price of Euro 26.30 on 30 September 2018. Including the distribution of a dividend of Euro 0.90 per share in March 2019, our share price rose year-on-year by 4.3 %. The DAXsector Utilities, the comparative sector index for the energy industry, improved by 19.3 % over the same period. We include our dividend payment in the share price performance chart.

Higher market capitalisation and lower trading volumes

Driven by our share price performance, our market capitalisation grew from Euro 1,733 million at the previous year's balance sheet date to Euro 1,747 million at 30 September 2019. The 4.8 % free float share was measured at around Euro 84 million (previous year: Euro 83 million). Around 0.4 million MVV Energie AG shares were traded on all German marketplaces in the 2019 financial year – 47.0 % fewer than in the previous year. That was also the main reason for the decline in the equivalent value of trading volumes, which fell to Euro 11 million (previous year: Euro 21 million).

Stable dividend

The Annual General Meeting on 8 March 2019 accepted the proposal from the Executive and Supervisory Boards and approved the distribution of a dividend of Euro 0.90 per share for the 2018 financial year. Based on 65.9 million shares, the distribution sum totalled Euro 59.3 million.

We intend to pay an appropriate dividend to our shareholders in future as well. At its meeting on 2 December 2019, the Supervisory Board adopted the dividend proposal for the year under report. According to this, the Executive and Supervisory Boards intend to propose a dividend of Euro 0.90 once again for approval by the Annual General Meeting on 13 March 2020. That would correspond to a dividend yield of 3.4 % based on the share's closing price in XETRA trading on the balance sheet date on 30 September 2019.

Data on MVV Energie share

Stock exchanges	XETRA Frankfurt, Official Trading in Frankfurt and Stuttgart, Free Trading in Berlin, Düsseldorf and Hamburg
Transparency level	Prime Standard
Market segment	Regulated Market
Index membership	Prime All Share, CDAX, DAXsector Utilities
ISIN International Security Identification Number	DE000A0H52F5
WKN Security Identification Number	A0H52F
Symbol	MVV1
Reuters Instrument Code	MVVG
Bloomberg Symbol	MVV1:GR
Share category	Individual registered shares (ordinary shares), prorated share of share capital per individual share: Euro 2.56
Share capital	Euro 168,721,397.76
Share capital (no. of shares)	65,906,796
Date of initial listing	2 March 1999

Our investor relations activities

In the year under report, as in previous years, we once again outlined the core features of our company and its strategic alignment to institutional and retail investors. We are always available for questions and suggestions from our shareholders. At analysts conferences, the Executive Board presented our company's latest business performance. On our website at **www.mvv.de/investors,** we make recordings of analysts conferences and the accompanying presentations available to the public.

MVV Energie AG is currently analysed by one financial institution, namely Landesbank Baden-Württemberg. As of 30 September 2019, this institution recommended holding our share. The price target stated by the analyst for our share amounted to Euro 24.70.

Combined Management Report

Group Fundamentals

GROUP STRUCTURE

Company structure and shareholdings

MVV Energie AG, which has its legal domicile in Mannheim, plays a key role as MVV's listed parent company. It directly or indirectly owns shares in the companies which belong to the Group and also has its own operations. Including MVV Energie AG, the MVV Group comprises 165 fully consolidated companies and 36 companies recognised at equity. The largest locations of our group of companies are in Mannheim, Kiel, Offenbach and Wörrstadt. We are also present in more than 20 countries. As well as Germany, these include the United Kingdom and the Czech Republic.

Organisational structure

We manage MVV in five segments on which we also base our external reporting:

The **Customer Solutions** reporting segment comprises the business fields of Retail, Business and Commodities.

The Environmental Energy, Wind/Biomethane and Project Development business fields are allocated to the **New Energies** reporting segment.

The **Supply Reliability** reporting segment includes the Combined Heat and Power and the Grids business fields.

The **Strategic Investments** reporting segment mainly consists of Köthen Energie and MVV Energie CZ, as well as the at-equity result of Stadtwerke Ingolstadt.

We pool our shared service companies and cross-divisional functions in the **Other Activities** reporting segment. The shared service companies perform metering, billing and IT services for MVV. Pooling their services enables us to generate benefits of scale and ensure high process quality

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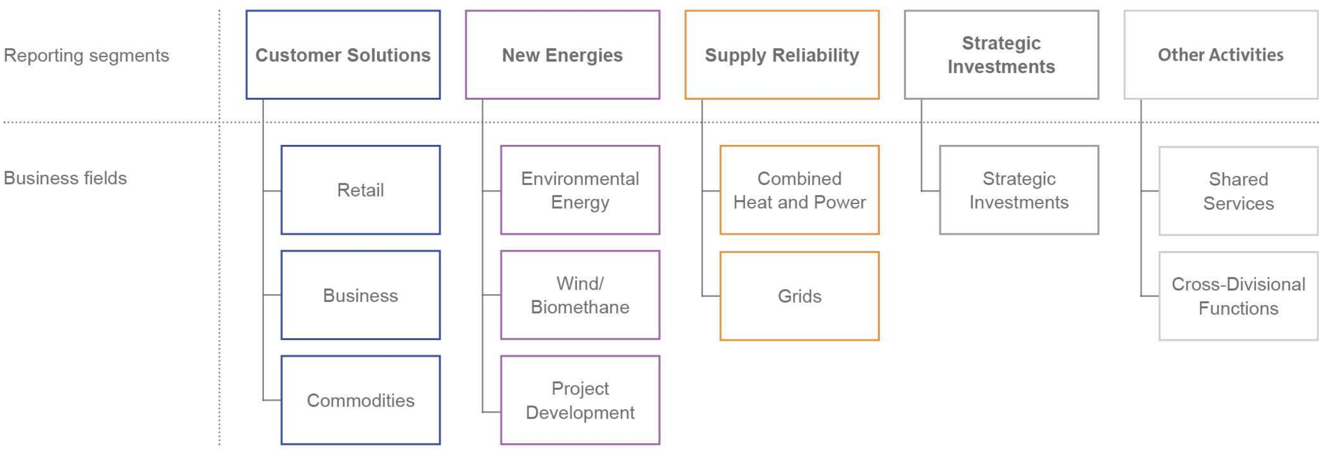
REPORTING SEGMENTS AND BUSINESS FIELDS



BUSINESS MODEL

We are one of Germany's leading energy companies and cover all major stages of the energy industry value chain: from energy generation, energy trading, energy distribution via proprietary distribution grid companies through to sales activities for energy solutions and our environmental energy business. We also produce and distribute water. Renewable energies are a particular focus of our business model. Here, our activities include project development and operations management for windfarms and solar parks, as well as biomass power plants.

Customer Solutions segment

The Customer Solutions reporting segment includes the energy and water retail businesses. As ever larger numbers of customers are opting for environmentally-friendly energy, we provide our private and business customers with a broad range of products and services meeting ecological standards. These range from renewable energies through to environmentally-friendly district heating and also include the portfolio of solutions we offer to private and business customers for self-generated solar power and e-mobility. E-mobility is also an integral component of our activities in Smart Cities, where we act as a system partner to local authorities and offer networked solutions for the towns and cities of the future. Our range of energy-related services for business customers focuses on projects and measures to enhance efficiency and optimise energy use at industrial, commercial, and housing industry clients. The Customer Solutions segment also includes the commodities, service and trading business at MVV Trading, where we pool energy procurement, energy product trading and portfolio management for our group of companies. We also offer these services to third-party customers on the market. Moreover, our trading subsidiary is also responsible for the renewable energies direct marketing business.

New Energies segment

In the New Energies reporting segment, we on the one hand pool our extensive competence in making ecological use of waste and biomass. We draw on this expertise not only at our plants in Mannheim, Offenbach, Leuna, Königs Wusterhausen and Flörsheim-Wicker, but also in the United Kingdom: In Plymouth, we operate a state-of-the-art energy from waste plant with heat extraction. Our biomass power plant with CHP capability at Ridham Dock works exclusively with waste timber and non-recyclable timber from regional sources. In the Scottish city of Dundee, we took over an existing energy from waste plant in the 2018 financial year and are building a new, ultra-modern plant in the direct vicinity. Furthermore, in Germany we also have biogas and biomethane plants. On the other hand, the New Energies segment also contains our proprietary wind turbines and photovoltaics systems, as well as our national and international project development business. In Germany, we focus above all on onshore wind turbines, while solar power is the focal point in the international business. We also provide operations management for windfarms and solar parks.

Supply Reliability segment

The Supply Reliability segment includes our generation portfolio for conventional energies with combined heat and power generation. These include our CHP plant in Offenbach and our shareholdings in such plants in Mannheim and Kiel. To be able to guarantee a reliable supply of energy and water at all times, high-performing grids are crucial. For this reason, this segment also includes the grid businesses at our distribution grid operators in Mannheim, Kiel and Offenbach. We are continually investing in modernising and expanding our grid infrastructure. Overall, we operate electricity, district heating, gas and water grids with a total length of more than 19,000 kilometres at the MVV Group.

CORPORATE STRATEGY

Climate neutrality by 2050 – at the latest

Protecting the climate is an indispensable aspect of our strategic alignment and thus forms part of our responsibility towards society. We are committed to the targets agreed in the Paris Climate Accord: Our aim is to be climate neutral as a company by 2050 at the latest.

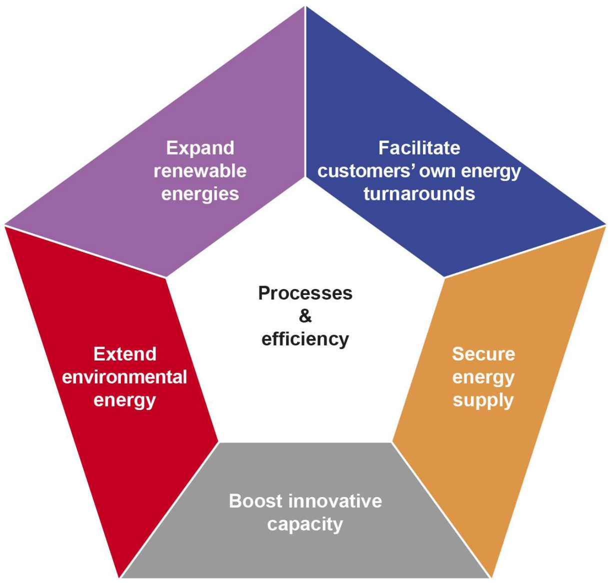
Specifically, this means that we will

- Continue to press consistently ahead with expanding renewable energies
- Reduce the emissions from our conventional generation positions to zero by 2050 at the latest
- Gradually reduce the CO_2 intensity of our heating energy generation
- Promote climate neutrality as achieved at and by our customers by implementing energy efficiency measures, planning and operating renewable energies plants and offering innovative services
- Look into new technologies facilitating the climate-neutral management of unavoidable remaining emissions.

The sustainability targets we already set in 2016 continue to act as major milestones as we head for climate neutrality. By 2026, we will thus be tripling the volume of CO_2 savings we achieve in the energy system to 1 million tonnes a year and doubling the volume of electricity we generate from renewable energies. Over the same period, we will connect 10,000 MW of renewable energies to the grid. Implementing this strategy will substantially reduce the CO_2 intensity of our business activities.

The future has already begun. With us.

The new energy world is currently being shaped by three key developments: Alongside the need for further decarbonisation by expanding renewable energies and the related process of decentralisation, the digitalisation of the energy industry is playing a key role and is promoting a process of technological change that affects all stages of the value chain and makes new solutions possible. With our investments in renewable energies, energy efficiency, supply reliability and developing innovative services and products enabling our customers to participate directly in the energy turnaround, we are actively addressing these trends and seizing them as an opportunity for the further development of our group of companies. In the years ahead, we will be investing a total of Euro 3 billion in the energy system of the future.



In implementing our corporate strategy, we aim to achieve a balanced structure of opportunities and risks and this way generate further value-based growth. This applies equally to the balance between regulated and unregulated business, between business fields and between business in Germany and abroad. When evaluating our investment projects, we therefore focus not only on their economic viability and sustainability, but also on their fitness for the future and their customer focus, as well as on their conformity with our strategic alignment.

Smart energy for everyone

In parallel, we are developing innovative, forward-looking products and services tailored to the specific needs of our business customers in the industrial, retail and housing sectors, as well as for our retail customers, with which we enable them to implement their own energy turnarounds. To this end, we can draw on our proven competencies and decades of experience. Furthermore, we supplement our range of products and services by forging strategic partnerships and acquiring shareholdings intended to assist us and our customers as we head towards climate neutrality.

Our customers benefit from the combination we can offer of energy industry and technical know-how, software intelligence, great experience and expertise. Together with our Econ Solutions subsidiary, for example, we offer one-stop energy monitoring and efficiency solutions for medium-sized industrial companies, large commercial businesses and chain operators. Thanks to our stake in DC-Datacenter-Group, our solutions portfolio also includes energy-efficient and high-availability data centres. For customers in the housing industry, we work with our joint venture Qivalo to offer new, all-round solutions meeting the requirements they have in terms of modern digital metering services.

A further focus involves expanding e-mobility, an area in which we offer charging infrastructure and smart charging management for industrial and business customers, as well as a combined product for our retail customers which comprises a photovoltaics system, a charging station and an electric vehicle. On this basis, we are also extending our activities in the field of smart cities. Acting as a partner to local authorities and innovative municipal utility companies, we are developing and implementing holistic concepts for the cities of the future and decentralised district solutions.

Key focus on renewable energies

When it comes to renewable energies, we cover the entire value chain from project development to building and operating plants through to energy marketing. Our focuses here include onshore wind power, where we aim to further expand our portfolio, and our activities using waste, biomass and biogas. Furthermore, for photovoltaics-based electricity generation we are reviewing the economic potential which this harbours for our group of companies. Overall, the targeted investments we are making in renewable energies mean that our generation portfolio is becoming significantly greener and more broadly diversified. In our project development business, we have different strategic approaches in Germany and abroad. Alongside our wind activities, in our German business we will in future be developing larger numbers of photovoltaics projects once again, while in our international business we will continue to focus with our Juwi subsidiary above all on photovoltaics projects in stable markets.

When it comes to generating energy from waste, waste timber and non-recyclable timber, we are one of the market leaders in Germany and are also generating growth with new projects in the British market. In generating electricity and heating energy from biogas, we have supplemented our existing biomethane cluster in the Magdeburger Börde region by adding a first organic waste fermentation plant in Dresden to our portfolio. A further plant, which will generate environmentally-friendly biogas from around 33,000 tonnes of organic waste from 2021 onwards, is currently in the planning stage in Bernburg (Saxony-Anhalt). A new organic waste fermentation plant in Sinsheim (Rhine-Neckar district) at which we are playing the leading role in its biomethane purification and marketing activities launched operations in September 2019.

Secure energy supply for our customers

Further expanding renewable energies involves challenges given the volatility in the volume of electricity fed into the grid by wind turbines and photovoltaics systems, which is significantly dependent on the time of day and weather conditions. We will provide our customers with a secure and reliable supply of energy at all times. In this respect, the reliability, intelligence and performance capacity of grids play a key role.

One particular focus relates to the future of heating energy. Especially in large built-up areas, the pipeline-based supply of heating energy is and is set to remain an indispensable component of a sustainable, forward-looking heating energy supply. District heating has a future – and that is why we are consistently investing in more renewable generation forms which thus involve lower volumes of CO_2. Our current projects include linking up our waste-fired CHP plant to the district heating grid in Mannheim and the region, as well as the new modular gas-powered CHP plant in Kiel. We are thus continually developing our heating energy vision and concept further with the aim of working towards decarbonisation and the integration of renewable energies into heating energy generation structures. Our concept is therefore based on remaining modern, innovative and secure and, over and above this, making a substantial contribution to achieving the climate neutrality objective.

Further expanding our environmental energy activities

The generation of electricity and heating energy from waste, an activity which is allocated to our environmental energy business field, is a key pillar of a modern, resource-efficient, recycling-based economy. In Germany, we are one of the leading operators of energy from waste and biomass plants. Not only that, we have been active in the United Kingdom for several years now with our waste-fired CHP plant in Plymouth and our biomass plant at Ridham Dock. We took over an energy from waste plant in the Scottish city of Dundee in the 2018 financial year and have operated this since then. We are currently building a highly efficient new heat and power plant in the direct vicinity. This is due to launch operations in 2020. We plan to make further investments in this business field in future as well.

At the same time, we are further developing our Mannheim energy location at Friesenheimer Insel and turning it into a valuable component of the energy turnaround and climate protection for Mannheim and the Rhine-Neckar metropolitan region. On the one hand, we are connecting our CHP plant to the existing district heating grid. In future, we will thus be using the heating energy produced from waste incineration not only for electricity generation and to supply steam to neighbouring industry, but also in our supply of heating energy to the region. By linking up the plant, we are making our environmentally-friendly district heating more renewable and fitter for the future.

We are implementing this forward-looking concept at our other locations as well. From the beginning of 2020, for example, the city of Merseburg will be supplied with heating energy from our energy from waste plant in Leuna. This way, more than half of the city’s district heating needs, which were previously covered by fossil fuel sources, will be secured in future with climate-friendly energy.

On the other hand, we are supplementing our CHP plants with innovative technologies. In Mannheim, for example, we will be recycling phosphorous from municipal sewage and simultaneously generating environmentally-friendly energy that will also be channelled into our heating energy grids in the city. We are working on analogous solutions in Offenbach and Leuna as well. This way, we are making use of the opportunities arising due to amendments in statutory sewage treatment requirements. The phosphorous thereby recovered is a valuable raw material in the production of manure and provides the basis for building a sustainable cycle.

We are further developing our innovative capacity

We repeatedly review all of our technologies, procedures and processes in terms of their suitability for future use – and that while operations are “up and running” and taking due account of the economic, ecological and political framework. To safeguard our ability to do this, we are continually developing our corporate culture further, retaining and expanding the competencies of our employees and also drawing on the opportunities offered by digitalisation.

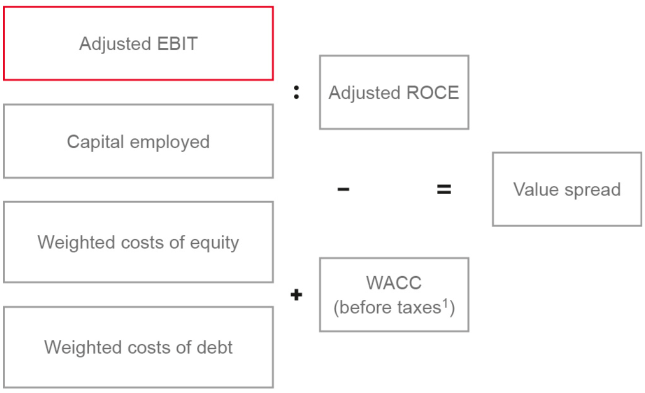
Digitalisation offers two-fold assistance: firstly in further optimising our existing processes and secondly in developing new, innovative and individual business models and forward-looking ways of entering into dialogue with our customers. The digital marketing platform, for example, makes it possible to plan, develop and execute individualised data-assisted sales and marketing campaigns. The possibilities offered by digitalisation help us in our technical and commercial operations, in efficiently structuring the cooperation between departments and business fields and in further optimising processes. Our IT strategy involves making greater use of cloud solutions, thus enabling us to meet the need for flexible and forward-looking software support even more closely.

VALUE-BASED CORPORATE MANAGEMENT

Our value-based corporate management is intended to sustainably increase MVV's value and to offer an attractive dividend to our shareholders. We achieve this by generating a positive value spread, i.e. when the return on average capital employed (adjusted ROCE) is higher than the costs of capital (WACC). The most important key figure in this respect is adjusted operating earnings before interest and taxes (adjusted EBIT), which we use to assess the medium and long-term success of our business activities. To calculate this key earnings figure, we eliminate earnings items resulting from the measurement of financial derivatives pursuant to IFRS 9 as of the reporting date, items resulting from the structural adjustment for part-time early retirement and, where applicable, restructuring expenses. We add interest income from finance leases reported below EBIT in the income statement to our adjusted EBIT. This income results from our contracting projects and therefore forms part of our operating business.

CALCULATION OF VALUE SPREAD

(simplified presentation)



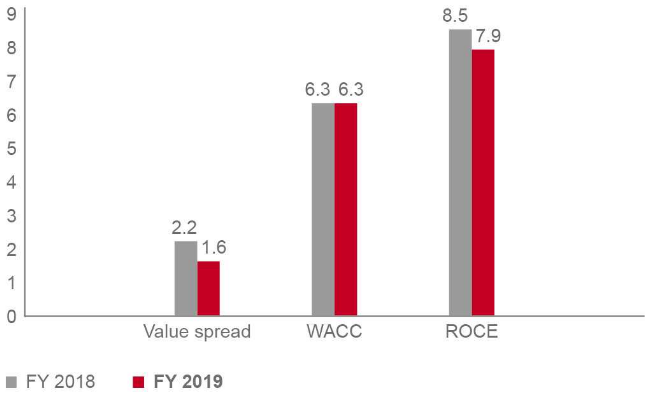
1 WACC before taxes = WACC after taxes/0.7

For the year under report, we have reviewed the individual parameters used to calculate MVV's WACC figure and updated these in some cases to account for changes in the market.

On this basis, we calculated equity costs of 6.5 % (previous year: 6.5 %) after taxes and debt costs of 1.7 % (previous year: 2.0 %) after taxes. The capital structure of MVV's peer group amounts to 55.5 % for equity (previous year: 54.1 %) and to 44.5 % for debt (previous year: 45.9 %). The Group tax rate is 30 % (previous year: 30 %). The WACC after taxes calculated on this basis for the 2019 financial year is unchanged at 4.4 % (previous year: 4.4 %) and 6.3 % before taxes (previous year: 6.3 %).

KEY VALUE MANAGEMENT FIGURES

(%)



The ROCE for the 2019 financial year amounted to 7.9 %, as against 8.5 % in the previous year. The lower ROCE figure was due to the decrease in adjusted EBIT and the higher average volume of capital employed compared with the previous year.

If the WACC before taxes of 6.3 % (previous year: 6.3 %) is subtracted from the ROCE of 7.9 % (previous year: 8.5 %), then it can be seen that the value spread for the year under report amounted to 1.6 % (previous year: 2.2 %).

TECHNOLOGY AND INNOVATION

The energy turnaround in Germany has triggered numerous processes of change within the energy industry. The trend towards decentralising the energy supply is continuing apace – and one consequence of this is the increasingly digital management of the energy supply. Against this backdrop, we are drawing on innovative technology and testing its suitability for future use. Our overriding objective here is to develop products and services that are ready for the market and take greater account of the needs of our customers.

The Customer Experience and Innovation department set up by MVV in 2014 helps us to meet this objective. Here, innovation managers and market researchers work together on research and development projects that are intended to lead to customer-oriented products and services. Not only that, employees from our operating business fields, such as our sales units, are also involved in the projects. As a result, the development expenses for technology and innovation, and particularly for our decentralised energy management activities, are not fully reflected in the research and development expenses reported under IFRS **Notes to Balance Sheet (Note 14), Page 113.**

In the following section, we present some of the projects we pursued in the 2019 financial year.

Decentralised energy management system in FRANKLIN District

C/sells, the energy turnaround project in which nearly 60 participants from industry, the energy sector and science are working together, is developing and demonstrating sample solutions for a digital, secure and environmentally compatible future energy supply. It is part of the nationwide “Smart Energy Showcase – Digital Agenda for the Energy Turnaround” initiative launched by the Federal Ministry for Economic Affairs and Energy (BMWi). Its aim is to develop a new smart grid approach with a cellular structure. The cellular system consists of several small units – so-called cells – which may be properties, districts or towns. Each of these cells attempts to balance its own electricity generation and electricity requirements directly on location. Energy is only exchanged with connected cells when local production is insufficient to cover current demand. This way, each cell assumes responsibility for the equilibrium of the overall energy system.

The FRANKLIN conversion space is one of nine cells participating in C/sells. Here, MVV is simulating and testing the energy system of the future by interconnecting the sectors of electricity, heating energy and mobility. We are putting this into practice by working with an IoT (Internet of Things) platform that enables diverse infrastructure components to be orchestrated within the district. The relevant IT infrastructure has already been designed. The energy system, which is in the planning and execution stage, consists of

- Effective heating energy generation with solar power and power-to-heat in the low-temperature heating grid
- A control system for several decentralised heating buffer storage facilities to provide heating flexibility
- Interfaces to the e-mobility charging infrastructure and to high-resolution smart meters.

District residents also play a decisive role by exchanging their electricity, heating energy and water meters, in this case for smart meters and the smart meter gateway needed for secure data transfer. This way, residents on the one hand gain transparency as to their energy consumption. On the other hand, the data acquired helps to provide visibility as to the energy flows in the district, a key prerequisite for optimising the entire district across all sectors. Moreover, as the project progresses various value-added services can be developed using the data and then tested by residents. For example, water pipe leakages and energy guzzlers left on by mistake, such as an oven, can rapidly be discovered. The first smart metering systems were installed for trial purposes in July 2019 and these are set to increase in number over the term of the project.

Innovation processes

Take-Off is an internal innovation process in which our employees contribute their own ideas and, with support from a team, implement these themselves. By adopting this process, MVV is taking a new approach to developing new products, solutions and business models. The process began in 2018 already, with 145 ideas submitted in total. Workshops were then held over several stages, with 16 ideas being further developed by teams taken from across different departments and hierarchical levels. In January 2019, it was decided which projects would be implemented.

One of these is the Climap project, which looks into how building heat losses can be made visible and subsequently remedied. This is currently being developed further within an internal project structure. The MyTalents project, for which an external company was founded, is developing an online platform for private services.

Our Take-Off internal innovation process is supplemented by an external innovation process. In this, we aim to absorb innovative impulses gained via networks and in cooperation with newly founded companies and to anchor these within our own company. Among other activities here, we took part in the past two years in an accelerator programme in Berlin.

E-mobility – MVV and City of Mannheim take energy turnaround to the streets

When it comes to shaping the transport turnaround and expanding the range of e-mobility options, MVV and the City of Mannheim are following a common path. MVV has developed solutions to link the energy system of the future, with its key focus on renewable energies, with sustainable mobility. Among other aspects, we are working to facilitate the coordinated expansion of public charging infrastructure in line with requirements.

Drawing on federal grants from the charging infrastructure subsidy programme, we have installed 25 new charging stations for electric vehicles in Mannheim and the region since early summer 2019. By spring 2020, we will equip 30 further locations with around 100 electric vehicle charging stations. For the third phase of the subsidy programme, which is set to run until the end of 2020, we have applied for 70 further normal and 40 fast charging stations. These will also be installed in Mannheim and the surrounding districts. Thanks to this programme, more than 300 charging stations will then be available in the region in total.

KielFlex – Kiel to be a real-time laboratory for e-mobility

The overall project – “Kiel as a Model City for Installing a Charging Infrastructure in a Flexible Power Grid to Achieve Emissions Reductions in the Transport Sector” (KielFlex) – is intended to reduce transport-related emissions, and here in particular nitrogen oxide. The circumstances surrounding the electrical infrastructure and inner-city traffic are factored into the project, while measures to increase the degree of electrification are also being developed, evaluated and implemented. KielFlex is being promoted by a consortium which includes ABB AG Mannheim, CAU University Kiel, Fraunhofer Institute IFF Magdeburg, Kieler Verkehrsgesellschaft, the state capital of Kiel, Seehafen Kiel, Stadtwerke Kiel AG and SWKiel Netz GmbH.

With KielFlex, Stadtwerke Kiel will be establishing a smart charging infrastructure and control software. It will develop new, flexible tariff models, taking due account of load management, and thus create attractive charging solutions for the housing industry, multistorey car parks and fleet operators. SWKiel Netz will in particular be investigating the market expansion of electric vehicles in the grid region, as well as potential repercussions for the grid, such as local bottlenecks and peak loads. This will give rise to guidelines for basic planning and operations management for medium and low-voltage grids.

Company ideas management

Our ideas management aims to actively involve employees in continuous improvement processes at our company. This way, we support our corporate strategy with topic-specific special campaigns and continually call on the wealth of ideas available among our workforce.

In the 2019 financial year, we completed 485 proposed improvements. The ideas implemented enabled us to save Euro 138 thousand in the first year of implementation. The proposal winning the top award dealt with tamper-proof key rings used in customer key management, which produced savings of Euro 34 thousand. Overall, we distributed prizes of Euro 37 thousand to our employees. The multiyear benefit (over 4 years) currently amounts to Euro 313 thousand.

Group Business Performance

» Adjusted sales and adjusted EBIT consistent with our expectations
» Investments in sustainable growth

MAJOR DEVELOPMENTS AND EXECUTIVE BOARD SUMMARY

Investments in the future

We have been drawing on the opportunities presented by the conversion in the energy system for years already. By making targeted investments, we are creating a basis for MVV to generate sustainable profitable growth. In the 2019 financial year, three major investments were at the forefront of our activities.

In Kiel, we completed our new gas-powered CHP plant as the successor solution to the joint power plant (Gemeinschaftskraftwerk Kiel – GKK). This will secure the supply of district heating to the city and is expected to take up commercial operations at the end of 2019. With a volume of Euro 290 million, it represents the largest investment we have made in recent years.

In Dundee in Scotland, we are currently building what will be one of the most up-to-date energy from waste plants in Europe. The new plant is scheduled to launch operations in 2020 and will generate heating energy and electricity from a total of 110,000 tonnes of waste a year. This way, we are also helping to ensure the clean, efficient and sustainable treatment of non-recyclable waste in the region. Overall, we are investing around Euro 135 million in Dundee.

At our Mannheim location, we are linking up our CHP plant to the existing district heating grid, involving an investment of around Euro 100 million. From the 2019/2020 heating period, this will enable us to use the heating energy from waste incineration not only to generate electricity and supply steam to neighbouring industry, but also for the district heating supply in the region. Moreover, we will extend the plant to include a sewage incineration facility that will enable the phosphorous contained in the sewage to be recovered. This way, the location will become an even more important component of the energy turnaround and of a recycling-based economy for the City of Mannheim and the Rhine-Neckar metropolitan region.

In addition to these three major projects, we also initiated a large number of further projects in the 2019 financial year. October 2018, for example, witnessed the ground-breaking ceremony in Leuna for our joint project with Stadtwerke Merseburg, which operates a district heating grid of more than 40 kilometres in length. From the beginning of 2020, the city of Merseburg will be supplied with heating energy from our energy from waste plant in Leuna. This will cover more than half of the city's annual district heating needs.

We invested a total of Euro 310 million in the 2019 financial year. Thanks to our strong financing structure and solid adjusted equity ratio of 34.5 %, we will be able to uphold this pace of investment in future as well.

Project development business gains momentum

One key vehicle of our activities to expand renewable energies is our project development business. In the 2019 financial year, we connected renewable energies plants with capacities of 460 MW to the grid in Germany and our international markets. Our Juwi and Windwärts subsidiaries are currently building two windfarms with a total capacity of around 24 MW. Upon their completion in the 2020 financial year, we will be taking these into our own generation portfolio. We have also been awarded the tenders for numerous new projects, especially in our photovoltaics business. In Colorado, for example, Juwi will be installing a 123 MW photovoltaics plant, our largest project to date in the US. In Greece, Juwi is building the largest solar park in South-Eastern Europe.

MVV Smart Cities

At conversion sites in the City of Mannheim, we are already realising the energy system of the future, implementing networked mobility solutions and developing smart districts and commercial and industrial estates. Since the 2019 financial year, we have contributed this expertise to our new activities in the field of smart cities. Acting as a system partner to local authorities, we offer networked solutions for the towns and cities of the future. Here, we build on grids and networks already available on location and draw on new IT technologies such as cloud and edge computing to extend them into the “Internet of Things”. This way, we enable residents to make their living space more efficient and sustainable and thus improve their quality of life.

Consistent pursuit of efficiency measures

Sustainable efforts to boost competitiveness are a crucial factor in MVV’s successful further development. In the 2017 financial year, for example, we already launched a project to compile a forward-looking concept for jointly offering shared services at MVV, Stadtwerke Kiel and Energieversorgung Offenbach. In the year under report, we merged the shared service companies for metering, billing and customer services at a subsidiary. By founding Soluvia Energy Services, we will be able to focus even more closely on changes in the industry and the dynamic market climate.

Adjusted sales and adjusted EBIT slightly lower than in previous year

In the 2019 financial year, we generated adjusted sales of Euro 3.7 billion, as against Euro 3.9 billion in the previous year. The reduction in sales is on the one hand a reflection of lower electricity trading volumes. On the other hand, since the beginning of the 2019 financial year one effect of the newly introduced IFRS 15 involves netting renewable energies compensation items between sales and cost of materials. This does not have any impact on earnings but has, as expected, resulted in lower sales. The performance in earnings compared with the previous year is due on the one hand to non-recurring one-off items in the previous year. On the other hand, earnings for the year under report were adversely affected by follow-up costs for the joint power plant in Kiel (Gemeinschaftskraftwerk Kiel – GKK). Due above all to a damaged turbine at Ridham Dock, plant availability in our environmental energy business fell short of the previous year. Thanks in particular to the positive development in electricity and biomass prices and the higher at-equity result, we were able to compensate for these negative factors. Earnings in our project development business also performed better than in the previous year, a development driven above all by a stronger performance in the international business. Overall, our adjusted EBIT of Euro 225 million fell only slightly short of the previous year’s figure (Euro 228 million).

Earnings before taxes (adjusted EBT) fell year-on-year by Euro 11 million to Euro 168 million. This reduction was not reflected in adjusted annual net income after minority interests which, due to lower adjusted taxes on income, rose by Euro 4 million to Euro 98 million. Adjusted earnings per share came to Euro 1.49, as against Euro 1.43 in the previous year.

Executive Board summary of business performance and economic position

Given challenging conditions in the energy industry and in terms of energy policy, we can look back on a good year. We initiated, pressed further ahead with or successfully completed various projects and thus set MVV on course for sustainable profitable growth.

We met our targets for adjusted EBIT and adjusted sales: At Euro 225 million, adjusted EBIT fell 1 % short of the previous year’s figure, while sales decreased by 6 %. We had forecast slight reductions in both key figures.

We are convinced that MVV has the right strategic position to use the energy system transformation as an opportunity and be able to generate further long-term growth – even if, as expected, this is not directly reflected in our operating earnings for the 2019 financial year. After all, one aspect of the new climate in which we operate is that our earnings performance has become more volatile overall.

Comparison of expected and actual business performance and outlook for 2020 financial year

	Forecast FY 2019	Results FY 2019	Outlook FY 2020
Adjusted sales	Forecast adjusted after end of 1st half of 2019: slight reduction on previous year's figure (Euro 3.9 billion)	Sales of Euro 3.7 billion	Slight increase on previous year
Adjusted EBIT	Forecast adjusted after end of 1st half of 2019: slight reduction on previous year's figure (Euro 228 million)	Adjusted EBIT of Euro 225 million	Slight increase on previous year; depending on weather and wind conditions, electricity and fuel prices, the development in waste and biomass prices, the spreads on conventional generation, the market and competitive climate and the availability of our plants. High volatility in renewable energies project development business
Adjusted equity ratio	Target > 30%	Adjusted equity ratio of 34.5%	Target > 30%
Adjusted ROCE	Slightly below previous year's level (8.5%)	Adjusted ROCE of 7.9%	At around previous year's level
Investments	Significant increase on previous year (Euro 290 million)	Total investments of Euro 310 million	Moderate increase on previous year
Employees	Increase in personnel totals in growth fields; further efficiency measures in existing business	Increase in personnel totals to 6,113 employees at 30 September 2019 (previous year: 5,978)	Increase in personnel totals in growth fields; further efficiency measures in existing business

BUSINESS FRAMEWORK

Energy policy changes

Key energy policy factors

Following the publication in January 2019 of the final report of the Commission on Growth, Structural Change and Employment (KWSB) established by the Federal Government, the "Climate Cabinet" of the Federal Government took up its work in April 2019. This resulted in the Federal Government presenting the initial cornerstones of its 2030 Climate Protection Plan in September 2019. One key aspect is the CO_2 pricing due to take effect in the transport and heating energy sectors from 2021. Revenues from this levy are to be used to benefit people and business with measures such as lowering electricity costs and raising the allowance for long-distance commuters. These are accompanied by numerous sector-specific measures, such as subsidies for district heating grids and expanding e-mobility. Parts of the overall package require approval by the Federal Council and may be further amended there. The underlying framework then agreed will play a significant role in determining the options and scope available to the energy industry, and thus also to MVV, to shape developments in the coming years.

Implementation of coal exit

In its final report, the KWSB sketches out the exit from coal and provides a basic roadmap for further decarbonising the energy industry in Germany.

With the German Structural Reinforcement Act (Strukturstärkungsgesetz) adopted by the Federal Cabinet in August 2019, the Federal Government will be supporting those regions particularly affected by the exit from coal. The next step on the way towards decarbonisation is the hard coal exit legislation, which is still being drafted. The current draft provides for a two-stage process for exiting from coal for electricity generation. The first stage provides for voluntary decommissioning of hard coal power plants. Here, there are plans to introduce a tendering mechanism to determine compensation payments for operators. A regulatory solution is then envisaged for the second stage. The Federal Government has underlined its intention to enact both projects in law before the end of the 2019 calendar year.

Introduction of CO_2 pricing in Germany

One main point in the 2030 Climate Protection Programme presented by the Federal Government is the future pricing of CO_2 emissions in the transport and heating energy sectors. Previously, these were not recorded in the European Emissions Trading System (ETC). District heating from ETS plants is not expected to be affected. CO_2 pricing is initially intended to begin in 2021 at a fixed price of Euro 10 per tonne of CO_2. By 2025, this price would then gradually rise to Euro 35 per tonne of CO_2. From 2026, it is planned to move to a national trading scheme with emission certificates, which would decrease in number from year to year. Prices for 2026 range from Euro 35 to Euro 60 per tonne of CO_2. The decision as to whether upper and lower threshold limits will still be needed for the CO_2 price after 2026 is not due to be taken before 2025.

Energy efficiency in buildings

The German Building Energy Act (GEG) is intended to pool various individual norms and account for new European requirements. The norms thereby consolidated come from the German Building Energy Saving Act (EnEG), the German Ordinance on Energy-Saving Heat Insulation and Energy-Saving Systems Technology in Buildings (EnEV) and the German Renewable Energies Heat Act (EEWärmeG). At the same time, the Coalition Agreement requires the governing parties not to make building energy efficiency requirements any stricter. It therefore remains to be seen whether the GEG legislation can provide any notable momentum for the heating energy turnaround. Since the first draft was issued in November 2018, the Federal Government has repeatedly deferred consideration of the project.

The White Paper issued by the Federal Government for its 2030 Climate Protection Programme envisages introducing tax incentives for energy-efficiency building refurbishments, irrespective of the specific technology used. Existing subsidy programmes are to be merged into a "Federal Support for Efficient Buildings" scheme and allotted additional funds. Alongside direct support for converting from oil heating to efficient heating systems, the individual measures provided for also include boosting energy efficiency measures in urban districts.

EU Clean Energy Package finally adopted

In May 2019, the EU Council of Ministers provided definitive approval for the remaining legislative sections of the Clean Energy Package. This marks the completion of the legislative process for the "Winter Package", which began with publication of the EU Commission's proposal in November 2016. The most important topics involve expanding renewable energies and decentralisation. The timeframe for expanding renewable energies in the EU has been extended, with the renewable share of electricity generation to be achieved by 2030 being raised from 27 % to 32 %. Not only that, the share of heating energy from renewable energies is to be raised by 1.1 % a year; where waste heat is also included, the annual growth rate should amount to 1.3 %. This way, the EU's internal electricity market is being further prepared for the conversion in the supply system. This will increasingly consist of decentralised prosumers and electricity storage facilities and will be far more flexible.

MVV welcomes these measures to strengthen the EU's internal electricity market and the improved competitive climate within and between member states. The new requirements will align the internal electricity market to the growing share of energy generation provided by renewable energies and thus create a basis for ensuring a reliable and affordable electricity supply in the EU. For MVV, this may result in growth potential relevant to its major reporting segments.

German Consolidated Energy Act in force

The German Consolidated Energy Act (EnSaG) came into force in December 2018. This legislation contains amendments to several acts and ordinances relevant to the energy industry, and in particular to the German Renewable Energies Act (EEG) and the German Combined Heat and Power Generation Act (KWKG). Among other aspects, the EnSaG legislation also provides for special tender rounds to be held for open-space photovoltaics plants and onshore wind turbines in the years from 2019 to 2021, with total capacities of 4 GW to be tendered for each energy form.

MVV welcomes this decision, which will also be of significance for the New Energies reporting segment. After all, special tender rounds represent one way of accelerating the expansion in renewable energies. It is also pleasing to note that the Federal Government's 2030 Climate Protection Programme includes the target of achieving a 65 % share of renewable energies by 2030. Subsidies for combined heat and power generation have been extended by three years until 2025, increasing planning reliability for the construction of new plants and modernisation of existing plants. This extension is nevertheless still subject to state aid approval by the European Commission. The key points of the 2030 climate package also provide for further extension in CHP subsidies through to 2030.

Further legal amendment corrects design faults in EEG tenders

The German Renewable Energies Act (EEG) has been amended to facilitate implementation of the special tenders provided for in the German Consolidated Energy Act (EnSaG). The omnibus legislation introduced to accelerate energy line expansion will ensure that the special onshore wind power tender rounds will also be free of any market distortions resulting from special privileges.

Higher Regional Court in Düsseldorf nullifies decision on productivity factor

In appeal proceedings in July 2019, the Higher Regional Court (OLG) in Düsseldorf nullified the general sector productivity factor (Xgen) of 0.49 % set by the Federal Network Agency (BNetzA) for gas in the third regulatory period. This factor reduces the permissible revenue cap based on assumed progress in enhancing the productivity of grid operations compared with the overall economy. It is significant for the level of grid fees, and thus earnings at grid operators. This effect is countered by inflation, which is expected to remain low for the foreseeable future. The BNetzA is obliged to issue a new decision concerning the factor it has set. The ruling allows appeals to be filed at the Federal Supreme Court. In November 2018, the BNetzA had specified an Xgen of 0.90 % for electricity supply grid operators, with large numbers of grid operators taking legal action against this as well.

Federal Supreme Court upholds rates of equity return set by Federal Network Agency

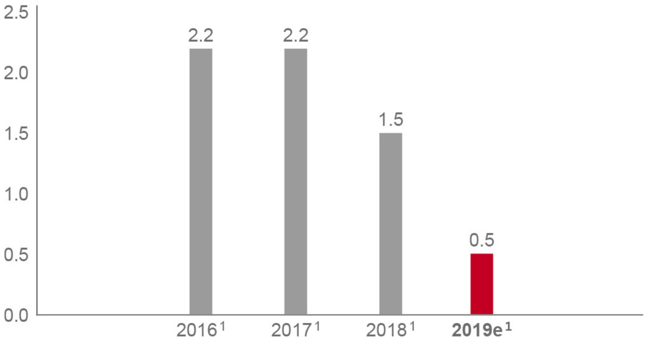
With a decision taken on 9 July 2019, the Federal Supreme Court (BGH) confirmed the reduction by the Federal Network Agency (BNetzA) in the rates of equity return for electricity and gas grids in the third regulatory period and thus overrode the decision to the contrary taken by the Higher Regional Court (OLG) in Düsseldorf on 22 March 2018. This will reduce the level of future grid fees, and thus earnings, in our Supply Reliability reporting segment. Although the BGH has not yet published the reasons for its decision, the industry as a whole will find it difficult to understand the decision, as it fails to take adequate account of the forward-looking expansion in distribution grids. The levels of return set by the BNetzA in 2016 are among the lowest in Europe, and that even though Germany has some of the greatest grid expansion needs of any EU member state. To master the tasks needed to integrate renewable energies, considerable sums will still have to be invested in energy grids. At the same time, new energy policy targets, such as sector coupling, e-mobility and digitalisation, also have to be accounted for. In many cases, these require grids as points of connection both between consumers and producers and between various forms of energy. The lower rates of return will make it more difficult to mobilise the necessary capital.

Market climate and competition

German economy with lower growth

In their autumn survey, experts at Germany's leading economic research institutes forecast GDP growth of 0.5 % for the 2019 calendar year. This represents a slowdown in the pace of growth compared with the previous year. Global trade conflicts and the prospect of Brexit are continuing to hold back the German economy.

GDP GROWTH IN GERMANY
(%)



1 Calendar year

Source: Forecast in autumn survey of leading German economic research institutes (September 2019)

Reduction in electricity generation in Germany

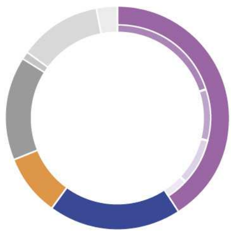
In October 2019, the Association of the German Energy and Water Industries (BDEW) published its estimates of gross electricity generation in Germany. A total of 447.8 billion kWh of electricity was generated in the first nine months of 2019, around 5 % less than in the previous year's period (472.9 billion kWh).

Renewables share of German electricity generation rises to 41 %

According to BDEW estimates, the share of gross electricity generation in Germany accounted for by renewable energies totalled 41 % in the first nine months of the 2019 calendar year, up from 35 % in the previous year's period. This growth was particularly due to onshore wind turbines, which raised their electricity generation volumes by 17 %. Generation volumes at offshore wind turbines rose by 31 %. Electricity generation volumes at photovoltaics systems grew year-on-year by 3 %. Biomass and biogenic municipal waste were used to generate 1 % less electricity than one year earlier. In total, around 183 billion kWh of electricity was generated from renewable energies.

GROSS ELECTRICITY GENERATION IN GERMANY
Shares (%)

	2019[1]
Electricity from renewable energies	41
Wind power	20
Photovoltaics	9
Biomass, including biogenic municipal waste	8
Water	4
Lignite	19
Hard coal	9
Natural gas	15
Petroleum products	1
Nuclear energy	12
Other	3



1 January to September 2019

Slowdown in wind power expansion

In January 2019, the German Wind Energy Association (BWE) published its "Wind Energy Fact Sheet Germany" for the 2018 calendar year. Overall, 3,371 MW of wind power capacity, of which 2,402 MW onshore, was newly installed in Germany. Total installed wind power capacities therefore amounted to 59,313 MW, around 6 % higher than the previous year's figure.

Gross onshore wind power capacity totalling 287 MW was added in Germany in the 1st half of the 2019 calendar year. This represents the lowest figure since the introduction of the German Renewable Energies Act (EEG) in 2000. The slowdown in the addition of new capacities, a trend already apparent in the previous year following record figures in 2014 to 2017, has thus continued. Compared with the first six months of the 2018 calendar year, the volume of wind power capacity newly added fell by 82 %.

Positive market expectations underpin our strategic alignment

Making a long-term success of the energy turnaround is not just about converting the electricity sector to renewables; all sectors have to decarbonise. The key building block here is to interlink energy flows across these sectors and connect them to the energy industry (sector coupling). The Federal Government underlines this objective in the 2030 Climate Protection Programme intended to implement its 2050 Climate Protection Plan. Using green electricity across all sectors will help to force out fossil fuels. The direct use of renewable energies is set to rise significantly, especially in the heating energy and transport sectors. In transport, the transition from combustion engines to e-mobility will be promoted. By 2030, between 7 and 10 million electric vehicles should be registered in Germany, with 1 million charging stations installed by then. Together with decarbonised heating energy grids, sector coupling powered by electricity from renewable energies should enable people to live and work in buildings on a climate-friendly basis.

The “Heat Transition 2030” study published by the Agora Energiewende think tank is based on the assumption that the building heating energy turnaround will be driven by three key factors: energy efficiency, low-CO_2 heating grids and nearby renewable energies. The study sketches out the scale of contribution required from each factor, particularly if the country is to achieve its ambitious climate protection targets for 2050. It concludes that significantly expanding conurbation heating energy grids has a key role to play in facilitating the energy turnaround in the building heating energy sector. The expansion potential for (district) heating grids from around 10 % to around 23 % of end energy needs by 2050 appears capable of significant improvement.

The quality of life in cities can be noticeably enhanced by making extensive use of digital solutions. “Smart” cities cut daily commuting times, lower rates of criminality and reduce waste volumes, while also improving air quality. Those are the findings of “Smart Cities: Digital solutions for a more liveable future”, a study issued by the McKinsey Global Institute (MGI). In their study “The German Smart City Market 2017–2022: Facts and Figures”, the eco Association of the Internet Industry and Arthur D. Little predict that the smart city market will be one of the fastest-growing sectors, both in Germany and around the world, in the years ahead. Revenues in this sector in Germany are forecast to double from around Euro 20.4 billion in 2017 to approximately Euro 43.8 billion in 2020.

In the long term, these trends will benefit our growth fields: our energy generation from renewable energies, our project development and operations management for renewable energies plants, our direct marketing of these plants, our decentralised heating and local heating supply systems, and our energy efficiency and service offerings.

Disparate developments in wholesale prices for fuels and electricity in period under report

Wholesale prices for fuels and electricity moved in different directions during our year under report.

Listed prices for Brent crude oil for supply in the following month (front month) ranged from US$ 49.95 to US$ 86.70 per barrel in the 2019 financial year. At US$ 65.72, the average barrel price in the year under report was US$ 4.21 down on the previous year’s figure of US$ 69.93. The very strong supply situation led prices on the oil market to fall sharply at the beginning of the period under report. Having peaked above US$ 86 per barrel in early October, the market fell to its annual low of less than US$ 50 at the end of December 2018. A moderate stabilisation in prices led to highs of more than US$ 75 per barrel in the 1st and 2nd quarters of the 2019 calendar year. In the further course of the year, however, this recovery proved to be temporary. From the summer onwards, concerns about the robustness of the global economy led to more marked sell-offs. By bottoming out at US$ 56, the price per barrel nevertheless avoided new annual lows. Within this weaker market climate, the attack on Saudi-Arabian oil production in mid-September 2019 led to the sharpest rise in the oil price in a single day in nearly 15 years. Sales at US$ 72 per barrel nevertheless proved unsustainable over time. The rapid re-availability of the facility and global de-escalation efforts significantly eased the situation.

Average natural gas price listings for the front-year product in the NetConnect Germany (NCG) market region came to Euro 20.53/MWh in the year under report, Euro 1.11/MWh higher than in the previous year. Overall, front-year prices showed only weak trends in the period under report. The peak in prices at Euro 26.50/MWh at the beginning of October 2018 was not confirmed in the 1st quarter of the 2019 calendar year, with downward pressure coming from mild temperatures and the weak development in oil prices. This weak trend continued in the following quarters. Well-filled gas storage facilities following the mild 1st quarter and very good overall availability of LNG and pipeline gas led prices to their annual low of Euro 17.10/MWh at the beginning of September 2019.

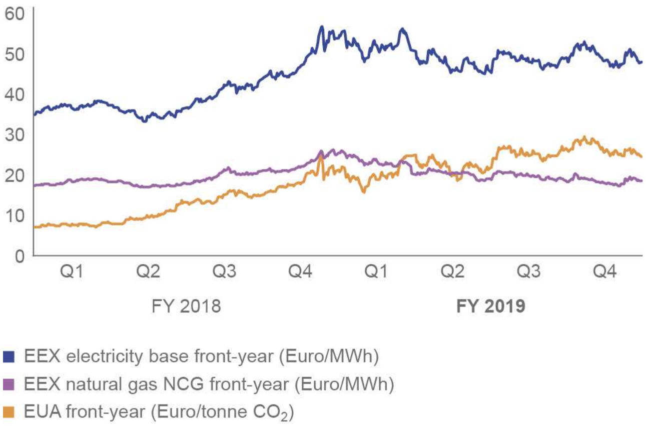
Coal prices maintained their downward trend in the 2019 financial year. Compared with the previous year, front-year prices per metric tonne for hard coal in the ARA region (Amsterdam, Rotterdam, Antwerp) fell by US$ 8.58 to an average of US$ 75.66. Key drivers of this development were the fall in prices in the oil market, mild temperatures in the 1st quarter of the 2019 calendar year and weaker demand in Asia, and that while stocks remained high. Having peaked at US$ 95.50 at the beginning of October 2018, the price fell to US$ 62 in mid-June 2019, with this weak trend being exacerbated by macroeconomic concerns in the summer months in particular. The temporary highs in prices in mid-September, which were triggered by a lack of clarity as to the availability of a nuclear plant in France, did not continue as the month progressed.

In the year under report, prices for base load electricity for supply in the following year rose by Euro 9.20/MWh to an average of Euro 48.75/MWh. The annual high was recorded at Euro 54.20/MWh in mid-October 2018. Prices fell significantly as the year progressed and reached their annual low at Euro 44.50/MWh. Unlike the oil and gas markets, however, electricity did not follow a downward trend in the period under report, but rather moved sideward within a broad range throughout the 2019 financial year. Key drivers were developments in prices on the emissions and coal markets, mild weather conditions in the 1st quarter of the 2019 calendar year and the macroeconomic situation in Germany. Concerns that individual French nuclear power plants might be unavailable proved unsubstantiated. The peak prices previously attained were therefore not upheld in the further course of the year.

Emission right prices per tonne of CO_2 for supply in the following year averaged Euro 23.89 in the 2019 financial year, Euro 11.04 higher than the equivalent figure for the previous year. In November 2017, the EU Commission, European Council and the EU Parliament had reached agreement on the post-2020 reform of emissions trading. This lent positive momentum to the market and drove prices upwards in the period under report. Having dipped to a temporary low at Euro 15.45 at the beginning of November 2018, prices rose significantly in the further course of the year, reaching their annual high at Euro 29.84 in mid-July 2019. More recently, prices lost ground due to weaker coal prices in response to economic concerns and the political uncertainty surrounding Brexit, and reached a temporary low of Euro 25 at the beginning of September 2019. Despite recent sell-offs, however, the upward trend in the emissions market remains intact.

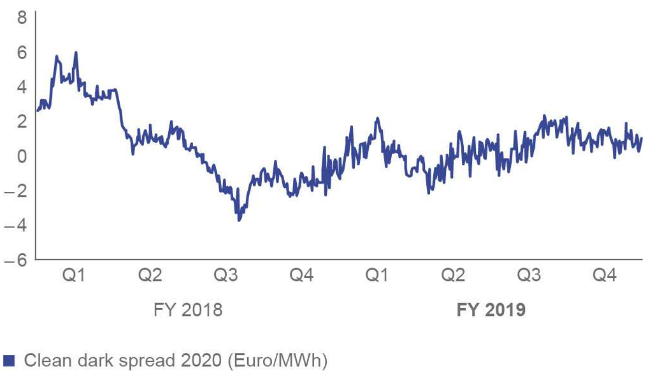
Having begun the year at Euro –1.30/MWh, the clean dark spread (CDS), i.e. the margin from generating electricity from hard coal, showed slightly positive developments in the 1st quarter of the year under report. Lower temperatures in the period from October to December 2018 led spreads to average at around Euro 0.30/MWh. In the months from January to March 2019, the spread showed slightly negative developments once again, reaching an average level of Euro – 0.30/MWh. Lower prices in the coal market, simultaneously accompanied by robust electricity prices, led the CDS to recover in the following six months. In the period from April to September 2019, it traded at an average of Euro 0.90/MWh.

DEVELOPMENT IN WHOLESALE MARKET PRICES FOR ELECTRICITY, GAS AND CO_2 RIGHTS



DEVELOPMENT IN WHOLESALE PRICES FOR OIL AND COAL

DEVELOPMENT IN CLEAN DARK SPREAD FOR 2020



MVV's market position

- 69 % of all the electricity we generated in Germany in the 2019 financial year was based on renewable energies. For Germany as a whole, renewable energies accounted for 41 % of gross electricity generation in the first nine months of the 2019 calendar year.
- Together with our Juwi and Windwärts subsidiaries, we are one of Germany's leading renewable energies project developers.
- Directly marketing electricity from renewable energies in the market premium model also forms part of our portfolio. We had renewable energies plants with total capacities of around 4,000 MW under contract in Germany at the end of the year under report. This makes us one of the country's largest direct marketers.
- We are also one of the German market leaders when it comes to generating energy from biomass. In the 2019 financial year, we operated 19 biomass and biogas plants in Germany. These plants generated a total of 293 million kWh of electricity and 162 million kWh of heating energy. Moreover, we generated 233 million kWh of biomethane at four biomethane plants.
- Our grid companies in Germany have district heating grids with a total length of 1,159 kilometres. In the year under report, we generated district heating turnover of 5.9 billion kWh in Germany, which make us the country's second-largest district heating provider.
- We are one of Germany's top three operators of energy from waste and biomass plants. Our German locations accepted a total of 1.7 million tonnes of waste and refuse-derived fuels for incineration in the 2019 financial year.
- In the Czech heating energy market, our subsidiary MVV Energie CZ a.s. operates at 15 locations, making us one of the market leaders.

Impact of weather conditions

Temperatures around previous year's level

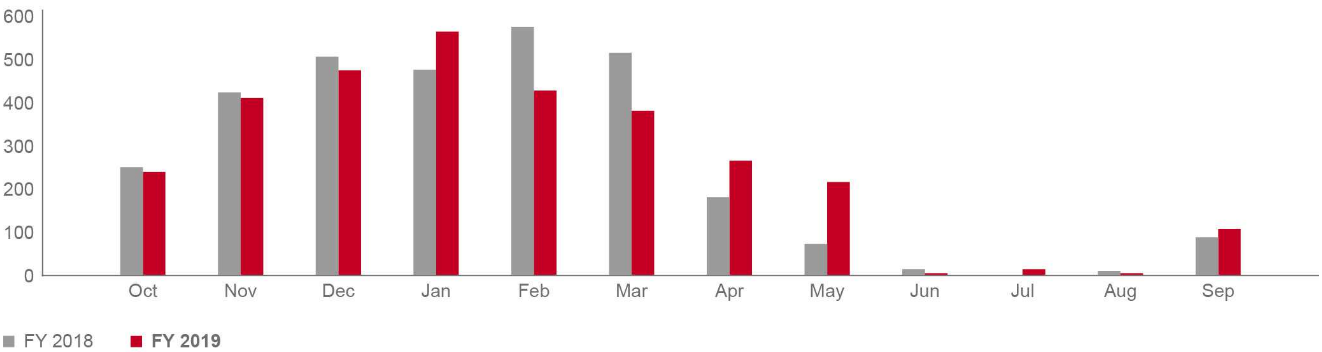
Lower outdoor temperatures lead to higher heating energy requirements at our customers. That is also reflected in higher degree day figures, which we refer to as an indicator of temperature-based heating energy use. In the 1st half of our 2019 financial year, degree day figures were still lower than in the previous year due to the unusually mild weather conditions at the time. Lower temperatures in the 2nd half of the year, especially in April and May, then led degree day figures for the period under report as a whole to exceed the previous year's comparatively low level by 1 %.

Lower wind volumes than in previous year

Just like our customers' heating energy needs, electricity generation volumes at our renewable energies plants are also influenced by weather conditions. Wind volumes play a key role in determining the volume of electricity generated by our turbines and are particularly important in this respect.

In the regions relevant to us, the volume of usable wind power in the 2019 financial year was around 1 % higher overall than the long-term average. The wind yield fell short of the previous year's figure, which over the same period had exceeded the long-term average by around 4 %. For this comparison, we draw on the "EMD-ConWx Mesoscale" wind index with a reference period (20-year average).

DEGREE DAY FIGURES



PRESENTATION OF EARNINGS PERFORMANCE

The period under report is the 2019 financial year, which started on 1 October 2018 and ended on 30 September 2019. Unless otherwise indicated, the comments below refer to the MVV Energie Group ("MVV"), i.e. all companies fully consolidated and shareholdings recognised at equity.

As of 30 September 2019, we implemented the decision taken by the IFRS Interpretations Committee (IFRS IC) on the "Physical settlement of contracts to buy or sell a non-financial item (IFRS 9)". Upon the settlement of forward transactions recognised as derivatives through profit or loss pursuant to IFRS 9 the respective sales and cost of materials are therefore recognised at current spot prices. As these measurement items are not cash-effective and also do not influence our operating business, we adjust our sales and cost of materials to exclude them. Prior to implementation of the decision, the previous measurement was reversed through profit or loss and recognised in other operating income or expenses. Sales and cost of materials were recognised in the amount of the agreed forward prices. This means that, as of the balance sheet date, sales, cost of materials and other operating income and expenses have been adjusted to exclude IFRS 9 items.

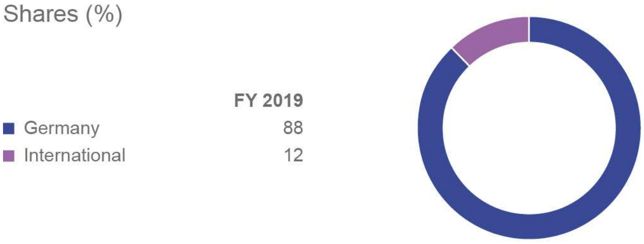
MVV

Euro million	**FY 2019**	FY 2018	+/– change	% change
Development in turnover				
Electricity (kWh million)	20,246	23,556	– 3,310	– 14
Heating energy (kWh million)	6,286	6,598	– 312	– 5
Gas (kWh million)	25,719	21,209	+ 4,510	+ 21
Water (m³ million)	41.1	41.3	– 0.2	0
Combustible waste delivered (tonnes 000s)	2,300	2,328	– 28	– 1
Adjusted sales excluding energy taxes	3,683	3,903	– 220	– 6
of which electricity sales	1,668	2,095	– 427	– 20
of which heating energy sales	374	359	+ 15	+ 4
of which gas sales	718	548	+ 170	+ 31
of which water sales	89	87	+ 2	+ 2
Adjusted EBIT	225	228	– 3	– 1

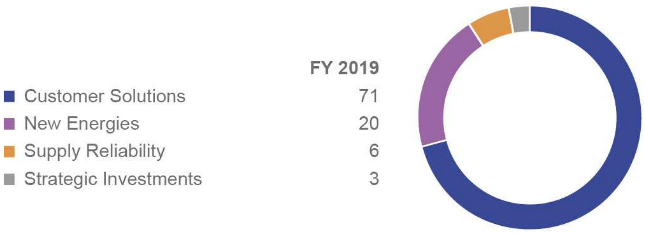
Within sales, we eliminate IFRS 9 measurement items, which came to a net total of Euro – 23 million at 30 September 2019 and of Euro 28 million at 30 September 2018. The reduction in adjusted sales reflects the lower volume of electricity trading volumes. Moreover, since the beginning of the 2019 financial year one amendment due to IFRS 15 means that items relating to the allocations paid under the German Renewable Energies Act (EEG) have been netted between sales and cost of materials. This reduced the volume of sales compared with the previous year. Overall, the adjusted EBIT of Euro 225 million fell only slightly short of the previous year's figure and was therefore consistent with our earnings forecast. As expected, our project development business performed positively and supplied higher earnings contributions. Moreover, adjusted EBIT for the 2019 financial year was positively influenced by a year-on-year increase in the at-equity result. Turbine damage at our biomass power plant at Ridham Dock in March 2019 meant that our UK plant availability levels in the 2nd half of the past financial year fell short of those in the first half. Positive developments in electricity and biomass prices in particular enabled us to compensate for the negative impact of this. Furthermore, earnings were adversely affected by follow-up costs for the joint power plant in Kiel (Gemeinschaftskraftwerk Kiel – GKK), which is being replaced by a modern gas-powered CHP plant. We worked to counter these charges on earnings by continuously enhancing our efficiency and cutting our costs.

In the 2019 financial year, MVV generated 88 % of its consolidated sales in Germany (previous year: 95 %), while 12 % of sales were generated abroad (previous year: 5 %).

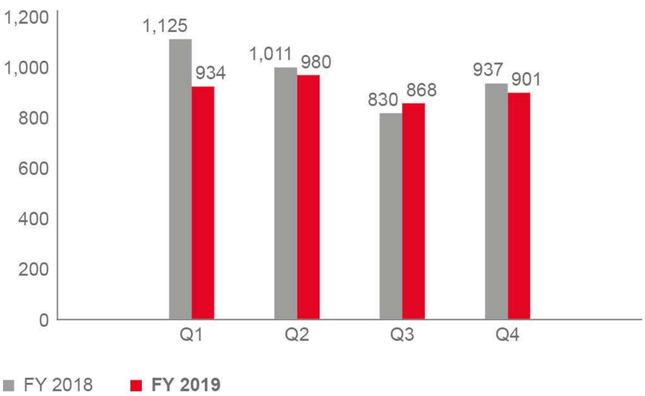
ADJUSTED SALES EXCLUDING ENERGY TAXES BY REGION
Shares (%)



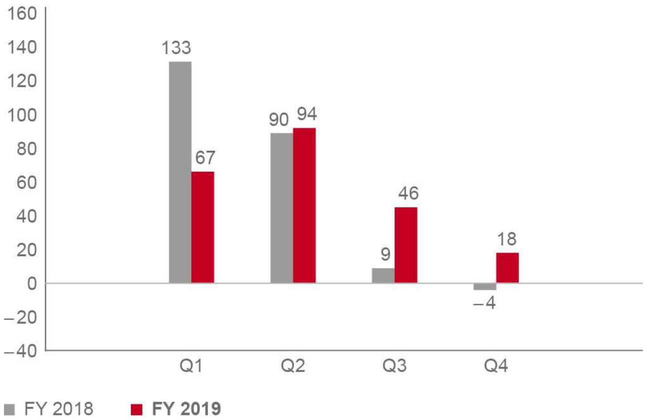
ADJUSTED SALES BY REPORTING SEGMENT
Shares (%)



ADJUSTED SALES EXCLUDING ENERGY TAXES BY QUARTER
Euro million



ADJUSTED EBIT BY QUARTER
Euro million



Customer Solutions reporting segment

Customer Solutions				
Euro million	FY 2019	FY 2018	+/– change	% change
Development in turnover				
Electricity (kWh million)	19,676	22,958	– 3,282	– 14
Heating energy (kWh million)	4,582	4,742	– 160	– 3
Gas (kWh million)	25,394	20,838	+ 4,556	+ 22
Water (m³ million)	40.2	40.4	– 0.2	0
Combustible waste delivered (tonnes 000s)	155	160	– 5	– 3
Adjusted sales excluding energy taxes	2,632	2,819	– 187	– 7
Adjusted EBIT	26	47	– 21	– 45

Mainly as a result of lower trading volumes, electricity turnover fell short of the previous year. This reduction was due to lower portfolio and direct marketing volumes. Heating energy turnover was also lower than in the previous year, with this being due above all to weather conditions. The rise in gas turnover was driven, among other factors, by higher marketing volumes for individual portfolio customers.

The reduction in sales was principally due to the netting of items between sales and cost of materials. This netting, required under IFRS 15 since the beginning of the 2019 financial year, did not have any impact on earnings.

Start-up costs incurred to develop innovative products and services and establish new business activities were partly offset by positive items resulting from sales activities and energy marketing. In comparing the earnings performance with the previous year, it should also be noted that earnings in the previous year were significantly influenced by two factors: the sale of assets relating to multi-utility contracts and the impairment loss recognised on goodwill at MVV Enamic.

New Energies reporting segment

New Energies

Euro million	FY 2019	FY 2018	+/– change	% change
Development in turnover				
Electricity (kWh million)	409	416	– 7	– 2
Heating energy (kWh million)	1,014	1,151	– 137	– 12
Gas (kWh million)	218	254	– 36	– 14
Combustible waste delivered (tonnes 000s)	2,047	2,064	– 17	– 1
Adjusted sales excluding energy taxes	734	738	– 4	– 1
Adjusted EBIT	109	90	+ 19	+ 21

Electricity turnover fell slightly compared with the previous year. Due above all to a damaged turbine at Ridham Dock, plant availability in our environmental energy business fell short of the previous year. The reduction in heating energy, gas and waste volumes resulted from lower plant availability due in particular to downtime for inspection measures.

Sales were at the same level as in the previous year.

In the previous year, segment earnings were negatively affected by the impairment loss recognised on goodwill at the Juwi subgroup. In our environmental energy business, the positive development in electricity and biomass prices in particular enabled us to compensate for the negative impact of lower plant availability. Our project development business performed more positively – benefiting in particular from a stronger international business.

Supply Reliability reporting segment

Supply Reliability

Euro million	FY 2019	FY 2018	+/– change	% change
Adjusted sales excluding energy taxes	229	256	– 27	– 11
Adjusted EBIT	69	62	+ 7	+ 11

The reduction in sales was mainly due to the netting of market premiums and allocations paid under the German Renewable Energies Act (EEG). This measure, required under IFRS 15, does not have any impact on earnings.

In the previous year, segment earnings were positively affected on a one-off basis by the sale of fibre optic networks at MVV Energie AG. Earnings for the year under report were adversely affected by follow-up costs at the joint power plant in Kiel (Gemeinschaftskraftwerk Kiel – GKK). These factors were more than offset by a higher at-equity result and positive regulatory effects, leading to an overall increase in adjusted EBIT in the Supply Reliability segment.

Strategic Investments reporting segment

Strategic Investments

Euro million	FY 2019	FY 2018	+/– change	% change
Development in turnover				
Electricity (kWh million)	161	181	– 20	– 11
Heating energy (kWh million)	690	705	– 15	– 2
Gas (kWh million)	107	117	– 10	– 9
Water (m^3 million)	0.9	0.9	0	0
Combustible waste delivered (tonnes 000s)	98	104	– 6	– 6
Adjusted sales excluding energy taxes	86	87	– 1	– 1
Adjusted EBIT	20	25	– 5	– 20

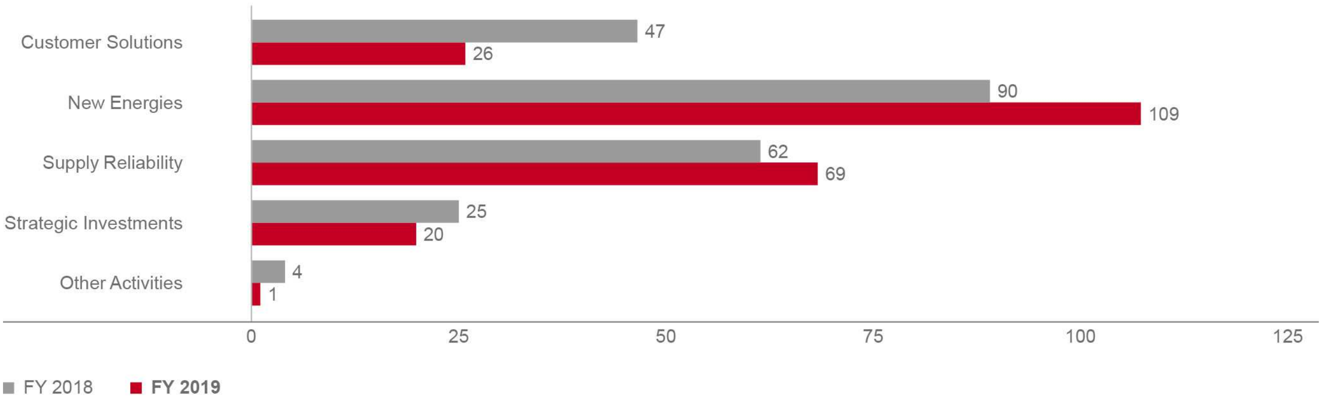
The earnings performance was influenced on the one hand by start-up costs incurred to develop new business fields and by downtime at a plant. On the other hand, changes arose in provisions: In the previous year, provisions were reversed, while in the year under report new provisions were added.

Other Activities reporting segment

Other Activities				
Euro million	FY 2019	FY 2018	+/– change	% change
Adjusted sales excluding energy taxes	2	2	0	0
Adjusted EBIT	1	4	– 3	– 75

The main reason for the reduction in adjusted EBIT was the amended allocation of overhead costs.

ADJUSTED EBIT BY REPORTING SEGMENT
Euro million



Reconciliation with adjusted EBIT

In the following table, we show how we reconcile the EBIT reported in the income statement for the 2019 financial year with the adjusted EBIT relevant for management purposes.

Reconciliation of EBIT (income statement) with adjusted EBIT from 1 October to 30 September			
Euro million	FY 2019	FY 2018	+/– change
EBIT as reported in income statement	165	257	– 92
Financial derivatives measurement item	+ 56	– 31	+ 87
Structural adjustment for part-time early retirement	0	0	0
Restructuring result	–	– 1	+ 1
Interest income from finance leases	+ 4	+ 3	+ 1
Adjusted EBIT	**225**	**228**	**– 3**

For our value-based management, we refer to adjusted EBIT and calculate this key operating earnings figure by adjusting our operating earnings before interest and taxes to eliminate, among other items, the positive and negative items due to fair value measurement as of the reporting date of financial derivatives recognised pursuant to IFRS 9. These came to a net total of Euro – 56 million at 30 September 2019 and Euro 31 million at 30 September 2018. These measurement items reflect the development in prices on the commodities and energy markets. They have no impact on payments, neither do they affect our operating business or dividend.

Development in key income statement items

Adjusted cost of materials fell by Euro 131 million to Euro 2,827 million and thus less sharply than sales. This was due above all to our project development business, the first-time application of IFRS 15 and higher prices for CO_2 emission rights. Furthermore, the increase in gas trading volumes is also reflected in the cost of materials.

At Euro 438 million, **adjusted employee benefit expenses** were Euro 16 million higher than in the previous year. The main reasons for this increase were the first-time full consolidation of DC-Datacenter-Group in the 3rd quarter of our 2019 financial year and collectively agreed pay rises.

Excluding IFRS 9 measurement items, the development in **adjusted other operating income** **Notes to Income Statement (Note 4), Page 109** in the previous year was shaped by the sales of fibre optic networks and of assets relating to multi-utility contracts, as well as higher reversals of provisions. In the year under report, these effects were partly offset by higher income from emission rights. As a result, the adjusted other operating income of Euro 117 million fell only Euro 27 million short of the previous year.

Also excluding IFRS 9 measurement items, **adjusted other operating expenses** **Notes to Income Statement (Note 7), Page 110** decreased by Euro 26 million to Euro 186 million. As well as lower additions to write-downs and receivables defaults, this development was largely due to lower rental, leasehold and leasing expenses.

In the **income statement** **Page 87,** IFRS 9 measurement items are included under other operating income and other operating expenses. Their net balance led to a negative item of Euro 56 million in the 2019 financial year. In the previous year, the measurement item was positive at Euro 31 million.

At Euro 183 million, depreciation was approximately at the previous year's level.

The goodwill write-downs **Notes to Income Statement (Note 14), Page 113** of Euro 34 million recognised in the previous year mainly relate to impairment losses recognised on goodwill for Juwi and at MVV Enamic.

At Euro – 57 million, the **adjusted financial result** was Euro 8 million lower than in the previous year, a development mainly due to higher expenses incurred to discount provisions.

Net of the adjusted financial result, the **adjusted EBT** of Euro 168 million for the 2019 financial year was lower than in the previous year (Euro 179 million).

Adjusted annual net income increased by Euro 4 million and amounted to Euro 115 million for the year under report. This was due to a reduction in adjusted taxes on income to Euro 53 million (previous year: Euro 68 million). This in turn resulted on the one hand from the lower volume of earnings in the tax balance sheet and on the other hand from tax-exempt transactions and non-period tax income.

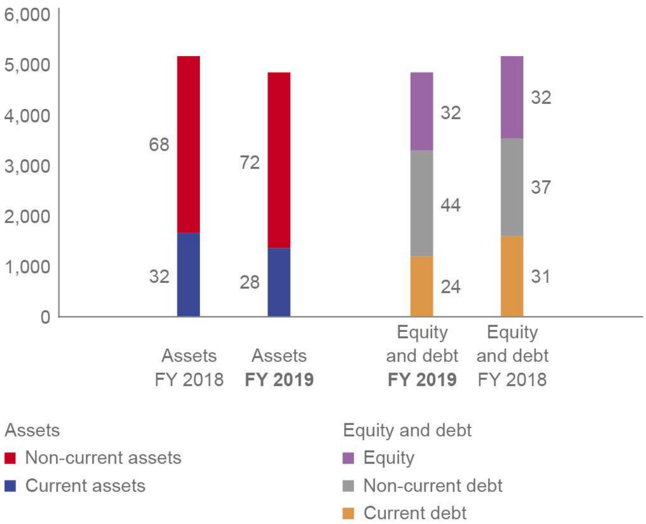
At Euro 17 million, adjusted minority interests were at the same level as in the previous year. **Adjusted annual net income after minority interests** rose to Euro 98 million (previous year: Euro 94 million). On this basis, adjusted earnings per share amounted to Euro 1.49 (previous year: Euro 1.43). The number of shares remained unchanged at 65.9 million.

PRESENTATION OF ASSET POSITION

Balance sheet structure

Euro 000s	30 Sep 2019	30 Sep 2018	% change
Assets			
Non-current assets	3,463,827	3,493,137	– 1
Current assets	1,358,370	1,646,844	– 18
Total assets	**4,822,197**	**5,139,981**	**– 6**
Equity and debt			
Equity	1,535,267	1,625,214	– 6
Non-current debt	2,109,348	1,922,200	+ 10
Current debt	1,177,582	1,592,567	– 26
Total equity and debt	**4,822,197**	**5,139,981**	**– 6**

BALANCE SHEET STRUCTURE
Euro million, shares (%)



Balance sheet development

Total assets came to Euro 4,822 million at the balance sheet date, Euro 318 million lower than at 30 September 2018 **Balance Sheet, Page 89.**

On the asset side of the balance sheet, **non-current assets** fell by Euro 29 million to Euro 3,464 million. Material changes related above all to non-current other receivables and assets **Notes to Balance Sheet (Note 22), Page 123**. Chiefly as a result of measurement items for energy trading transactions, this line item fell by Euro 238 million to Euro 71 million. This development was opposed by an increase in property, plant and equipment by Euro 46 million to Euro 2,634 million, with this mainly being due to advance payments and construction in progress. Alongside the construction of the gas-powered CHP plant in Kiel and a new energy from waste plant in Dundee in Scotland, these also related to the linking up of our waste-powered CHP plant in Mannheim to the regional district heating grid. With the first-time application of IFRS 16, leases have been recognised since 1 October 2018 as a right-of-use asset and a corresponding lease liability from such time as the leased item becomes available. Consistent with this, we have reported right-of-use assets for the first time. At 30 September 2019, these amounted to a total of Euro 150 million.

Current assets fell by Euro 288 million to Euro 1,358 million. The reduction in current other receivables and assets **Notes to Balance Sheet (Note 22), Page 123** by Euro 324 million to Euro 442 million was principally due to measurement items for energy trading transactions. Cash and cash equivalents **Notes to Balance Sheet (Note 26), Page 125** rose to Euro 358 million, up Euro 47 million compared with the previous year's balance sheet date. The increase in liquid funds was chiefly due to the taking up of debt capital to finance major current projects.

Our **equity** including non-controlling interests amounted to Euro 1,535 million at the balance sheet date and thus fell Euro 90 million short of the previous year's figure **Notes to Balance Sheet (Note 27), Page 126.**

For Group management purposes, we adjust our consolidated balance sheet at 30 September 2019 to eliminate cumulative IFRS 9 measurement items. On the asset side, we eliminate positive fair values of derivatives and allocable deferred taxes, which totalled Euro 350 million (30 September 2018: Euro 988 million). On the equity and debt side, we eliminate negative fair values and allocable deferred taxes, here Euro 358 million, from debt (30 September 2018: Euro 912 million). In equity, we eliminate the net balance of Euro – 8 million (30 September 2018: Euro 76 million). This led to **adjusted equity** of Euro 1,544 million at 30 September 2019 (30 September 2018: Euro 1,550 million). As a percentage of the adjusted total assets of Euro 4,472 million (30 September 2018: Euro 4,152 million), the adjusted equity ratio came to 34.5 % at 30 September 2019, as against 37.3 % at 30 September 2018.

Non-current debt increased to Euro 2,109 million, up by Euro 187 million compared with the previous year's balance sheet date. Due above all to the taking up of loans, **non-current financial debt** **Notes to Balance Sheet (Note 30), Page 132** rose by Euro 370 million to Euro 1,534 million. By contrast, **non-current other liabilities** **Notes to Balance Sheet (Note 31), Page 133** fell by Euro 183 million to Euro 221 million. This development chiefly resulted from the year-on-year decrease in the value of derivative financial instruments. This was due to realisation and the lower level of market prices, which reduced the fair values of energy trading transactions recognised under IFRS 9.

Current debt fell by Euro 415 million to Euro 1,178 million. This development was significantly influenced by **current other liabilities** **Notes to Balance Sheet (Note 31), Page 133** which, due above all to IFRS 9 measurement items, decreased by Euro 374 million to Euro 461 million. Largely as a result of the repayment of current liabilities to banks, **current financial debt** **Notes to Balance Sheet, Note 30, Page 132** declined by Euro 54 million and totalled Euro 169 million.

Investments

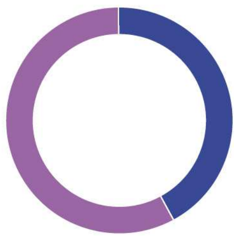
We invested a total of Euro 310 million in the 2019 financial year (previous year: Euro 290 million).

Investments

Euro million	FY 2019	FY 2018	+/– change	% change
Customer Solutions	37	30	+ 7	+ 23
New Energies	119	81	+ 38	+ 47
Supply Reliability	124	157	– 33	– 21
Strategic Investments	16	11	+ 5	+ 45
Other Activities	14	11	+ 3	+ 27
Total	**310**	**290**	**+ 20**	**+ 7**
of which growth investments	181	124	+ 57	+ 46
of which investments in existing business	129	166	– 37	– 22

INVESTMENTS
Shares (%)

	FY 2019
Investments in existing business	42
Growth investments	58



Our largest investment projects in the 2019 financial year included:

- Expanding our Friesenheimer Insel location in Mannheim
- Taking over an energy from waste plant and building a new CHP plant in Dundee/Scotland
- Building the gas-powered CHP plant in Kiel
- Developing windfarms for our proprietary portfolio
- Maintaining and renewing our distribution grids
- Expanding and increasing the density of our district heating grids

Furthermore, we invested in our portfolio of shareholdings.

PRESENTATION OF FINANCIAL POSITION

Due above all to the taking up of new loans to finance projects and the first-time application of IFRS 16, **current and non-current financial debt** rose by Euro 316 million to Euro 1,702 million. This increase was countered by the repayment of existing loans in regular instalments or upon final maturity. **Net financial debt** (current and non-current financial debt less cash and cash equivalents) increased by Euro 269 million to Euro 1,345 million.

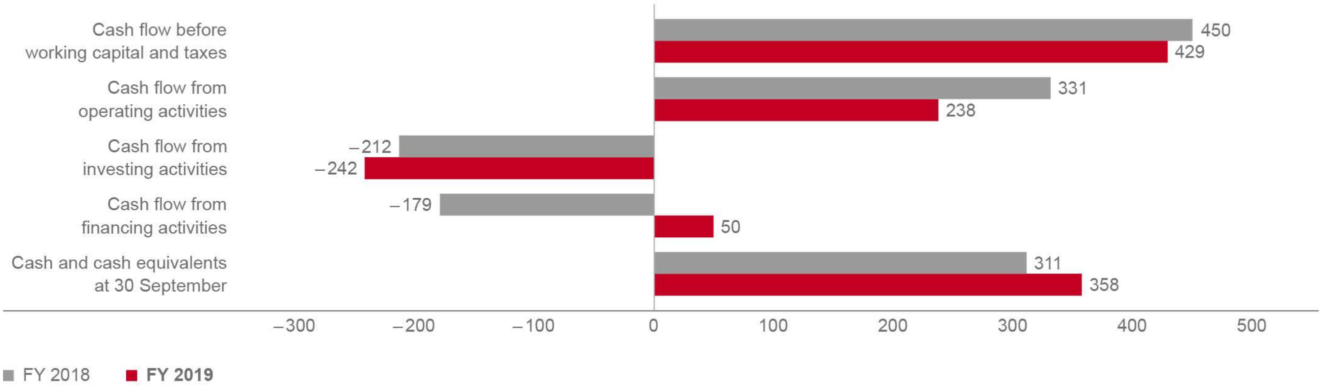
The significant reduction in earnings before taxes (EBT) compared with the previous year was partly offset by the positive impact of eliminating non-cash income and expenses and the non-operating result. As a result, the **cash flow before working capital and taxes** fell by Euro 21 million. The largest positive item related to the elimination of non-cash IFRS 9 measurement items.

The **cash flow from operating activities** fell Euro 93 million short of the previous year. This development was due on the one hand to the slight decrease in the cash flow before working capital and taxes. On the other hand, the reduction was intensified above all by higher inventories and contract assets in the project development business and repayments of margins in the trading business (security for counterparty default risk) as a result of market prices. By contrast, the cash flow benefited in particular from changes in trade receivables and payables resulting from improved working capital management. In the previous year, substantial fluctuations in prepayments received on orders significantly reduced the cash flow from operating activities. By contrast, the change in the current financial year is notably less marked.

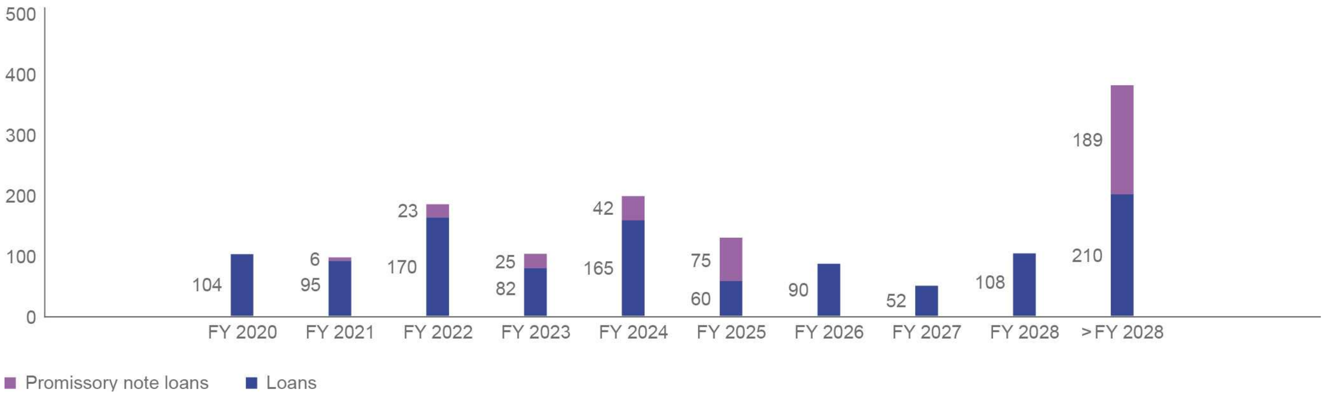
The development in the **cash flow from investing activities** was mainly influenced by the higher inflow of cash generated in the previous year due to the sale of non-current assets. Furthermore, the cash flow from investing activities was also affected by the payment made to increase the shareholding held in DC-Datacenter-Group. These factors were countered above all by divestments, which had a correspondingly positive impact on the cash flow. Payments for investments in property, plant and equipment and intangible assets were at approximately the same level as in the previous year. Overall, the cash flow from investing activities decreased by Euro 30 million compared with the 2018 financial year.

The **cash flow from financing activities** rose year-on-year by Euro 229 million, a development chiefly due to higher net borrowing. This largely involved taking up promissory note loans to finance current major projects. Furthermore, the cash flow from financing activities was influenced by the payment made to acquire the remaining shares in Juwi.

CASH FLOW STATEMENT
Euro million



REPAYMENT PROFILE
Euro million



Professional financial management

Our good access to the capital markets enables us to cover MVV's liquidity requirements without any difficulty. In this respect, we benefit from our strong creditworthiness, our diversified business portfolio and our corporate strategy, which focuses on generating sustainable and profitable growth. MVV has very strong liquidity resources in the form of cash funds and credit lines at banks.

Our repayment profile still does not show any significant spikes in the years ahead.

MVV Energie AG manages a cash pool for itself and 34 other companies within our Group. In this capacity, it manages, procures and secures both its own short-term liquidity and that of the subsidiaries connected to the pool. Long-term financing required for investments is provided to the subsidiaries in the form of shareholder loans.

Rating

MVV is not assessed by any rating agencies. In the rating talks we hold with our core banks, we nevertheless receive regular feedback on our creditworthiness. Based on this information, we assume that MVV continues to be classified at stable investment grade level.

COMBINED NON-FINANCIAL DECLARATION

General information

By publishing this Combined Non-Financial Declaration (NFD), we have complied with our reporting obligations pursuant to § 315b and § 315c in conjunction with § 289b et seq. of the German Commercial Code (HGB). We submit this declaration for the MVV Group (MVV) and its parent company, MVV Energie AG. The guidelines and concepts applied by MVV and MVV Energie AG are consistent with each other; no non-financial targets refer solely to MVV Energie AG. The NFD comprises this chapter and forms part of the Combined Management Report. The reporting in the NFD refers to MVV and thus, as in other sections of this Annual Report, to all subsidiaries fully consolidated in the consolidated financial statements. If, for select reporting topics, we focus on our major locations in Mannheim, Offenbach, Kiel and Wörrstadt and if individual key figures include shareholdings recognised at equity, then we indicate this accordingly. To avoid redundancies within our Combined Management Report, in relevant sections of the NFD we refer to further information included in other chapters. References to disclosures outside the Combined Management Report constitute supplementary information and do not form part of the NFD.

The Supervisory Board commissioned PricewaterhouseCoopers GmbH Wirtschaftsprüfungsgesellschaft (PwC), Frankfurt am Main, to perform a limited assurance audit on the NFD. This was based on the International Standard on Assurance Engagements ISAE 3000 (revised). The audit opinion can be found on **Page 187.**

As an energy company with a focus on sustainability, we take our responsibility towards society and the environment seriously. We are consistently working to minimise any potentially negative implications of our business activities and to make measurable contributions to restructuring the energy supply and protecting the climate and environment. In our Annual Report and on our website we have for many years now provided information about the challenges we face and the progress we have made as company that is aware of its responsibilities and acts sustainably. We will be publishing a separate Sustainability Report for the 2019 financial year on our website in the first quarter of 2020. We are preparing this in accordance with the core option of the Sustainability Reporting Guidelines of the Global Reporting Initiative (GRI) in the GRI Standards version. By publishing the Sustainability Report we will in time-honoured fashion satisfy the transparency requirements of our stakeholders. To identify which sustainability topics are of particular significance for us, in 2019 we again performed a materiality analysis in accordance with GRI. In the second stage, we allocated the results of this analysis, where appropriate, to the aspects listed in § 289c HGB, namely environmental concerns, employee concerns, social concerns, respect for human rights and combating corruption and bribery. We reviewed which disclosures were needed for these aspects to provide an understanding of the course of business, business results and situation of MVV Energie AG and the Group, as well as the implications of our business activities for these aspects. The table on the following page provides on overview of these disclosures. In our NFD, we base our description of concepts and our non-financial key figures on GRI Standards, but do not comply with all aspects of these standards in this report.

Business model and risk analysis

As one of Germany's leading energy companies, we aim to provide our industrial, SME, commercial and private household customers with a reliable and affordable supply of environmentally-friendly energy and to support them by offering innovative solutions enabling them to implement their own energy turnarounds. In this, we cover all major stages of the energy industry value chain. Further information can be found in the Business Model and Corporate Strategy chapters **Pages 18 to 21.**

Within our existing risk management system, we record and evaluate all material risks associated with our business activities and business relationships **Page 79.** In our risk management system, we also record and evaluate any material non-financial risks that may have severe negative implications for our business performance. The review process performed on non-financial risks in the 2019 financial year concluded that there were no risks which satisfied the materiality criteria set out in § 289c (3) No. 3 and 4 HGB.

SUSTAINABILITY MANAGEMENT

Our sustainability management focuses on those topics, processes and measures that we view as forming part of our core business **Business Model, Page 18 and Corporate Strategy Pages 19 to 21.** Our strategic sustainability targets **Page 19** were adopted by the Executive Board for the years 2016 to 2026 and are an integral component of our corporate strategy.

Our sustainability management is anchored across various levels of the Group. The Executive Board bears overall strategic responsibility. We continually review, evaluate and manage MVV's performance on the basis of sustainability indicators and medium-term targets. We also evaluate investment projects by reference to sustainability criteria. In organisational terms, the sustainability programme is located in our group strategy and energy industry department, where the team coordinates the sustainability strategy, plans projects and measures in connection with our group-wide sustainability management and implements these. It regularly reports to the steering committee on group level, as well as to the Executive Board.

Disclosures on contents of combined non-financial declaration

Contents of combined non-financial declaration

Aspects pursuant to § 289 HGB	MVV area of action pursuant to GRI materiality analysis	Disclosures on concepts, targets, measures, results, due diligence processes and non-financial key figures pursuant to § 289c HGB in section
Environmental concerns	Decarbonisation and energy turnaround	Climate protection Renewable energies
	System change	Supply reliability
Employee concerns	Employee concerns	Training and development Diversity Occupational safety
Social concerns	Social commitment	Social commitment
Respect for human rights and combating corruption and bribery	Value chain[1] Compliance[1]	Respect for human rights and combating corruption and bribery

1 Not material under GRI, but material area of action for MVV

Environmental concerns aspect

Decarbonisation and energy turnaround

Since 2018, climate protection has become even more prominent as a topic within society, among the general public and in the political arena. With new analyses, such as the IPCC Special Report 1.5°C, climate science has underlined the urgency of adopting a far more ambitious approach towards decarbonisation, not least as global warming is advancing far more quickly than projected just a few years ago. Taken together with the fact that Germany will miss its climate protection targets for 2020, the results of the Commission on Growth, Structural Change and Employment (the so-called "Coal Commission") and international and national movements within society, there is ever greater momentum in the field of climate and energy policy.

While the "2050 Climate Protection Plan" adopted in 2016 only defines sector CO_2 reduction targets and CO_2 budgets until 2030, since 2019 the Federal Government has been compiling specific policy measures to safeguard compliance with the decarbonisation targets for 2030. There is political consensus concerning the accelerated exit from coal by 2038 at the latest together with a more rapid expansion in renewable energies to 65 % by 2030. In September 2019, the "Climate Cabinet" of the Federal Government adopted the key points of the 2030 Climate Protection Programme. These include imposing prices on CO_2 emissions resulting from fuels not covered by European emissions trading. With a broad mix of additional subsidies, pricing instruments and regulatory law, the Federal Governmental aims to accelerate decarbonisation in private households and companies alike and thus ensure that the climate protection targets set for 2030 are actually met.

National decarbonisation has attained a new quality due to the increasing calls for long-term climate neutrality. This would involve moving away from the European and national target, which initially provided for reducing emissions in a range of 80 % to 95 % by 2050. By contrast, climate neutrality implies not only decarbonising by at least 95 %, but also compensating for or capturing unavoidable residual emissions. For the energy industry, climate neutrality means on the one hand that the use of fossil fuels will have to be reduced more rapidly than previously planned.

On the other hand, more renewable energies will have to be planned and implemented to cover the full decarbonisation of other sectors, for example by working with power-to-gas or power-to-liquids. Decarbonisation and energy turnaround are of core significance to us as an energy company.

Climate protection

Our objective is climate neutrality
We are committed to the Paris Climate Accord and will achieve climate neutrality as a company by 2050 at the latest. Our strategic sustainability targets for the period from 2016 to 2026 mean that we have already set clear and measurable milestones as we head to climate neutrality.

Our decarbonisation strategy covers four areas:

- Generation positions

  We will reduce emissions from our conventional energy generation positions **Page 48** to zero by 2050 at the latest. The trajectory here depends on the specific time at which existing power and heating energy plants are decommissioned, as well as on the relevant replacement investments, including the availability of green gas products, such as renewable hydrogen or biomethane. Key aspects of the underlying conditions will be fixed by the legislation governing the exit from coal.

- Renewable energies

  We have pressed ahead with expanding renewable energies for years now and will maintain this focus. One ambitious interim target involves doubling our own renewable electricity generation volumes in the period from 2016 to 2026 **Page 49**. Furthermore, conventional heating energy generation will be replaced by low-CO_2 alternatives and gradually by renewable sources.

- Climate neutrality at our customers

  Our products and services promote climate neutrality at and by our customers. Today, we already facilitate substantial reductions in CO_2 in other industries and sectors, for example by means of energy efficiency measures, by planning and operating renewable energies plants and by offering innovative services. We will significantly cut energy-related emissions at our customers and improve their climate footprints. Decarbonisation at our customers will be reflected in higher annual net CO_2 savings and the scope of projected volumes of renewable energies. For both these factors, we set specific interim targets in 2016 already for the period until 2026 **Page 48 and Page 49.**

- Handling residual emissions

  At our plants, we exploit ways of cutting emissions in order to reduce unavoidable emissions to an absolute minimum. Any remaining residual emissions, such as those resulting from waste incineration, can only be offset or used by drawing on new technologies, such as carbon capture and storage (CCS) or carbon capture and utilisation (CCU). This being so, we are monitoring and reviewing all relevant options in terms of reducing, using or offsetting CO_2 emissions.

Consistently implementing our decarbonisation strategy will gradually reduce our group-wide CO_2 intensity. We measure this figure as the relationship between value added and CO_2 emissions. We report on the development in this key figure just as transparently as on our direct and indirect CO_2 emissions and CO_2 savings.

Our decarbonisation strategy is specified in greater detail on a decentralised basis by our business fields, taking due account of local conditions. On group level, the investments made by all business fields are assessed in terms of their contribution to decarbonisation. Successful decarbonisation measures are regularly reviewed by our sustainability management team on group level. Taking due account of their strategic implications, the Executive Board then decides on measures.

Our climate balance sheet for the 2019 financial year

In our climate balance sheet, we distinguish between direct and indirect CO_2 emissions.

Direct CO_2 emissions designated as Scope 1 under the Greenhouse Gas Protocol arise upon energy generation at our proprietary plants or at plants from which we procure contingents.

Direct CO_2 emissions are influenced by weather-based demand for heating energy, as well as by the development in wholesale electricity prices and, related to this, capacity utilisation rates at our generation plans. MVV is not able to influence these factors. In the medium to long term, the development in direct emissions will largely depend on the dates on which existing plants are decommissioned and the replacement investments implemented.

The coal-powered joint power plant in Kiel (Gemeinschaftskraftwerk Kiel – GKK), in which Stadtwerke Kiel owns a 50 % stake, was decommissioned in the 2019 financial year. The new gas-powered CHP plant will start operations in the 2020 financial year. In the before/after comparison, the decommissioning of GKK has significantly reduced emissions at the Kiel location in absolute terms. Viewed from a full consolidation perspective, however, MVV's direct CO_2 emissions will not decrease once operations begin at the gas-powered CHP plant, but may possibly rise slightly. That is because our 50 % stake in GKK involves a shareholding recognised at equity whose CO_2 emissions were outside MVV's reporting boundaries from a fully consolidated perspective. By contrast, the new, highly efficient gas-powered CHP plant will be fully consolidated. Following the launch of operations, 100 % of its emissions will therefore be reported under our direct CO_2 emissions.

CO_2 key figures depending on reporting boundaries

	MVV plants	Upstream/downstream stages of value chain	Overall economy
CO_2 emissions	Direct emissions (Scope 1)	Indirect emissions (Scope 2/3)	
CO_2 reductions	Direct emissions (Scope 1) Net CO_2 saving	Indirect emissions (Scope 2/3) Net CO_2 saving	Net CO_2 saving

The counterintuitive circumstance that a reduction in CO_2 by around two thirds in absolute terms does not impact positively on our direct emissions underlines the highly limited meaningfulness of this key figure in terms of the success achieved in decarbonisation. The same applies to other investments which may lead to higher direct CO_2 emissions despite a local reduction in CO_2 emissions. For this reason, we record and report on all reductions in CO_2 arising in the economy as a whole as a result of our strategic measures and investments by way of the “net CO_2 saving” key figure.

Indirect CO_2 emissions comprise greenhouse gases arising in upstream and downstream stages of the value chain. CO_2 emissions in upstream value chain stages arise at suppliers manufacturing products and services purchased by MVV. These relate, for example, to the production of photovoltaics systems and wind turbines or to procurement of electricity not generated by MVV. Emissions activities in downstream stages of the value chain chiefly involve the use of natural gas supplied by MVV to customers. Reporting on indirect CO_2 emissions forms part of any complete climate balance sheet. These disclosures are nevertheless largely of an informational nature, as we act here exclusively as a sales company and cannot control or even influence the CO_2 balance sheet of these commodities.

In the short term, the development in our indirect CO_2 emissions is largely dependent on sales volumes for electricity, gas and heating energy, as well as on the performance of the renewable energies project development business. In this respect, the reduction in the 2019 financial year was mainly due to lower sales volumes, lower fuel use and less capacity installed by our project development business.

The short-term development in direct and indirect CO_2 emissions provides only a limited picture of our efforts to protect the climate. Even an increase in CO_2 emissions in absolute terms in the climate balance sheet may be compatible with the long-term objective of climate neutrality in cases where our activities replace those of other more CO_2-intensive emitters and thus reduce the CO_2 intensity of the overall system. For this reason, in 2016 we already set ourselves the following climate protection target:

We will triple our annual CO_2 savings to 1 million tonnes a year by 2026.

Here, we account for climate-effective CO_2 savings along the entire value chain. We assess the extent to which all of the new strategic activities, projects and investments at our group of companies impact on their direct and indirect greenhouse gas emissions. For all activities, we record the average CO_2 savings for a maximum period of ten years from the beginning of the measure. We do not account for historic reduction projects and financial transactions.

The target also includes our at-equity shareholdings, whose specific target contributions we present in our separate Sustainability Report. However, the path towards the 2026 target year will not follow a linear trajectory. It will depend on the time at which new plants, such as the gas-powered CHP plant in Kiel, commence operations, as well on the market and regulatory climate, as these factors influence the attractiveness of investments and emission-cutting projects and the speed at which they can be implemented.

In the year under report, net CO_2 savings at our fully consolidated companies amounted to 485,507 tonnes of CO_{2eq} (previous year: 484,789 tonnes of CO_{2eq}). We achieved additional savings with energy efficiency projects and by launching operations with new renewable energies plants. Our at-equity shareholdings also slightly increased their CO_2 reductions compared with the previous year, in this case mainly as a result of activities relating to the supply of green heating energy at Stadtwerke Ingolstadt.

Climate balance sheet

1,000 tonnes $CO_{2\,eq}$	FY 2019	FY 2018	+/– change	% change
Direct CO_2 emissions (Scope 1) [1]	1,545	1,547	– 2	0
Indirect CO_2 emissions (Scope 2 and 3) [1, 2, 3]	6,354	8,393	– 2,039	– 24
Net CO_2 saving	486	485	+ 1	0

1 We refer to industry-typical factors from GEMIS/Öko-Institut for fuel-related emissions, the emissions factors issued by the Federal Environment Agency (UBA) for electricity and the certified emissions factors of the respective locations for district heating.

2 Indirect Scope 2 emissions (location-based) cover the Mannheim, Kiel and Offenbach locations and amount to 8 thousand tonnes of CO_2; these figures are based on calendar years; indirect Scope 3 emissions for GHG Protocol categories 1, 3, 9 and 11 amount to 6,346 thousand tonnes of CO_2.

3 The method used to calculate indirect Scope 3 emissions was developed further in the 2019 financial year. The figures are therefore only comparable with the previous year's figures to a limited extent.

Renewable energies

Renewable energies contribute to climate protection targets

By 2050, electricity generation in Germany should be based almost entirely on renewable energies. They have a crucial role to play in meeting national climate protection targets. This situation harbours growth potential for our company; not least because of this, renewable energies are a key focus of our strategic alignment. By expanding renewable energies, we are also making a measurable contribution on behalf of society as a whole to the success of the energy turnaround and achievement of climate protection targets.

Here too, we set two specific sustainability targets in 2016 already and intend to reach these by the end of the 2026 financial year.

We will double our proprietary electricity generation from renewable energies between 2016 and 2026.

This target of doubling our generation to more than 800 MW also includes the shareholdings we recognise at equity. We report on their specific renewable energies generation capacities in our separate Sustainability Report. To enable us to reach our target, we are consistently investing in expanding our proprietary renewable energies generation portfolio. One primary focus here involves onshore wind turbines.

The renewable energies electricity generation capacity at our fully consolidated companies amounted to 474 MW at the end of the 2019 financial year, 7 MW higher than in the previous year. This increase was due to the fact that we included wind turbines from Juwi's portfolio for the first time in the 2019 financial year. Electricity generation capacity at our at-equity shareholdings also showed a slight year-on-year increase.

We will be extending our renewable energies generation portfolio in the 2020 financial year. Our Juwi and Windwärts subsidiaries, for example, are currently building two windfarms with a total capacity of around 24 MW. We will be including these in our proprietary generation portfolio upon their completion in the 2020 financial year.

We will connect 10,000 MW of renewable energies to the grid between 2016 and 2026.

Due in particular to Juwi and Windwärts, we have all-round expertise in developing, building and launching operations with renewable energies plants. We aim to reach the projecting target by installing onshore wind turbines and photovoltaics systems both in Germany and abroad. Biomass plants and photovoltaics systems at customers' locations will contribute smaller amounts.

Since the beginning of the 2017 financial year, we have connected renewable energies plants with capacities of 1,882 MW to the grid. In the 2019 financial year, we connected 460 MW of new capacities **Page 50.**

Forward-looking generation portfolio

At the end of the 2019 financial year, electricity generation at renewable energies plants (including biomass CHP and the biogenic share of waste/refuse-derived fuels) accounted for a 63 % share of our total electricity generation volumes (previous year: 62 %).

Overall, we generated 1,095 million kWh of climate-neutral electricity at our renewable energies plants in the year under report.

Electricity generation capacity from renewable energies and energy from waste (EfW) / refuse-derived fuels (RDF)

MW_e	FY 2019	FY 2018	+/– change	% change
Biomass and biogas plants [1]	104	104	0	0
EfW/RDF	160	161	– 1	– 1
Wind power	204	196	+ 8	+ 4
Hydroelectricity	2	2	0	0
Photovoltaics	4	4	0	0
Total	**474**	**467**	**+ 7**	**+ 1**

1 Including biomethane plants

The heating energy generation capacity at our renewable energies plants for the first time also includes the figure for our energy from waste plant in Dundee.

Heating energy generation capacity from renewable energies and energy from waste (EfW) / refuse-derived fuels (RDF)

MW_t	FY 2019	FY 2018	+/– change	% change
Biomass and biogas plants	119	119	0	0
EfW/RDF	719	682	+ 37	+ 5
Total	**838**	**801**	**+ 37**	**+ 5**

Increasing significance of our project development business

With our Juwi and Windwärts subsidiaries, we offer end-to-end project development and services for planning, building and managing operations at renewable energies plants.

Concluded development of new renewable energies plants

MWₑ	FY 2019	FY 2018	+/– change	% change
Wind power	62	336	– 274	– 82
Photovoltaics	398	675	– 277	– 41
Total	**460**	**1,011**	**– 551**	**– 55**

The project development business is by its very nature volatile. The volume of new renewable energies plants at which operations are launched each year depends, among other factors, on social and political acceptance, the length of approval processes, regulations governing subsidies for renewable energies, as well as on specific implementation dates for individual projects, and can therefore vary widely from year to year.

Operations management for renewable energies plants

MWₑ	FY 2019	FY 2018	+/– change	% change
Wind power	1,246	1,295	– 49	– 4
Photovoltaics	2,288	1,768	+ 520	+ 29
Total	**3,534**	**3,063**	**+ 471**	**+ 15**

System change

Energy companies play a key role in the energy system transformation. They do this by investing in the energy infrastructure to prepare this for the energy turnaround and make it fit for the future. At the same time, they perform what is for society the important task of ensuring a reliable and stable supply of electricity, gas, heating energy and water. The advancing energy turnaround raises new questions, as the volume of electricity fed in from renewable energies such as wind turbines or photovoltaics fluctuates in line with weather conditions and the time of day. As an energy company and distribution grid operator, we ensure that we provide our customers with a secure and reliable supply of energy at all times throughout the transformation in the energy system. As we head for the energy system of the future, we need to smartly combine renewable energies with highly efficient, flexible and controllable power plants. The reliability, smartness and performance capacity of our grids have a key role to play in this respect. That is why we are investing on an ongoing basis in maintaining, expanding and optimising our grids and plants.

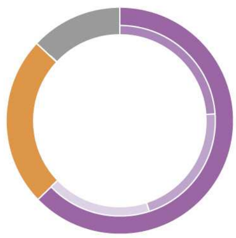
Secure energy supply

Gradual conversion of our generation portfolio

As we shape our course towards the energy system of the future along social, ecological and economic lines, we are working to an increasing extent with renewable and to a decreasing extent with conventional energies and relying here on a variety of energy sources and technologies. Doubling our proprietary electricity generation from renewable energies between 2016 and 2026 **Page 49** will change our generation portfolio, which is set to become even more diversified. This kind of generation portfolio will help us to ensure a secure energy supply for our customers. That is particularly true for the supply of heating energy to those private, business and industrial customers connected to our district heating and industrial steam grids in Mannheim, Offenbach and Kiel.

ELECTRICITY GENERATION
Shares (%)

	FY 2019
Electricity from renewable energies[1]	63
Electricity from biomass and biogas plants	24
Electricity from wind power	21
Electricity from biogenic share of waste/RDF	18
Electricity from CHP	24
Other electricity generation	13



1 Due to their immaterial shares, electricity generation volumes from hydroelectricity and photovoltaics have not been presented in this overview.

Electricity generation volumes

kWh million	FY 2019	FY 2018	+/– change	% change
Biomass and biogas plants	418	498	– 80	– 16
Biogenic share of waste/RDF	309	274	+ 35	+ 13
Wind power	370	367	+ 3	+ 1
Hydroelectricity	2	6	– 4	– 67
Photovoltaics	4	3	+ 1	+ 33
	1,103	**1,148**	**– 45**	**– 4**
Electricity from CHP	418	501	– 83	– 17
Other electricity generation	224	187	+ 37	+ 20
Total	**1,745**	**1,836**	**– 91**	**– 5**

The reduction in electricity generation volumes at biomass and biogas plants was due above all to turbine damage at our biomass power plant at Ridham Dock and the resultant lower level of plant availability. Our plants which generate energy from waste and refuse-derived fuels (biogenic share of waste) generated more electricity, a development due to the fact that inspection and planned maintenance work had reduced electricity generation volumes in the previous year.

The decrease in the volume of electricity generated using CHP largely resulted from the reduced use of our heating energy-based CHP plants in Kiel and Offenbach. The growth in other electricity generation was chiefly driven by higher electricity generation volumes at our energy from waste plants.

Heating energy generation volumes

kWh million	**FY 2019**	FY 2018	+/– change	% change
Biomass and biogas plants	198	202	– 4	– 2
Biogenic share of waste/RDF	1,725	1,851	– 126	– 7
	1,923	**2,053**	**– 130**	**– 6**
Other heating energy generation	1,754	1,837	– 83	– 5
Total	**3,677**	**3,890**	**– 213**	**– 5**

The reduction in heating energy volumes was mainly due to weather conditions.

Biomethane generation volumes

kWh million	**FY 2019**	FY 2018	+/– change	% change
Biomethane generation	233	254	– 21	– 8

The year-on-year reduction in biomethane generation volumes was attributable to the lower energy content of the substrates, as well as to lower plant availability levels.

Safeguarding grid stability despite growing grid loads

One way to assess the reliability of the energy supply involves measuring the frequency and duration of grid downtime. Our three large grid companies MVV Netze GmbH, Energienetze Offenbach GmbH and SWKiel Netz GmbH have set themselves the goal of ensuring a secure supply free of interruptions and thus to avoid grid downtime and remedy any such downtime as quickly as possible. One key task for our grid companies is to work on further developing and operating our grid infrastructure. They therefore invest large sums in maintenance and modernisation measures.

One key non-financial performance indicator which shows the security of the energy supply is the system average interruption duration index (SAIDI), which presents the average interruption to the supply in minutes per year and customer. The SAIDI figure only accounts for unplanned downtimes lasting longer than three minutes and not due to force majeure.

We aim to minimise interruption-induced failure in the power supply.

The Executive Board and management bodies are provided with an annual overview of interruptions and continually informed about the implementation of measures to counter such interruptions. We draw strategic conclusions on this basis and factor these into our investment and maintenance projects.

We invested Euro 103 million in maintaining and expanding our grids in the 2019 financial year.

Electricity supply interruptions (SAIDI)

Minutes/year	**2018** [1]	2017 [1]	+/– change	% change
Grid regions				
MVV Netze Mannheim	29.8	18.5	+ 11.3	+ 61
Energienetze Offenbach	6.3	8.0	– 1.7	– 21
SWKiel Netz	15.3	12.2	+ 3.1	+ 25
Germany [2]	13.9	15.1	– 1.2	– 8

1 Calendar year
2 Source: Federal Network agency (BNetzA)

The SAIDI figures for the Mannheim grid region in 2017 and 2018 were significantly influenced by an increased number of interruptions on medium-voltage level. These resulted from the use of a special component. In 2018, one related interruption in particular meant that the SAIDI figure was significantly higher than in the previous year. By mid-2019, grid components of this type were replaced in a special project. We expect this to impact positively on the SAIDI figure for 2019.

Following a result at the lower end of the long-term range in the previous year, the SAIDI figure for the Stadtwerke Kiel grid region returned to the expected level in 2018. Here too, we reported a slightly higher number of interruptions on medium-voltage level.

Employee concerns aspect

We offer attractive and secure jobs to around 6,100 employees. That is a great responsibility, and one that we are aware of and account for in our strategic decisions.

Motivated, healthy and well-qualified employees are crucial to MVV's success. Viewed in the long term, demographic trends and changes in the population structure will create additional challenges when it comes to finding and retaining suitable employees. This being so, our personnel strategy focuses on the following areas:

- Leadership: We are continually and systematically improving the quality of management at the company and adapting this in line with changing market and employee requirements.

- Demographics, work-life balance, compensation management: Our aim is to remain an attractive employer. That is why we offer attractive compensation packages and are committed to helping our employees combine their work with their family or nursing care commitments. In our recruitment, we have a particular focus on promoting women and expanding diversity at the company.

- Ongoing change management: We are making continuing efforts to further develop our company and corporate culture and aim to retain and enhance our employees' skills. To this end, we invest in training our workforce and enhancing its willingness to embrace change. After all, we need highly trained, flexible and innovative specialists and managers willing to make their contribution to the new energy system.

- Talent management: We deliberately identify, support and cultivate upcoming talent – and that from among our trainees and new recruits right up to our managers.

The Labour Director is a member of the Executive Board and is responsible for all personnel-related activities. Reporting on relevant personnel-related topics is provided to the full Executive Board on a regular basis and whenever necessary due to individual events or topics. The specific structure and implementation of the personnel strategy is organised on a decentralised basis. This way, targeted focuses can be set in line with circumstances on location.

MVV has a Group Works Council and numerous works council bodies and committees. The company's management works together with these bodies on a basis of trust, meaning that both the company's concerns and those of its workforce are accounted for in all significant decisions. The Supervisory Board of MVV Energie AG includes equal numbers of shareholder and employee representatives. This means that employee concerns are central to any important company decisions.

We aim to protect the physical and mental wellbeing of our own employees and of those employees who work on our behalf. To this end, we are continually working to improve work safety at the Group. Consistent with this objective, the work safety committees organised on a decentralised basis offer structured programmes and measures about which the Executive Board is also kept regularly informed.

We employed a group-wide total of 6,113 individuals as of 30 September 2019. The increase compared with the previous year was mainly due to the first-time consolidation of DC-Datacenter-Group in the year under report.

Number of employees (headcount)

	30 Sep 2019	30 Sep 2018	+/– change	% change
MVV [1]	6,113	5,978	+ 135	+ 2
of which Germany	5,232	5,137	+ 95	+ 2
of which abroad	881	841	+ 40	+ 5

1 Including 330 trainees (previous year: 312)

Our employees abroad include 500 employees at our Czech subgroup, 241 at Juwi's foreign shareholdings and 135 at the British subsidiaries of MVV Umwelt.

Training and development

Training with promising prospects for the future

Training acts as a key pillar of MVV's recruitment strategy. We therefore offer a wide variety of training programmes.

In Mannheim alone, we offer the next generation of employees training in more than 20 different commercial and technical vocations, as well as combined training and study programmes. In the year under report we took on two refugees for the first time as employees. In Mannheim, Offenbach, Kiel and Gersthofen close to Augsburg, we are among the largest trainers in the regions.

Our broad range of training programmes aims to show young people the wide variety of career opportunities at our company.

As of 30 September 2019, a total of 330 young women and men were in training at MVV. Our trainees also include five former refugees who are training as specialists in metals technology and industrial electricians.

In 2019, we participated in a STEM (science, technology, engineering and maths) internship that we are offering with other companies in the region. Pupils from Year 9 upwards spend five days at five companies getting to know five training vocations and five study programmes in STEM subjects. This innovative approach, in which our trainees and our students present the contents of their subjects in practical terms, enables us to arouse young people's interest in STEM vocations and provide them with initial guidance.

Since 2018, we have taken part in the European research project EATAP (European Apprenticeship Talent Program). In cooperation with partners from Austria, Lithuania and the UK, we are looking into ways of promoting the talent of high-potential apprentices in STEM vocations in line with common standards across Europe. In the year under report, we also took part once again with our City College partner in Plymouth in the ERASMUS+ European exchange programme for trainees in programmes offered by the Chamber of Industry and Commerce (IHK).

Targeted personnel development

For us, targeted personnel development is a key factor which also determines our competitive success. We have therefore developed numerous measures and instruments based on the experience we have gained in the rapidly changing economic climate in which we operate.

Our further training measures enable us to ensure a shared basis of knowledge on overriding strategic topics. Alongside in-house training, we also offer team development and individual measures, such as coaching and mentoring.

We aim to develop the potential of our employees.

When it comes to the individual further development measures we provide to our employees, we have set one key focus on the topic of digitalisation. In the past financial year, we held more than 30 events in Mannheim, with topics ranging from specialist areas, such as artificial intelligence, robotics, blockchain and augmented reality, to general knowledge transfer and digital aids in everyday office life through to questions relating to the interplay of ethics and digitalisation. One of our key focuses in the 2020 financial year will be on collaboration. Looking at our everyday working life in a large organisation, the aim here will be to network our cooperation even more closely, share knowledge, accept mutual impulses and information and integrate new topics into our own work processes.

In Mannheim, we work with a management review system to record the skills and further training needs of our managers and high-potential employees and to plan their next career steps. This involves a graded process including self-assessment and third-party assessment, internal management review conferences and concluding feedback talks held between employees and managers. In the year under report, 239 managers and employees with management potential took part in this programme. Individual development measures are implemented under the responsibility of specialist departments, while employees with management potential are developed within a well-established talent management process. This function is being continually expanded to enable the company to retain high-potential employees. Our understanding of talent also extends to specialist and upcoming staff, such as trainees and career starters.

The MVV-specific competency model forms the basis for personnel development meetings and individual support programmes. We regularly hold bottom-up appraisals and surveys at our main locations in Germany. This way, our employees have the opportunity to provide honest feedback and we can enhance the quality of management at our company.

Diversity

Equal opportunity on all levels

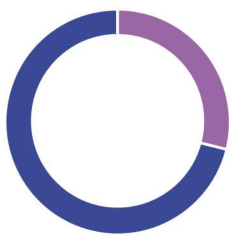
Women have traditionally accounted for a comparatively low share of the overall workforce at energy companies, and MVV is no exception in this respect. That is why we aim to offer more targeted and closer support to women. We are convinced that different skills and management styles impact positively on our business performance. We therefore see raising the share of women in our Group's workforce on a long-term basis as one key to MVV's successful further development. We are addressing the low share of women in management positions typical to our industry with targeted promotional measures.

By 30 September 2021, we aim to raise the female share of our workforce to 35 % and of our total management staff to 25 %.

These targets were adopted by the Supervisory Board and Executive Board of MVV Energie AG in 2015. Both key figures are collected and analysed each year.

WOMEN AND MEN
Shares (%)

	FY 2019
Women	29
Men	71



Status: 30 September 2019

Women accounted for 29 % of our workforce and 15 % of our managers at 30 September 2019. For MVV Energie AG, we report on the share of women in both first and second management tiers. In August 2017, the Executive Board set targets to be achieved by 30 September 2021. By that date, the share of women in the first management tier should have reached 25 %, with a corresponding target of 30 % for the second management tier. At 10 %, the share of female managers in the first tier as of 30 September 2019 was slightly lower than in the previous year (30 September 2018: 11 %). The share of women in the second management tier rose year-on-year and, at 29 %, almost reached the specified target (30 September 2018: 22 %).

To reach our targets, we are adopting various approaches, drawing on a variety of promotional measures and programmes and expanding these further. One major package of measures involves offering targeted personnel development to women with suitable potential. One example is the individual support offered to women in mentoring schemes. In X-Company-Mentoring, a cross-company programme organised each year in cooperation with other well-known companies in the region, male and female mentors in the management tiers of participating companies pass on their skills and experience to talented female employees for a period of one year. This is intended to support employees in their own personal development, with a separate special focus on management. A further focal point involves building networks between current participants and those who took part in the programme in previous years. As part of our corporate membership of "European Women's Management Development", an association for professional women, we offer free membership for interested female employees. This way, they can benefit from free contingents of places in presentations and seminars. Since the 2018 financial year, we have offered an internal lecture series specially targeted at women. These lectures, which have attracted great interest, deal with career-related topics such as how to deal with power and status, as well as body language.

Occupational health and safety

Avoiding accidents

One important matter for us involves protecting the physical and mental health of our employees and of those employees who work on our behalf. We therefore make permanent efforts to improve work safety at the Group.

As well as laying down organisational and technical framework requirements for occupational, fire, plant and environmental safety, we also regularly reassess our occupational safety and prevention measures and develop these further. Our work safety committees, comprising both employer and employee representatives, are formed by the companies on location. We liaise closely with professional associations and employee representatives and agree our occupational safety and accident prevention strategies with them.

We aim to prevent accidents and health risks by raising awareness among our managers and employees for the risks and dangers of accidents. In our instructions, we explain the interrelationships involved and lay down work safety requirements. With an electronic instruction system we offer work safety training units specially tailored to individual workplaces. This way, our employees can flexibly and individually address a variety of basic work safety topics. As well-informed contact partners for occupational health and safety in their organisational units, our safety officers also perform an important function. They are regularly trained by our occupational safety specialists and work safety coordinators, who communicate our company-specific safety requirements and prevention focuses.

We aim to make keep the lost time injury frequency rate (LTIF) at MVV as low as possible.

We regularly inspect our plants and operating divisions to identify weak points and make every conceivable effort to prevent accidents. We systematically evaluate accidents at the Group.

Our accident statistics and accident prevention measures are regularly evaluated on Executive Board level, with further measures also being discussed and planned.

Accident statistics

	FY 2019	FY 2018	+/– change	% change
Lost time injury frequency rate (LTIF) [1, 2, 3]	7.7	6.7	+ 1	+ 15

1 Includes all fully consolidated companies in Germany and individual at-equity shareholdings in Germany
2 Calculation based on work-related accidents from first day of absence per 1,000,000 working hours
3 Basis for centrally recorded FTE figures:
FTE figures at reporting date on 30 September
Basis for non-centrally recorded FTE figures:
FTE figures received directly from companies at reporting date on 30 September
Working hours = number of FTEs (full-time equivalents) at reporting date on 30 September multiplied by 1,700 hours (≙ 1 FTE)

Our target for the 2019 financial year amounted to 4.6 and was based on our target of achieving an LTIF figure of 3.9 by the 2020 financial year. By systematically recording and evaluating accidents and regularly communicating accident statistics, we recognised at an early stage that we would not reach the target set in the year under report. We therefore took immediate measures to counter this trend.

We implemented our new inspection concept in further areas of the company and stepped up our regular safety briefings in order further raise awareness for safety-related issues on all levels. Furthermore, we analysed all work-related accidents in detail, processed these and made suitable information available to our employees in the "Learning from previous accidents" section of our electronic instruction system. We backed up these measures with campaign days focusing on occupational health and safety.

We will continue to make every effort to avoid accidents and work-related health risks and to reach our targets in this area. We will therefore be further intensifying our activities in the field of occupational health and safety.

Social concerns aspect

Social commitment

As a company with regional roots, we are an active part of society in the locations and regions in which we operate. We are aware of our relevance to society in this respect. We assume responsibility for our decisions, actions, products and services, and that towards our customers and capital providers, as well towards the environment and the society in which we live. The value we create on site makes us a major economic factor at our locations. We make investments, award contracts to local or regional businesses where possible, secure jobs, offer high-quality training and pay taxes and duties. It goes without saying that we do not use any questionable measures to avoid taxes or move profits across borders.

Regional focuses

At the same time, the companies within our Group support local and regional projects, especially in the fields of social welfare, education, science, culture and sport. One key focus is on promoting upcoming talent and young people. Based on shared values, the specific structure and scope of regional social commitment is organised on a decentralised basis. Staff on location are familiar with local needs, have contacts to local projects and determine the priorities they would like to address with their activities. In most cases, the support provided is financial, taking the form of donations or sponsoring.

We are committed to the social environment in which we operate.

At MVV Energie, the Sponsoring Fund represents one key example of its commitment. Twice a year, this provides financial support to clubs, organisations and institutions in Mannheim and the Rhine-Neckar metropolitan region. The new Kunsthalle art gallery in Mannheim holds MVV Art Evenings with free entry every first Wednesday in the month. With its "Heart and Soul for Your Project!" sponsorship contest, Energieversorgung Offenbach supports regional clubs and organisations. Stadtwerke Kiel has partnered Camp 24/7, in which around 6,000 children and young people a year learn how to sail and the only project of its kind in Germany, since 2002 already.

In dialogue with stakeholders

We operate at a variety of locations and in diverse business fields and therefore come into contact with the interests of numerous, often heterogeneous groups of stakeholders. Our shareholders, employees and customers are among our most important stakeholders, as are government and political representatives. Other major stakeholders include non-government organisations (NGOs), analysts, local residents at our locations, the media, associations and suppliers. These are joined by cooperation partners, business partners and research institutes.

Our aim is to communicate transparently and openly with our stakeholders.

We attach great value to maintaining an open and transparent dialogue with our stakeholders, and that both in our one-to-one contacts and in the publications on our websites, in press releases, on social networks and in specialist formats such as analysts and press conferences. We take part in public discussions and other events, such as specialist energy industry conferences and public information events. We play an active role in the relevant bodies, associations and networks, participate in research projects and take part in the public debate focusing on the transformation of the energy system. Via our membership in industry associations, we participate in energy policy and energy industry discussions. We are members, for example, in the following associations relevant to the areas in which we operate: Bundesverband der Energie- und Wasserwirtschaft e. V. (BDEW), Verband kommunaler Unternehmen e. V. (VKU), Energieeffizienzverband für Wärme, Kälte und KWK e. V. (AGFW), Bundesverband Neue Energiewirtschaft e. V. (BNE), Bundesverband Wind-Energie e. V. (BWE) and Bundesverband deutscher Wohnungs- und Immobilienunternehmen (GdW). Not only that, our subsidiaries and shareholdings on location are involved in local initiatives and networks. Apart from membership fees and project contributions, we do not make payments to associations or other institutions. We occasionally finance studies and surveys on matters relating to the energy industry. These are published and our involvement is suitably signalised.

We have the responsibility to use our resources to promote the conversion in the energy system to provide a more sustainable and efficient energy supply. Acceptance by local populations is crucial for many projects aimed at expanding renewable energies and the infrastructure needed for these. In view of this, in the 2019 financial year we were once again actively involved in planning and implementing projects together with local populations and their representatives on location, promoting acceptance for these projects on the basis of dialogue and reaching decisions that also convince third parties. We perform these measures on a project-by-project basis.

Respect for human rights and combating corruption and bribery aspect

Value chain

We exercise influence on topics relating to sustainability along our upstream and downstream supply chains as well. In the upstream supply chain, for example, we can decide who we wish to do business with and which minimum requirements we place in our suppliers. Key factors influencing our supplier selection from a non-financial perspective include the topics of anticorruption measures, human rights, employee rights, including work safety, and environmental protection.

We aim to avoid any situation in which activities along our value chain have or favour any harmful effects in terms of human rights.

The majority of our procurement volumes involve energy carriers such as electricity and natural gas. We typically hedge these by way of financial transactions but do not physically procure them. For these commodities, we are not aware of any material sustainability-related topics that we are able to influence directly.

One matter of public interest is the origin of the hard coal used at power plants and whether we exert influence on production conditions at the coal mines. The only coal-powered plant we operate ourselves is the CHP plant in Offenbach. For this, we directly procured around 76 thousand tonnes of hard coal in the 2019 financial year. Most of this came from Russia. Due to our longstanding relationships with suppliers, we are familiar with the conditions there. We nevertheless do not have any direct contractual relationships to mine operators but, given the low volumes involved, procure the fuels via intermediaries. Not only that, our very low volume of demand means that we have hardly any possibility of exerting influence on location. Hard coal is also used at the large power plant in Mannheim (Grosskraftwerk Mannheim – GKM), where we are minority shareholders. Here, we have no direct influence on business activities and fuel procurement, as we are not the operators of the plant. We are nevertheless aware of our responsibility and exert our influence by raising sustainability topics and requesting information.

At our biomass-fired power plants, we chiefly use waste timber, residual forest timber and green cuttings. We obtain these fuels from disposal companies and incinerate them in accordance with strict legal requirements. Most of the waste timber incinerated comes from the regions surrounding the respective plants.

Other than fuel procurement, our remaining procurement volumes are relatively low. They mostly involve procuring goods and highly qualified services from contract partners often known to us for many years.

The basis for our cooperation with suppliers and service providers in Germany and the EU is provided by applicable laws and ordinances, as well as those compliance regulations, forms of conduct and work practices relevant to us.

Contractual relations with suppliers and service providers are additionally governed by our procurement terms and compliance guidelines, which are published on our website at **www.mvv.de/centralprocurement**. Our procurement terms include specific requirements in terms of compliance, adherence to employee rights and environmental protection. We expect our suppliers, for example, to uphold the basic employee rights set out in the international conventions of the United Nations (UN), the International Labour Organization (ILO) and the Organisation for Economic Co-operation and Development (OECD), as well as the UN Global Compact.

Suppliers to MVV Energie, Energieversorgung Offenbach, Juwi and Stadtwerke Kiel are all assessed in terms of sustainability, risks and compliance, as are the subcontractors we approve. Within our supplier management system, all suppliers are required to provide disclosures on whether they have compliance or anticorruption requirements and a code of conduct, as well as on whether they are committed to the UN Global Compact. Furthermore, they must disclose whether they have a sustainability concept and, if so, how this is implemented. Corresponding information and certificates are deposited in our supplier management system. Should we commission a supplier, then as standard practice we make our compliance requirements a component of the contract. Among other issues, these provide for contractual penalties in the event of corruption and bribery and require compliance with basic employee rights. Both aspects are monitored in our compliance management system. Compliance with social welfare standards also forms part of our contract awarding process. As a general rule, we do not obtain data from suppliers located further upstream in the supply chain.

The overwhelming share of our business activities take place in Germany, the UK and the Czech Republic, i.e. in European Union member states where respect for human rights is a core aspect of entrepreneurial activity. Within our supplier management, we have taken specific measures to perform a sustainability evaluation of select business areas with potentially critical conditions. If we access new regions or markets outside Europe, this mostly relates to our project development business. To safeguard respect for human rights along the value chain there as well, and more clearly than previously, in the 2019 financial year we launched new processes and measures within the respective compliance management systems. These will become part of standard processes in the 2020 financial year. Acquisitions of companies or shareholdings are subject to a painstaking review process that also covers compliance with human rights, adherence to compliance-related requirements and further sustainability aspects, such as environmental protection and occupational safety.

Large numbers of subcontractors, most of which based in European Union countries, work on behalf of MVV. As human and employee rights are legally protected in these countries, we assume that employment conditions there are humane. High safety standards are also important to us for our subcontractors. We are therefore committed to ensuring that they comply with legal requirements and have issued corresponding requirements which provide, for example, for health and safety instructions to be issued to employees at third-party companies. At present, however, we do not perform systematic audits of our subcontractors. We do not keep comprehensive records of working conditions at our subcontractors, especially at their production locations.

Compliance

Consistent adherence to all regulations and laws applicable to MVV is an absolute prerequisite for the company to act and be accepted as a reliable and trustworthy partner. High-quality compliance also makes an important contribution to our company’s sustainable development and value creation.

Our compliance management system (CMS) helps us to safeguard compliance with applicable laws, as well as with in-company guidelines and the ethical standards to which we are committed. This way, we protect the integrity of our employees, our customers and business partners and save MVV from any negative consequences.

We have summarised the most important requirements and the necessary organisational structures in our Compliance Management Handbook, which also lists relevant personnel responsibilities and lays down details about our reporting system. This handbook is binding for all limited liability companies at the Mannheim subgroup of MVV Energie AG and is permanently available for downloading to all of the employees at this subgroup. The other subgroups have introduced equivalent compliance management systems. Our Compliance Management Handbook is also available in English, for example for our British and Czech subgroups.

Our CMS is structured in such a way as to ensure that breaches of compliance are basically avoided in advance, above all by working with preventative measures in the respective business processes (systemic compliance). We already check relevant processes in sensitive areas during the respective operating process, for example, and act early to take corrective measures where necessary. Donations and payments to parties and political organisations are strictly prohibited. Payments to equity providers are made exclusively in the form of dividends.

The head of our group legal, compliance and materials division acts as MVV's Compliance Officer. Together with the various organisational units involved, the Compliance Officer compiles relevant compliance regulations, documents them and sees to their implementation in business processes. He is responsible for ensuring that employee training measures are implemented and that due account is taken of all CMS processes. Furthermore, he also acts in an advisory and supportive capacity to accompany measures intended to prevent and, where necessary, investigate any violations of the law, corruption or deliberate acts harmful to the company. He reports to the Executive Board and the Audit Committee on compliance and any violations of human rights.

We aim to avoid any infringements of compliance requirements on a preventative basis.

By actively implementing prevention measures within the relevant business processes themselves, we make every effort to avert all criminal or grossly incorrect actions or violations of the law. MVV has a zero-tolerance policy towards bribery and all other forms of corruption. To help prevent corruption, we therefore provide training, particularly to employees working in sales, related areas and procurement. Employees also receive instructions on how to deal with gratuities and invitations. We record and check any gratuities offered or invitations received. These measures enable us to minimise the risk of "soft bribery". We also continually monitor adherence to compliance requirements, and that in all business fields, specialist divisions, group departments and subsidiaries. Employees and third parties can contact the Compliance Officer or an external confidence lawyer directly. Via "Whistleblower Hotlines", they can provide anonymous tip-offs on potential misconduct. The telephone number of the confidence lawyer is also published on our website at **www.mvv.de.**

Alongside a number of minor infringements, two more notable incidents occurred at a subgroup in the period under report. One related to breaches of the law committed by a temporary manager, who was dismissed immediately, while the other involved a tax-related error.

To make sure that all of MVV's managers and all employees with contact to customers or suppliers are well informed of general compliance requirements and familiar with the legal requirements relevant to their respective business units, we also provide regular training. The topics covered by this training include the requirements of capital market, securities and stock market law, competition and cartel law, combating money laundering, sanction lists and energy industry law. We provide extensive training to new management staff. For this, upcoming management staff and newly appointed managing directors take part in a seminar held over several days with attendance obligatory for all management staff from section manager upwards. In the 2019 financial year, 304 employees at the Mannheim subgroup and 330 employees at the other subgroups took part in this training. During this period, a further 190 individuals completed an online training programme provided by our Stadtwerke Kiel subsidiary.

At the end of each financial year, all senior managers and managing directors of subsidiaries and certain shareholdings are required to submit a Compliance Management Declaration (CMD) in which they must state whether the relevant compliance regulations and legal requirements have been complied with. The matters covered by the CMD include an enquiry as to whether, as required, the employees of the respective manager have received instruction and suitable training for the CMS. Moreover, in the CMD the managers also respond in detail to questions specifically tailored to circumstances at their respective business unit.

Respect for human rights is also integrated into our compliance management system. Our human rights policy **www.mvv.de/responsibility** underlines our commitment to internationally recognised principles of human rights. With this commitment, we also take due account of the National Action Plan for Business and Human Rights (NAP). Our human rights policy was adopted by our Executive Board, while the management at our companies and locations is responsible for compliance with all requirements of the policy.

Business Performance of MVV Energie AG

Notes to Annual Financial Statements of MVV Energie AG (HGB)

As the publicly listed parent company of the MVV Energie Group ("MVV"), MVV Energie AG prepares its annual financial statements in accordance with the requirements of the German Commercial Code (HGB) and the supplementary requirements of the German Stock Corporation Act (AktG) and the German Energy Industry Act (EnWG). The consolidated financial statements of MVV Energie AG are prepared in accordance with International Financial Reporting Standards (IFRS) in the form requiring application in the EU. Unlike in the HGB separate financial statements, in the consolidated financial statements income and expense items at consolidated subsidiaries are included in individual income and expense items in the consolidated income statement. Further differences between the separate financial statements of MVV Energie AG and the consolidated financial statements relate in particular to differences between the requirements of commercial law and those of IFRS international accounting standards in terms of the recognition and measurement of individual items.

The annual financial statements of MVV Energie AG, MVV's consolidated financial statements and the combined management report for the 2019 financial year are published in the Federal Gazette (Bundesanzeiger). The complete 2019 annual financial statements of MVV Energie AG can be downloaded at **www.mvv.de/investors,** as can the consolidated financial statements and the combined management report.

Presentation of earnings performance of MVV Energie AG

Income statement of MVV Energie AG

Euro 000s	**FY 2019**	FY 2018
Sales	1,474,286	2,246,218
less electricity and natural gas taxes	− 113123	− 124.598
Sales less electricity and natural gas taxes	**1,361,163**	**2,121,620**
Increase or reduction in finished and unfinished products	173	0
Other own work capitalised	674	1,730
Other operating income	29,574	44,105
Cost of materials	1,158,676	1,880,426
Employee benefit expenses	75,255	75,398
Depreciation and amortisation	17,328	19,901
Other operating expenses	89,790	98,108
Financial result	76,790	66,901
Taxes on income	27,720	46,082
Earnings after taxes	**99,605**	**114,441**
Other taxes	449	456
Annual net income	**99,156**	**113,985**
Allocation to other revenue reserves	39,840	54,669
Unappropriated net profit	**59,316**	**59,316**

As already outlined in last year's outlook, since the 2019 financial year our large industry, renewable energies generation and municipal utilities customers have been centrally managed by MVV Trading. To this end, we have leased a sub-operation to MVV Trading. That was the main reason for the year-on-year reduction in sales less energy taxes at MVV Energie AG by Euro 761 million to Euro 1,361 million. MVV Energie AG thus met its forecast of generating sales of between Euro 1.3 billion and Euro 1.5 billion. These sales were generated exclusively in Germany. The electricity business accounted for 59.6 % of total sales (previous year: 75.1 %) and thus remained the strongest division in terms of sales at MVV Energie AG.

At Euro 1,159 million, cost of materials was Euro 721 million lower than in the previous year. The change in this line item thus largely reflected the aforementioned development in sales.

Other operating income decreased by Euro 14 million. This reduction was primarily due to the sale of fibre optic networks in the previous year.

MVV Energie AG had 900 employees at 30 September 2019, 19 more than at the previous year's balance sheet date. At Euro 75 million, employee benefit expenses were at the same level as in the previous year.

Mainly as a result of an adjustment to terms due to regulatory requirements, depreciation and amortisation declined by Euro 3 million to Euro 17 million. No impairment losses were recognised on non-current assets in the year under report or the previous year.

Other operating expenses fell by Euro 8 million to Euro 90 million in the 2019 financial year. Material items here related to lower costs for personnel allocations and IT services due to the leasing of a sub-operation to MVV Trading.

The financial result improved year-on-year by Euro 10 million to Euro 77 million. This development was due above all to lower write-downs of financial assets.

Earnings after taxes decreased by Euro 14 million to Euro 100 million. As previously forecast, net of other taxes MVV Energie AG generated a lower volume of annual net income in the 2019 financial year, in this case of Euro 99 million (previous year: Euro 114 million). This development was mainly influenced by the fact that the previous year's figure was positively affected by the sale of fibre optic networks. This item was countered in the previous year by the write-down recognised on the carrying amount of MVV Enamic. Based on the profit utilisation resolution adopted by the Annual General Meeting on 8 March 2019, the unappropriated net profit of Euro 59.3 million was fully distributed to shareholders of MVV Energie AG. The dividend amounted to Euro 0.90 per share.

Revenue reserves of Euro 39,840 thousand were formed from the annual net income for the year under report. MVV Energie AG reported unappropriated net profit of Euro 59 million as of 30 September 2019. The Annual General Meeting will be held on 13 March 2020 and will decide on the dividend proposal adopted by the Executive and Supervisory Boards; the Supervisory Board will decide on its proposal on 2 December 2019.

Presentation of asset and financial position of MVV Energie AG

Balance sheet of MVV Energie AG

Euro 000s	**30 Sep 2019**	30 Sep 2018
Assets		
Non-current assets		
Intangible assets	533	612
Property, plant and equipment	436,108	387,552
Financial assets	1,482,984	1,461,449
	1,919,625	**1,849,613**
Current assets		
Inventories	13,085	30,252
Receivables and other assets	270,391	316,834
Cash and cash equivalents	111,693	79,048
	395,169	**426,134**
Deferred expenses and accrued income	587	595
	2,315,381	**2,276,342**
Equity and liabilities		
Equity		
Share capital	168,721	168,721
Capital reserve	458,946	458,946
Revenue reserves	474,431	434,591
Unappropriated net profit	59,316	59,316
	1,161,414	**1,121,574**
Income grants received	42,774	45,067
Provisions	85,982	109,803
Liabilities	1,025,211	999,898
	2,315,381	**2,276,342**

Total assets increased year-on-year by Euro 39 million to Euro 2,315 million.

The asset side of the balance sheet is largely shaped by financial assets. As of 30 September 2019, these totalled Euro 1,483 million, equivalent to a 64 % share of total assets. The corresponding figures for the previous year were Euro 1,461 million and 64 % respectively. The growth in financial assets by Euro 22 million was due above all to additions to the capital reserve at an associate. Property, plant and equipment increased year-on-year by Euro 48 million to Euro 436 million. This was chiefly due to investments made in connection with linking the CHP plant in Mannheim to the city's district heating grid.

Current assets decreased to Euro 395 million, down Euro 31 million compared with 30 September 2018, with this being primarily due to the reduction in receivables and other assets on account of the sub-operation leased to MVV Trading, as well as to lower inventories. By contrast, cash and cash equivalents rose by Euro 33 million, with this mainly being due to changes in loan movements.

The company increased its equity by Euro 40 million in the year under report. Equity therefore totalled Euro 1,161 million at the balance sheet date. The equity ratio of 50.2 % at 30 September 2019 was slightly higher than the previous year's figure of 49.3 %, reflecting the solid equity resources available at MVV Energie AG.

Mainly as a result of lower tax provisions, the provisions line item decreased by Euro 24 million to Euro 86 million, while liabilities rose by Euro 25 million to Euro 1,025 million. The increase in liabilities was due to opposing items: While liabilities to banks rose due to the taking up of new loans, trade payables and liabilities to associates decreased as a result of the leased sub-operation.

MVV Energie AG performs the financing function for its associates. In this capacity, it safeguards the operating liquidity of numerous companies and, in the form of shareholder loans, supplies these with the long-term capital they need for investments. An adequate volume of committed credit lines is available to secure liquidity.

2019 activity statements

With its 2019 activity statements, MVV Energie AG has satisfied its obligations pursuant to § 6b of the German Electricity and Gas Supply Act (German Energy Industry Act – EnWG) and § 3 of the German Metering Point Operation Act (MsbG). In our internal financial reporting we maintain separate accounts for the activities of electricity and gas distribution, for metering operations, for other activities within the electricity and gas sectors and for other activities outside the electricity and gas sectors. Furthermore, we also prepare balance sheets and income statements for our electricity and gas distribution and our metering operations.

Electricity distribution

The electricity distribution activity field reported sales of Euro 44 million for the year under report (previous year: Euro 46 million). At Euro 44 million, gross performance for the 2019 financial year fell slightly short of the previous year's figure. Measured in terms of total electricity sector sales of Euro 675 million (previous year: Euro 1.6 billion), sales in the electricity distribution activity are of subordinate significance. Alongside income from the leasing of its electricity grids to MVV Netze GmbH, earnings in the electricity distribution activity field at MVV Energie AG also include income from concession duties. MVV Netze GmbH manages and operates the distribution facilities and grids at MVV Energie AG and is responsible for their maintenance. Other operating income resulting from the charging on of the concession duty to MVV Netze GmbH through to 30 September 2019 was opposed by corresponding other operating expenses. Electricity distribution generated annual net income of Euro 3 million in the 2019 financial year (previous year: annual net deficit of Euro – 1 million).

As of 30 September 2019, total assets in the electricity distribution activity field came to Euro 131 million (previous year: Euro 126 million). This corresponds to a 34 % share of total assets in the electricity sector at MVV Energie AG (previous year: 37 %). Property, plant and equipment relating to electricity distribution hardly changed compared with the previous year's balance sheet date. At Euro 120 million (previous year: Euro 113 million), this item accounted for a 92 % share of total electricity distribution assets (previous year: 90 %). On the equity and liabilities side, electricity distribution liabilities rose from Euro 42 million to Euro 44 million. Liabilities to associates mainly involve liabilities due to MVV Netze GmbH.

Metering operations (mME/iMSys)

Consistent with the unbundling requirements of § 3 (4) Sentence 2 MsbG with corresponding application of § 6b (3) EnWG, sales of Euro 0.4 million were reported for metering operations using modern measuring equipment and intelligent measuring systems in the year under report (previous year: Euro 0 million). Gross performance for the 2019 financial year amounted to Euro 0.4 million. Measured in terms of total electricity sector sales of Euro 675 million (previous year: Euro 1.6 billion), sales in the mME/iMSys metering operations activity field are of subordinate significance. Earnings in the mME/iMSys metering operations activity field at MVV Energie AG include income from the leasing of electricity meters (mME/iMSys) to Soluvia Energy Services GmbH. Soluvia Energy Services GmbH is the shared services company of the MVV Group. As a metering point operator and smart meter gateway administrator, it performs services which include all metering services. These are countered by depreciation of the electricity meters (mME/iMSys), which are recognised under non-current assets at MVV Energie AG. In the 2019 financial year, mME/iMSys metering operations posted annual net income of Euro 18 thousand (previous year: Euro 0 thousand).

At 30 September 2019, total assets in the mME/iMSys metering operations activity field amounted to Euro 1.6 million (previous year: Euro 0 million), corresponding to a 0.4 % share of total assets in the electricity sector at MVV Energie AG. At the balance sheet date, property, plant and equipment relating to mME/iMSys metering operations amounted to Euro 1.5 million (previous year) and thus accounted for a 94 % share of total assets in mME/iMSys metering operations (previous year: 0 %). On the equity and liabilities side, liabilities of Euro 1.5 million were reported for mME/iMSys metering operations. These mainly involve liabilities due to other activity fields.

Gas distribution

In the year under report, the gas distribution activity field posted sales of Euro 26 million (previous year: Euro 28 million). Gross performance fell by Euro 2 million in the 2019 financial year. When compared with total gas sector sales of Euro 97 million (previous year: Euro 217 million), the gas distribution activity field is of subordinate significance. By analogy with electricity distribution, as well as income from the leasing of its grids to MVV Netze GmbH earnings in the gas distribution activity field also include income from concession duties. Through to 30 September 2019, the other operating income from charging on the concession duty to MVV Netze GmbH was opposed by corresponding other operating expenses. In the year under report, the gas distribution activity field generated annual net income of Euro 7 million (previous year: Euro 8 million).

At the balance sheet date on 30 September 2019, total assets in the gas distribution activity field came to Euro 103 million (previous year: Euro 97 million) and accounted for some 58 % of total assets in the gas sector at MVV Energie AG (previous year: 74 %). At Euro 97 million, property, plant and equipment in gas distribution was Euro 9 million higher than in the previous year and corresponded to a 94 % share of total assets in this activity field (previous year: 91 %). On the equity and liabilities side, gas distribution liabilities rose from Euro 31 million to Euro 35 million. Liabilities to associates mainly involve liabilities due to MVV Netze GmbH.

Corporate Governance Declaration (§ 289f HGB)

Publicly listed companies are obliged under § 289f of the German Commercial Code (HGB) to submit a Corporate Governance Declaration. In this, they report on their latest Declaration of Conformity with the German Corporate Governance Code pursuant to § 161 of the German Stock Corporation Act (AktG) and on corporate governance practices applied over and above legal requirements. Furthermore, they report on the mode of operation of the Executive and Supervisory Boards, on the composition and mode of operation of the Supervisory Board committees and on the equal participation of women and men in management positions.

We published the Corporate Governance Declaration together with the Declaration of Conformity as a component of our Corporate Governance Report on **Page 65** and on our website at **www.mvv.de/corporate-governance** on 4 November 2019.

Declaration pursuant to § 312 AktG

The Executive Board has compiled a report on relationships with associates for the 2019 financial year (dependent company report) pursuant to § 312 AktG. In this report, it states: “MVV Energie AG received commensurate compensation for each of the transactions listed in its report on relationships with the City of Mannheim and associates based on the circumstances known to the Executive Board at the time at which the transactions were performed.”

Non-Financial Declaration (§ 315b, § 315c in conjunction with § 289b et seq. HGB)

The Non-Financial Declaration for the 2019 financial year has been jointly compiled for MVV Energie AG and the MVV Energie Group (“MVV”) and published as a Combined Non-Financial Declaration in the Combined Management Report in this Annual Report on **Page 44.**

Corporate Governance

MVV views high-quality transparent corporate governance as forming the basis for responsible company management and supervision aimed at long-term value creation. Among other factors, this involves close cooperation on a basis of trust between the Executive and Supervisory Boards and employees, consideration of the interests of all stakeholders, transparent reporting, candid corporate communications and compliance with all applicable laws. We are convinced that high-quality corporate governance enhances the trust placed in the company by our shareholders, as well as by our customers, business partners, employees and the general public.

The Executive and Supervisory Boards report below on corporate governance at MVV Energie AG. We combine this report with our Corporate Governance Declaration; the latter includes the Declaration of Conformity with the German Corporate Governance Code pursuant to § 161 of the German Stock Corporation Act (AktG) and those further disclosures requiring inclusion pursuant to § 289f of the German Commercial Code (HGB).

REPORT OF EXECUTIVE AND SUPERVISORY BOARDS

The Executive and Supervisory Boards once again addressed MVV's corporate governance in detail in the 2019 financial year. As in previous years, in the year under report MVV Energie AG complied with all recommendations made by the Code in its most recent version dated 7 February 2017, which was published in the Federal Gazette on 24 April 2017 and republished in the Federal Gazette in corrected form on 19 May 2017. The same applies with just one exception to the suggestions made in the Code. Point 2.3.3 of the Code suggests that shareholders should have the possibility of watching the entire Annual General Meeting via communication channels such as the internet. However, we only broadcast the introductory words by the meeting chairman and the presentation by the CEO live on our website at **www.mvv.de/investors.** We also publish the introductory words and presentation as a video subsequent to the Annual General Meeting.

Shareholders and Annual General Meeting

Shareholders in MVV Energie AG exercise their voting and control rights at the Annual General Meeting. Each shareholder is entitled to participate in the Annual General Meeting if he or she registers within the relevant deadline and meets the conditions for participating in the meeting and exercising voting rights. Shareholders may make statements on all agenda items at the meeting and submit relevant questions and motions. For voting purposes, each share entitles its holder to one vote. By casting their votes before or during the meeting, our shareholders may participate in the adoption of all resolutions of material relevance to the company. In this respect, shareholders can draw on a range of options – they can vote in person or via a proxy of their choice, be represented by a voting proxy appointed by MVV Energie AG to act in line with their instructions, or by a bank or shareholders' association. Moreover, shareholders have the option of submitting their votes by post in advance of the Annual General Meeting provided that they register within the respective deadlines. Alternatively, all declarations may also be communicated electronically using our password-protected shareholder portal at MVV's website.

On our website at **www.mvv.de/investors,** we publish all relevant documents relating to our Annual General Meeting in line with the requirements of stock corporation law. These particularly include the invitation to the meeting and all reports and information necessary for the respective resolutions.

Transparent and prompt communications

We aim to ensure a high degree of transparency and equal treatment for our shareholders. We have therefore set ourselves the standard of providing all stakeholders with simultaneous, equivalent and extensive information about material developments and the company's situation. Prompt sources of information for this purpose chiefly include our websites – and here especially **www.mvv.de** and **www.mvv.de/investors.** The information we publish here includes our financial reports, analysts' conference presentations, press releases, ad-hoc announcements and our financial calendar. We always meet the reporting obligations incumbent on us under the German Stock Corporation Act (AktG), the German Commercial Code (HGB) and the German Securities Trading Act (WpHG).

Disclosures on auditor

The Annual General Meeting of MVV Energie AG held on 8 March 2019 elected PricewaterhouseCoopers GmbH Wirtschaftsprüfungsgesellschaft, (PwC), Essen, as auditor for the 2019 financial year. This was preceded by a selection process conducted in accordance with the Audit Regulation (Regulation (EU) No. 537/2014). Prior to this election, the Supervisory Board convinced itself of the auditor's independence. We comply with the statutory requirements resulting from the Audit Regulation and from § 316 et seq. HGB. These concern the selection, appointment and rotation of the auditor and of those responsible for managing the audit, as well as the commissioning of non-audit services.

Reporting and audit of financial statements

MVV Energie AG prepares its annual financial statements on the basis of the German Commercial Code (HGB). We prepare the consolidated financial statements and interim financial statements in accordance with International Financial Reporting Standards (IFRS) in the form requiring application in the European Union. We present the situation of the MVV Group and of MVV Energie AG in a combined management report.

The auditor audits the annual financial statements of MVV Energie AG as prepared by the Executive Board. Once they have been discussed by the Audit Committee, these financial statements are examined, approved and thus adopted by the Supervisory Board. Following detailed scrutiny by the Audit Committee, the consolidated financial statements prepared by the Executive Board and audited by the auditor are also presented to the Supervisory Board for its own review and approval. In its audit of the financial statements, the auditor also audits the combined management report.

The quarterly statements for the 1st quarter and 1st nine months are prepared by the Executive Board and discussed with the Audit Committee prior to publication, as is the half-year financial report. These publications are not subject to any review requirement by the auditor.

CORPORATE GOVERNANCE DECLARATION WITH DECLARATION OF CONFORMITY

We published the following Corporate Governance Declaration on our website at www.mvv.de/investors on 4 November 2019. In this, we report pursuant to § 289f (2) HGB on the Declaration of Conformity with the German Corporate Governance Code submitted by the Executive and Supervisory Boards and describe those corporate governance practices at our company that go beyond legal requirements in the fields of compliance and risk management, our dual management system, the mode of operation of the Executive and Supervisory Boards and our measures to promote diversity on all levels.

Declaration of Conformity with the German Corporate Governance Code (§ 161 AktG)

The Executive and Supervisory Boards adopted the following Declaration of Conformity with the German Corporate Governance Code in September 2019:

The Executive and Supervisory Boards of MVV Energie AG hereby declare that the company complied with and continues to comply with the recommendations of the German Corporate Governance Code Government Commission in the version of the Code dated 7 February 2017, which was published in the Federal Gazette on 24 April 2017 and republished in corrected form in the Federal Gazette on 19 May 2017.

Compliance and risk management

We have set ourselves the standard of ensuring that our dealings with each individual stakeholder are characterised by transparency, trust, fairness and integrity. With our compliance management system (CMS), we aim to safeguard compliance with applicable laws, as well as with in-company guidelines and the ethical standards to which we are committed. The CMS is intended on the one hand to ensure that our managers and employees understand and adhere to these and on the other hand to monitor all relevant business activities and processes within our Group.

The most important requirements and all necessary organisational structures and processes are summarised in our Compliance Management Handbook, in which we also list the relevant personnel responsibilities for our reporting system and present further details on this. This handbook is binding for all limited liability companies at the Mannheim subgroup of MVV Energie AG and is permanently available for downloading to all its employees. The other subgroups have introduced equivalent compliance management systems. Our Compliance Management Handbook is available both in German and in English. This is important for our British and Czech subgroups, for example.

MVV's Compliance Officer, who also heads our group legal, compliance and materials division, is responsible for our CMS in terms of its contents, organisation and processes. In cooperation with the various organisational units involved, the Compliance Officer compiles the relevant compliance regulations, documents them and sees to their implementation within business processes. Furthermore, he is responsible for ensuring that employee training measures are implemented and that all CMS processes are adhered to. The Compliance Officer reports to the Executive Board and the Audit Committee. Furthermore, he acts in an advisory capacity to accompany measures intended to prevent and, where necessary, investigate any violations of the law, corruption or deliberate acts harmful to the company.

We have provided our CMS with a preventative structure (so-called systemic compliance): Breaches of compliance are chiefly avoided by implementing preventative measures in the respective business processes. We perform advance checks on relevant processes in sensitive areas, for example, and act early to take corrective measures where necessary. Donations and payments to parties and political organisations are strictly prohibited. Payments to equity providers are made exclusively in the form of dividends.

We actively implement preventative measures within business processes already in order to avert criminal or grossly improper violations of the law. In this respect, we pursue a zero-tolerance policy towards bribery and all other forms of corruption. We therefore provide extensive corruption prevention training, particularly to our employees working in sales, related areas and procurement, and show them how to deal with gratuities and invitations which, for example, we record and check. These measures enable us to minimise the risk of so-called soft bribery. We also continually monitor adherence to compliance requirements in all business fields, specialist divisions, group departments and subsidiaries. Via anonymous "whistleblower hotlines", employees and third parties can contact the Compliance Officer or an external confidence lawyer directly and thus provide tip-offs on potential misconduct. We have published the telephone number of the confidence lawyer, also on our website at **www.mvv.de.**

Alongside a number of minor infringements, two more notable incidents occurred at a subgroup in the period under report. One related to breaches of the law committed by a temporary manager, who was dismissed immediately, while the other involved a tax-related error.

All of MVV's managers and all of its employees with contact to customers or suppliers are provided with regular training to make sure that they are well informed of general compliance requirements and familiar with the legal requirements relevant to their respective business units. These include, for example, the requirements of capital market, securities and stock market law, competition and cartel law, combating money laundering, handling sanction lists and the requirements of energy industry law. We provide extensive training to new management staff. To this end, upcoming management staff and newly appointed managing directors attend a seminar held over several days, with attendance obligatory for all management staff from section manager upwards. In the 2019 financial year, 304 employees at the Mannheim subgroup and 330 employees at the other subgroups took part in this training. During this period, a further 190 individuals completed an online training programme provided by our Stadtwerke Kiel subsidiary. From a specific management level upwards, all managers and managing directors of our subsidiaries and specific shareholdings are required to submit a Compliance Management Declaration (CMD) at the end of each financial year. In this, they must state whether all compliance regulations and legal requirements have been complied with. In the CMD we also ask, among other issues, whether the employees of the individual manager have received the required instruction and suitable training for the CMS. Moreover, in the context of the CMD the managers also respond in detail to questions specifically tailored to circumstances at their respective business unit.

The energy industry supply chain is greatly influenced by fuel trading, which is handled on energy exchanges or in bilateral agreements. A significantly smaller share of our total procurement volumes relate to other suppliers who provide us with goods or perform highly qualified services for us. Here too, we attach great value to compliance in our cooperation with these suppliers. We work with supplier management systems and request information from new suppliers, particularly with regard to anti-corruption measures, environmental protection and social responsibility. The basis for our cooperation with suppliers and service providers in Germany and the European Union is provided by the applicable laws and regulations, as well as by those compliance regulations, forms of conduct and work practices relevant to us. These include, for example, the international conventions of the United Nations (UN), the International Labour Organization (ILO) and the Organisation for Economic Cooperation and Development (OECD), as well as the UN Global Compact.

Further major components of our corporate management include our risk management system and internal control system in respect of the financial reporting process (IKS). Our IKS covers relevant accounting and financial reporting processes at all major locations. The aim is to minimise risks that might contravene our objective of ensuring correct, complete, prompt and understandable financial reporting. To this end, we regularly analyse all processes and interfaces involved in preparing MVV's consolidated financial statements and combined management report.

Dual management system

MVV Energie AG is a listed stock corporation with its legal domicile in Mannheim and is therefore governed by the requirements of German corporate law. The dual management system comprising the Executive and Supervisory Boards is one basic principle of this legislation. These two boards are strictly separate in terms of their composition and function. The Executive Board is responsible for managing the company and conducting its business, while the Supervisory Board is entrusted with advising and monitoring the Executive Board. The Executive and Supervisory Boards of MVV Energie AG work together closely and on a basis of trust in the interests of the company.

Composition and mode of operation of Executive Board

The Executive Board, which manages the company under its own responsibility, pursues the objective of generating sustainable and profitable growth. It determines the company's strategic alignment and lays down its financial, investment and personnel planning. It assesses whether the strategy is being implemented in a targeted manner and whether the risk management system is fit for purpose. Furthermore, it monitors risk controlling, the internal control system in respect of the financial reporting process (IKS) and the compliance management system, as well as more far-reaching decentralised management and controlling systems. When reaching decisions, it takes due account of the interests of the company's stakeholders.

The Supervisory Board has imposed a Code of Procedure governing the activities of the Executive Board: This lays down the divisional responsibilities as well as those tasks and decisions incumbent on the overall Executive Board. Moreover, it defines the responsibilities of the Chief Executive Officer (CEO), the ways in which Executive Board resolutions are adopted and those transactions which require Supervisory Board approval. The Executive Board must comprise at least two members and currently has four positions/divisions: CEO/Commercial Affairs, Personnel, Technology and Sales.

The CEO coordinates the work within the Executive Board. Furthermore, he represents the Executive Board externally. Other than this, Executive Board members enjoy equal rights and are jointly responsible for managing the company. Each member of the Executive Board manages their division under their own responsibility but nevertheless subordinates the specific interests of their division to the overriding interests of the company.

Diversity concept for composition of Executive Board

In 2018, the Supervisory Board compiled and adopted a diversity concept which formulates the targets and criteria underlying the composition of the Executive Board.

The composition of the Executive Board is consistent with MVV's entrepreneurial approach. The Executive Board of MVV Energie AG should be composed in such a way that qualified leadership, control and business management is at all times guaranteed for MVV Energie AG and the MVV Group. Candidates for the Executive Board of MVV Energie AG have to be able to correctly assess the economic situation and technical framework of a listed energy supplier with municipal roots and to successfully shape its sustainable development. Individual members of the Executive Board are not expected to have the full range of specific specialist skills, competencies and experience required. However, their qualities should complement each other and, where appropriate, overlap in such a way that the Executive Board as a whole has the necessary specialist skills and variety of experience. The members of the Executive Board bear joint responsibility for managing the company and the Group. They should therefore have sufficient expertise to be able to supervise each other's activities and represent each other.

We have published the CVs of Executive Board members on our website at **www.mvv.de/investors** to provide information about their experience, expertise and skills.

Furthermore, the following aspects are also accounted for in the diversity concept for the composition of the Executive Board:

The upper age limit of 65 years should be complied with when concluding employment contracts. The term of first-time appointments should not exceed three years. Moreover, the Supervisory Board should work together with the Executive Board to find long-term succession solutions. The Supervisory Board had set itself the target of raising the share of women on the Executive Board: In 2017, it set a target of 25 % to be reached by 30 September 2021. The appointment of Verena Amann to the Executive Board as of 1 August 2019 meant that this target was achieved two years earlier.

Composition and mode of operation of Supervisory Board and its committees

The Supervisory Board advises the Executive Board with regard to its management of the company and supervises its activities. Its responsibilities also include appointing and dismissing members of the Executive Board. The Supervisory Board is involved in all decisions of fundamental significance for the company. In view of this, the Executive Board informs the Supervisory Board regularly, promptly and comprehensively of its strategy and other fundamental matters of corporate planning. Furthermore, the Executive Board reports to the Supervisory Board on the company's business performance and situation, as well as on its risk situation and risk management.

The Supervisory Board of MVV Energie AG consists of 20 members – of these, ten represent the company's shareholders and ten its employees; their terms in office are identical. Eight of the shareholder representatives are elected by the Annual General Meeting, while two are directly delegated by the City of Mannheim, namely the Lord High Mayor and the relevant specialist head of department. This provision applies to the extent that the City of Mannheim is a shareholder and – directly or indirectly – holds shares corresponding to more than half of the company's share capital. The employee representatives are elected by employees in accordance with the German Codetermination Act (MitbestG). The Supervisory Board Chairman coordinates the work of the Supervisory Board, whose activities are governed by a Code of Procedure.

To perform its activities efficiently, the Supervisory Board of MVV Energie AG has formed five specially qualified permanent committees which prepare and supplement its own activities. The Audit Committee regularly meets at least five times a year, while the Personnel, Nomination, Mediation and New Authorised Capital Creation Committees are convened when necessary.

The **Audit Committee** addresses corporate planning, strategy and the performance of individual business fields, as well as the development and structure of individual controlling systems. It also deals with fundamental financial reporting issues. Furthermore, it is responsible for preparing the selection of the auditor, performing an advance review of and discussing the annual and consolidated financial statements and discussing the interim consolidated financial statements for the1st half and the interim financial statements for the 1st quarter and the 1st nine months of the financial year with the Executive Board. The Committee also monitors the effectiveness of the internal control system (IKS), internal audit and risk management system and checks whether the organisational precautions taken to comply with legal requirements and internal company guidelines (compliance) are sufficiently effective. The tasks incumbent on the Audit Committee also include determining key audit focuses and setting thresholds for the commissioning of non-audit services. The Audit Committee comprises three shareholder and three employee representatives. Professor Heinz-Werner Ufer is the Chairman of this committee. As an independent and expert member, he meets the requirements of § 100 (5) and § 107 (4) of the German Stock Corporation Act (AktG) and of Point 5.3.2 (3) Sentences 2 and 3 of the German Corporate Governance Code (DCGK). The Supervisory Board Chairman is a permanent guest in the committee.

The work of the **Personnel Committee** relates in particular to preparing Supervisory Board resolutions concerning the conclusion, amendment and rescission of employment contracts with Executive Board members. It proposes suitable candidates to the Supervisory Board for appointment to the Executive Board. In this, it takes due account of legal requirements and of the recommendations and suggestions contained in the German Corporate Governance Code. Based on these preparatory measures performed by the Personnel Committee, the Supervisory Board is responsible for appointing new members to the Executive Board and for decisions relating to existing employment contracts. When selecting new Executive Board members, the Supervisory Board develops and works with current requirement profiles based on the diversity concept for the composition of the Executive Board. The Personnel Committee comprises six members: the Supervisory Board Chairman, who is also Personnel Committee Chairman, his deputy and four Supervisory Board members, of which two shareholder and two employee representatives.

The responsibilities of the **Nomination Committee** involve proposing suitable candidates to the Supervisory Board for its own proposals to the Annual General Meeting. In this, it takes particular account of legal requirements, the diversity concept and the recommendations and suggestions made by the German Corporate Governance Code. Moreover, it determines the targets for the composition of the Supervisory Board. The five committee members include the Supervisory Board Chairman, who also chairs the committee, and four further shareholder representatives.

Consistent with § 27 (3) of the German Codetermination Act (MitbestG), the **Mediation Committee** submits further personnel proposals to the Supervisory Board in cases where the two-third majority required to appoint and dismiss Executive Board members is not achieved in the first ballot.

The **New Authorised Capital Creation Committee** is charged with exercising the powers of the Supervisory Board in connection with any capital increase based on authorised capital. This committee comprises eight members: the Supervisory Board Chairman, who also chairs the committee, his deputy and six further Supervisory Board members, of which one employee representative and five shareholder representatives.

Diversity concept for composition of Supervisory Board

A diversity concept has also been developed for the Supervisory Board. This formulates the targets for and criteria governing the composition of the Supervisory Board.

The specialist and personal requirements set out in the profile – which the Supervisory Board of MVV Energie AG meets in its current composition – are on the one hand intended to ensure a transparent and systematic selection process for new Supervisory Board members and on the other to provide a suitable and well-balanced composition for the Board as a whole. The aim is to ensure that the Supervisory Board of MVV Energie AG is composed in such a way that it can at all times provide qualified supervision and advice to the Executive Board in its activities on behalf of MVV. Candidates for the Supervisory Board of MVV Energie AG have to be able to correctly assess the economic situation and technical framework of a listed energy supplier with municipal roots and to successfully accompany its sustainable development. Individual Supervisory Board members are not expected to have the full range of specific specialist skills, competencies and experience required. However, their qualities should complement each other and, where appropriate, overlap in such a way that the full Board has the competence and variety of experience needed for it to perform the duties incumbent on the Supervisory Board and its committees.

Furthermore, the Board must include at least one financial expert with the qualifications called for by the German Stock Corporation Act (AktG) and the German Corporate Governance Code. The Supervisory Board should include an adequate number of independent members.

To provide information about the experience, expertise and skills of our Supervisory Board, we have published members' CVs on our website at **www.mvv.de/investors.**

Furthermore, the following aspects are also accounted for in the diversity concept for the composition of the Supervisory Board:

Due account must be taken of the upper age limit of 70 years when proposing candidates; as a general rule, this limit should not be exceeded during the term in office. With regard to the length of membership, elected Supervisory Board members should, where possible, remain on the Board for no less than one and no more than three full terms in office.

The Supervisory Board of a listed company should, pursuant to § 96 (2) Sentence 1 AktG, comprise at least 30 % women and at least 30 % men. According to § 96 (2) Sentence 2 AktG, this requirement basically applies for the Supervisory Board as a whole. For the Supervisory Board of MVV Energie AG, however, both employee and shareholder representatives have drawn on the possibility provided for in § 96 (2) Sentence 3 AktG, namely of stipulating that these minimum shares should be met not only for the Supervisory Board as a whole, but also for employee and shareholder representatives respectively. Accordingly, of the positions allocable to shareholder and employee representatives at least three for each group must be held by women and at least three by men.

One task incumbent on the Nomination Committee involves implementing the diversity concept for the composition of the Supervisory Board. It proposes suitable candidates to the Supervisory Board for its election proposals to the Annual General Meeting. In this, it takes due account of legal requirements and of the recommendations and suggestions in the German Corporate Governance Code. Before nominating a proposed candidate, the Supervisory Board ascertains whether the potential candidate has sufficient time to perform the duties associated with the position and whether he or she has any business and/or personal links to the group of companies or its competitors. The selection of employee representatives for the Supervisory Board is governed by the provisions of codetermination law.

Conflicts of interest and independence of Supervisory Board members

Any conflicts of interest arising on the part of Executive or Supervisory Board members are disclosed to the Supervisory Board immediately. In respect of Point 5.4.2 of the German Corporate Governance Code, we are of the opinion that all members of the Supervisory Board are independent in the spirit of the Code. There are no personal or business, i.e. commercial, links between the company and its management bodies. We also view Supervisory Board members who sit on the city council or work for the city administration and are delegated by the City of Mannheim as being independent in the sense of this recommendation. The City of Mannheim owns a majority of the shares in MVV Energie AG. Pursuant to the Municipalities Code of the State of Baden-Württemberg, the city council is the topmost political body representing the city. It is therefore logical that the City of Mannheim, as principal shareholder in MVV Energie AG, should be represented on the company's Supervisory Board by members of the city council and the city administration. The decisive factor in determining independence is whether there are any material conflicts of interest. This is particularly not the case for those Supervisory Board members appointed in line with the Articles of Association, namely Dr. Peter Kurz and Christian Specht. The same is true of the other Supervisory Board members who sit on the city council or did so in the 2019 financial year.

Report on equal participation of women and men

The Supervisory and Executive Boards of MVV Energie AG are convinced that the company can only generate sustainable business success when responsibility is assigned to women and men on a basis of equality. Particularly in view of demographic change, it makes sense – for both social and economic reasons – to promote all talents regardless of their gender. Among other benefits, this approach also proactively counters the effects of any shortage of specialist and management staff. To date, women have only made up a comparatively low share of the overall workforce at companies operating in the energy sector. The Supervisory and Executive Boards of MVV Energie AG believe that increasing the share of women working at the group of companies on a long-term basis is key to the company's successful further development. We therefore aim to gradually raise the female share of our Group's workforce to 35 % by 30 September 2021, up from the equivalent figure of 27 % as of 30 June 2015. With a 29 % share of female employees as of 30 September 2019, we came slightly closer to reaching this target. We also aim to raise the share of female managers, in this case to 25 % compared with 14 % as of 30 June 2015. As of the balance sheet date on 30 September 2019, this key figure came to 15 %. To enable us to meet our targets by 30 September 2021, we will consistently implement our range of promotional measures and programmes, and in particular our targeted personnel development for women with suitable potential, and will expand these measures and programmes in the years ahead.

For MVV Energie AG, we report on the share of women in both the first and second management tiers. In August 2017, the Executive Board set new targets to be achieved by 30 September 2021. By that date, the share of women in the first management tier should have reached 25 %, with a corresponding target of 30 % for the second management tier. At 10 %, the share of female managers in the first management tier as of 30 September 2019 was slightly lower than in the previous year (30 September 2018: 11 %). The share of women in the second management tier rose year-on-year and, at 29 %, almost reached the specified target (30 September 2018: 22 %). Alongside measures already in place to promote female employees, we are implementing measures to attract more applications from promising external and internal female candidates.

Compensation Report

In what follows, we explain the principles of our compensation system for the Executive Board of MVV Energie AG. We also provide information about the structure and level of compensation paid to members of our Executive Board and our Supervisory Board.

There was one change in the composition of the Executive Board in the period under report: Verena Amann took up her position as Personnel Director as of 1 August 2019.

EXECUTIVE BOARD COMPENSATION

Compensation system

The Supervisory Board regularly reviews the system and level of compensation paid to members of our Executive Board and also determines both of these aspects. The resolutions required in this respect are prepared by the Supervisory Board Personnel Committee. Our compensation system is structured in such a way as to incentivise the sustainable long-term development in the company's value and its economic success. We take due account of the requirements of the German Commercial Code (HGB) and the German Stock Corporation Act (AktG), as well as of the recommendations in the German Corporate Governance Code.

The Executive Board compensation consists of non-performance-related and performance-related components. Should an Executive Board member prematurely leave his or her position, the following requirements apply to any potential compensation agreement: Payments to a retiring Executive Board member may not exceed the value of two annual compensation packages and may also not exceed the compensation due for the remaining term of the employment contract. No transitional allowances are granted upon the premature termination or non-extension of the employment contract. No payments were either committed or made by third parties to Executive Board members in connection with their activities as such.

Non-performance-related compensation

The non-performance-related compensation components comprise fixed basic compensation, fringe benefits and pension commitments.

The fixed compensation is paid in prorated instalments in the form of a monthly salary. Furthermore, Executive Board members receive fringe benefits which they tax individually in accordance with the relevant requirements. These mainly involve contributions to insurance policies customary to the market and the non-cash benefit in kind resulting from company car use.

All Executive Board members of MVV Energie AG have been granted defined contribution pension commitments whose volume is based on the balances on virtual pension accounts at the time at which the benefits are claimed. Pension contributions bearing annual interest are credited to these accounts each year. Furthermore, these commitments also include benefits to cover permanent inability to work and provision for surviving dependants.

Performance-related compensation

Two components, each of which furnished with appropriate minimum thresholds and caps, determine the variable compensation paid to our Executive Board members. The first is the annual bonus, which is based on the adjusted EBIT generated by MVV in the past financial year. The second is the sustainability bonus, which is linked to the sustainable increase in the company's value.

The latter bonus is based on MVV's average ROCE (return on capital employed) before IFRS 9 items, with the calculation including the figures both for the financial year under report and for the two preceding financial years. The ROCE figure measures how effectively the company has used its capital employed. As the capital required for operations is determined above all by long-term strategic decisions, this figure is well suited to appraise the company's sustainability. The sustainability bonus is only paid when the ROCE for a three-year period exceeds a specified minimum threshold.

Compared with the annual bonus, the sustainability bonus accounted for the predominant share of variable compensation paid to the members of MVV's Executive Board in the 2019 financial year. No further multiyear compensation is provided for, neither does the company maintain any stock option programmes or comparable instruments.

Total compensation of the Executive Board

Compensation totalling Euro 2,439 thousand was paid to the Executive Board of MVV Energie AG in the year under report (previous year: Euro 2,209 thousand).

In the following tables, we provide information about the benefits granted and the actual incomes paid in the year under report in accordance with the recommendations of the German Corporate Governance Code and on total compensation pursuant to German Accounting Standard 17 (DRS 17). Given the structure of our compensation system, the benefits granted and actual incomes paid are identical.

Former members of the Executive Board received benefits of Euro 531 thousand in the year under report (previous year: Euro 513 thousand). We stated provisions totalling Euro 21,401 thousand for pension obligations to former Executive Board members and their surviving dependants (previous year: Euro 16,532 thousand). Of this total, an amount of Euro 347 thousand was added in the year under report (previous year: Euro 336 thousand).

Compensation of related parties

Management staff performing key functions are counted as related parties pursuant to IAS 24. Alongside the Executive Board, this group of persons also includes active division heads and authorised representatives of MVV Energie AG. Our division heads and authorised representatives receive their compensation exclusively from MVV Energie AG. The corresponding compensation totalled Euro 3,015 thousand in the year under report (previous year: Euro 2,439 thousand), with Euro 2,906 thousand of this involving payments with current maturities (previous year: Euro 2,332 thousand). Division heads and authorised representatives receive a defined contribution company pension amounting to up to 8.6 % of their fixed compensation, unless they are insured via municipal supplementary pension companies (ZVKs). They themselves can select which biometric risks they would like to cover. The total expenses incurred for this compensation amounted to Euro 108 thousand in the 2019 financial year (previous year: Euro 107 thousand).

Benefits granted and income paid

	Dr. Georg Müller				Verena Amann			
	CEO				Personnel Director (since 1 August 2019)			
		Min	Max			Min	Max	
Euro 000s	**FY 2019**	FY 2019	FY 2019	FY 2018	**FY 2019**	FY 2019	FY 2019	FY 2018
Fixed compensation [1]	524	524	524	507	52	52	52	0
Fringe benefits [2]	31	31	31	30	6	6	6	0
Other activities [3]	16	16	16	17	0	0	0	0
Total	**571**	**571**	**571**	**554**	**58**	**58**	**58**	**0**
Variable compensation	444	0	1,048	391	49	0	104	0
Total pay	**1,015**	**571**	**1,619**	**945**	**107**	**58**	**162**	**0**
Pension expenses [4]	245	245	245	247	211	211	211	0
Total compensation	**1,260**	**816**	**1,864**	**1,192**	**318**	**269**	**373**	**0**

	Ralf Klöpfer				Dr. Hansjörg Roll			
	Sales Director				Technology Director			
		Min	Max			Min	Max	
Euro 000s	**FY 2019**	FY 2019	FY 2019	FY 2018	**FY 2019**	FY 2019	FY 2019	FY 2018
Fixed compensation [1]	313	313	313	303	313	313	313	303
Fringe benefits [2]	46	46	46	73	26	26	26	39
Other activities [3]	11	11	11	10	16	16	16	14
Total	**370**	**370**	**370**	**386**	**355**	**355**	**355**	**356**
Variable compensation	296	0	626	261	296	0	626	261
Total pay	**666**	**370**	**996**	**647**	**651**	**355**	**981**	**617**
Pension expenses [4]	191	191	191	192	196	196	196	227
Total compensation	**857**	**561**	**1,187**	**839**	**847**	**551**	**1,177**	**844**

1 Annual fixed compensation including CEO allowance of Euro 211 thousand for Dr. Georg Müller
2 Contributions to health insurance, nursing care insurance, voluntary contributions to employers' mutual insurance association, non-cash benefits/benefits in kind
3 Compensation for board activity at subsidiaries and shareholdings (entitlement in respective financial year)
4 Service cost from commitments of pensions and other benefits pursuant to IAS 19

Pension obligations

	Development in virtual pension accounts			Pension provision	Allocation to pension provision	
Euro 000s	Balance at 1 Oct 2018	Pension contribution	**Balance at 30 Sep 2019 [1]**	**Balance at 30 Sep 2019 [2]**	Service cost	Interest expenses
Dr. Georg Müller	2,566	162	2,845	6,194	245	82
Verena Amann	0	16	16	211	211	0
Ralf Klöpfer	630	125	781	1,838	191	20
Dr. Hansjörg Roll	534	142	697	1,628	196	18
Total	**3,730**	**445**	**4,339**	**9,871**	**843**	**120**

1 Including interest
2 Equivalent to present value of vested claims

SUPERVISORY BOARD COMPENSATION

Compensation system

The Articles of Incorporation of MVV Energie AG stipulate that members of the Supervisory Board should receive fixed annual compensation and a meeting allowance, the amount of which is determined by the Annual General Meeting. The compensation paid to our Supervisory Board members is commensurate to the responsibility they bear and to the scope of their activities. Each Supervisory Board member received annual compensation of Euro 10 thousand in the 2019 financial year. The Supervisory Board Chairman received annual compensation of Euro 20 thousand and his deputy was paid Euro 15 thousand. Members joining or leaving the Supervisory Board during the financial year received prorated compensation. Furthermore, the Audit Committee Chairman received additional annual compensation of Euro 5 thousand, while the other members of the committee each received Euro 2.5 thousand. Each Supervisory Board member received Euro 1 thousand for each meeting of the full Supervisory Board or committee meeting attended. The Supervisory Board Chairman receives twice this amount for each meeting of the Supervisory Board, as does the Audit Committee Chairman for each meeting of the Audit Committee.

Total compensation of Supervisory Board

Compensation totalling Euro 400 thousand was paid to Supervisory Board members in the year under report (previous year: Euro 412 thousand).

Supervisory Board compensation FY 2019

Euro	Supervisory Board compensation	Meeting allowances
Dr. Peter Kurz, Chairman	20,000	19,000
Johannes Böttcher	10,000	6,000
Timo Carstensen	10,000	6,000
Ralf Eisenhauer	10,000	10,000
Peter Erni	12,500	10,000
Detlef Falk	12,500	9,000
Dieter Hassel	10,000	4,000
Barbara Hoffmann	10,000	5,000
Prof. Dr. Heidrun Kämper	10,000	6,000
Heike Kamradt	17,500	15,000
Brigitte Kemmer	10,000	5,000
Dr. Antje Mohr	10,000	6,000
Dr. Lorenz Näger	12,500	7,000
Steffen Ratzel	10,625	9,000
Peter Sattler	10,000	6,000
Bernhard Schumacher	10,000	6,000
Christian Specht	11,875	7,000
Katja Udluft (until 30 June 2019)	7,500	5,000
Prof. Heinz-Werner Ufer	15,000	16,000
Susanne Wenz (since 11 July 2019)	2,222	1,000
Jürgen Wiesner	10,000	10,000
Total	**232,222**	**168,000**

Takeover-Related Disclosures

The Combined Management Report includes takeover-related disclosures as per § 289a (1) and § 315a (1) of the German Commercial Code (HGB). The Executive Board has examined these disclosures and offers the following explanatory comments:

Composition of share capital

At the balance sheet date on 30 September 2019, the company's share capital totalled Euro 168,721,397.76 and was divided into 65,906,796 individual non-par registered shares with a prorated amount in the share capital of Euro 2.56 per share. Each share entitles its holder to exercise one vote at the Annual General Meeting of MVV Energie AG, as well as to the rights and obligations accruing to it by law and the Articles of Incorporation.

Restrictions on voting rights and transferability; shares with special rights

As far as we are aware, a consortium agreement including provisions for the exercising of voting rights and the transfer of shares is in place between the City of Mannheim, MKB Mannheimer Kommunalbeteiligungen GmbH, MV Mannheimer Verkehr GmbH and RheinEnergie AG. There are no shares with special rights conferring powers of control.

Direct or indirect shareholdings exceeding 10 % of voting rights

The City of Mannheim indirectly held 50.1 % of the shares in MVV Energie AG at the balance sheet date, while EnBW Energie Baden-Württemberg AG, Karlsruhe, held a direct stake of 28.8 % and RheinEnergie AG, Cologne, directly held 16.3 % of the shares. These disclosures are based on the voting right notifications provided to us by the three shareholders.

Control of voting rights

There is no control of voting rights as defined in § 289a (1) No. 5 and § 315a (1) No. 5 HGB.

Regulations for appointing and dismissing Executive Board members and to amend Articles of Incorporation

The appointment and dismissal of Executive Board members is based on § 76 et seq. of the German Stock Corporation Act (AktG), and especially on § 84 AktG and § 30 et seq. of the German Codetermination Act (MitbestG). In line with the Articles of Incorporation, the company's Executive Board consists of at least two members. The Supervisory Board is responsible for determining the number of members and for appointing and dismissing members. Members are appointed for a maximum five-year term, with repeated appointments permitted.

Amendments to the Articles of Incorporation must be undertaken in accordance with § 133 and § 179 AktG in conjunction with § 19 of the company's Articles of Incorporation. Pursuant to § 19 (1) of the Articles of Incorporation, a simple majority of the share capital with voting entitlement participating in the adoption of a resolution is also sufficient to amend the Articles of Incorporation, unless mandatory legal provisions require a larger majority. Pursuant to § 11 (3) of the company's Articles of Incorporation, the Supervisory Board is authorised to adopt amendments to the Articles of Incorporation that only affect the respective wording.

Powers of Executive Board to issue and buy back shares

By resolution on 13 March 2015, the Annual General Meeting authorised the Executive Board until 12 March 2020 to acquire treasury stock up to an amount of 10 % of existing share capital upon adoption of the resolution.

By resolution on 8 March 2019, the Annual General Meeting also authorised the Executive Board until 7 March 2024, subject to approval by the Supervisory Board, to raise the share capital by a total of up to Euro 51.2 million by issuing up to 20 million new individual non-par registered shares on one or several occasions in return for cash and/or non-cash contributions.

The Executive Board of MVV Energie AG has not yet made use of these authorisations.

Compensation agreements and change of control clauses

There are no material agreements at MVV Energie AG that are subject to a change of control resulting from a takeover bid (change of control clause). The company also has not concluded any compensation agreements with members of the Executive Board or with employees for the event of a takeover bid.

Outlook, Opportunity and Risk Report

- Energy policy background and business climate in energy industry remain challenging
- Slight sales and earnings growth expected
- Investments set to remain high

OUTLOOK

Macroeconomic framework

According to the autumn survey of Germany's leading economic research institutes, the German economy slowed significantly in the 2019 calendar year as a result of global trade disputes and the outstanding questions surrounding Brexit. The experts have predicted gross domestic product growth of 0.5 % for 2019 as a whole, compared with 1.5 % in the previous year. The German economy is expected to grow by 1.1 % in 2020.

Energy policy framework

For MVV's future business performance, the following factors are particularly relevant: the 2030 Climate Protection Programme and its implementation in individual legislative initiatives, the legislation governing the exit from coal in Germany and accompanying measures, as well as the EU "Clean Energy Package" requiring implementation in member states. The international renewable energies project development business is materially influenced by the respective national ambitions.

Energy industry developments

Given the increasing complexity of the renewable energies project development business, postponements may arise in the realisation of projects and the respective earnings. The sales business is still characterised by great competitive pressure. Furthermore, digitalisation is gaining ever greater momentum in the energy industry.

Executive Board summary of expected business performance

For the 2020 financial year, we expect the climate in which we operate to remain challenging overall. We will continue to implement our strategy consistently and invest in energy efficiency, renewable energies and supply reliability. We are pursuing measures to enhance efficiency and reduce costs across all areas of our company. This way, we are providing MVV with a foundation for its sustainable and profitable growth.

Expected sales performance

For the **Customer Solutions** reporting segment, we expect adjusted sales to slightly exceed the previous year's figure. We expect business volumes to develop stably in our retail, business customer and energy trading businesses.

Sales in the **New Energies** reporting segment are expected to rise significantly and we expect positive developments in our project development and environmental energy businesses in particular.

For the **Supply Reliability** reporting segment, we expect sales to show moderate growth upon the launch of operations at the gas-powered CHP plant in Kiel.

From a current perspective, we expect **MVV's** adjusted sales (excluding energy taxes) to increase slightly compared with the previous year (Euro 3.7 billion). Our sales performance will depend above all on trading activities and commodity prices, project realisation in the renewable energies project development business and sales activities, as well as on weather conditions.

Expected earnings performance

In the **Customer Solutions** reporting segment, we expect adjusted EBIT to approximate to the previous year's level. The earnings performance depends in particular on the development in weather conditions, as well as on the market and competitive climate.

Operating earnings in the **New Energies** reporting segment are influenced by the development in waste and biomass prices, the availability of our plants, and weather conditions and wind volumes. Not only that, our project development business is generally subject to greater volatility. Overall, we expect to see a significant increase in adjusted EBIT in the New Energies segment.

Factors that influence earnings in the **Supply Reliability** reporting segment include developments in conventional generation spreads, procurement costs for fuel and CO_2 emission rights and the availability of our plants. Furthermore, fuel transport costs may also increase, for example as a result of low water levels. One significant factor for our earnings performance in the 2020 financial year in particular relates to the launch of operations at our new gas-powered CHP plant in Kiel. Overall, we expect adjusted EBIT in the Supply Reliability reporting segment to approximately match the previous year's level.

Based on the developments outlined above for the reporting segments, on Group level we expect **MVV's** adjusted EBIT for the 2020 financial year to slightly exceed the previous year's figure (Euro 225 million).

Expected performance of MVV Energie AG in separate financial statements

For the 2020 financial year, we expect sales (excluding energy taxes) at MVV Energie AG to approximately match the previous year's level (Euro 1.3 billion). Sales and sales volumes in the heating energy business are significantly influenced by weather conditions, particularly during the heating period.

MVV Energie AG generates the predominant share of its operating earnings from its grid business, sales activities and income from interests held in group shareholdings. Overall, we expect annual net income after taxes for the 2020 financial year to approximate to the level reported for the previous year (Euro 99 million).

Stable dividend

With our continuity-based dividend policy, we aim to ensure a solid return for our shareholders. In view of this, the Executive Board intends to distribute a dividend of Euro 0.90 per share for the 2019 financial year, and thus at the same level as in the previous year. The Supervisory Board will decide in December 2019 on the dividend proposal to be submitted to the 2020 Annual General Meeting.

Planned investments

We will continue to maintain our pace of investment. From a current perspective, we will moderately increase our volume of investment in the 2020 financial year while retaining the same strategic investment focuses.

Capital resources and financing structure

We have very good access to the financial market and are therefore able to cover MVV's financing and liquidity needs at all times. Our adjusted equity ratio of around 35 % will enable us to continue making a high volume of investments in the energy system of the future. We finance investments in our existing business primarily from depreciation. For our growth projects, we draw on retained earnings and on optimised project-based financing facilities. We pool projects with structural similarities and comparable terms and work with the bank and promissory note loan market. By defining and adhering to key figures as guidelines for debt-financed growth, we ensure an implicit rating on investment grade level for MVV.

Forward-looking statements and forecasts

Our Combined Management Report for MVV (IFRS) and MVV Energie AG (HGB) includes forward-looking statements that are based on current assumptions and estimates. Although the Executive Board is convinced that these assumptions and budgets are accurate, actual future developments and actual future earnings may deviate from these forecasts due to high current levels of uncertainty and numerous internal and external factors.

OPPORTUNITY AND RISK REPORT

The energy industry has been undergoing a process of fundamental change for years now – and the industry and MVV still face numerous uncertainties. The opportunities and risks resulting from factors including such changes are an integral part of our entrepreneurial activity. One key task for our corporate management involves identifying both at an early stage of developments, exploiting opportunities and countering risks with suitable measures. We have installed suitable instruments and processes for this purpose. On the one hand, these include our internal control system (IKS) in respect of the financial reporting process, which serves to ensure correct, reliable and uniform companywide financial reporting. On the other hand, they also include our risk management system (RMS), with which we record developments relevant to our company at an early stage, and in particular those relating to competitive, regulatory and technological developments. By systematically addressing the resultant opportunities and risks, we are able to safeguard and extend MVV's competitiveness.

Explanation of internal control system (IKS)

MVV's financial reporting should be correct, complete, prompt and easily understandable. We safeguard this with our internal control system (IKS) in respect of the financial reporting process. This comprises all principles, procedures, regulations and measures to ensure that all business transactions are promptly, completely and accurately recorded. Furthermore, we also use the IKS system to monitor whether legal requirements and our internal regulations have been complied with, such as the principles of proper accounting, the requirements of the German Commercial Code (HGB) and the German Stock Corporation Act (AktG), international accounting requirements and the supplementary requirements of our Articles of Incorporation. The IKS system also helps us to avoid any material misstatements resulting from errors or fraud.

At all of our major locations, the IKS system is a fixed component of the relevant accounting and financial reporting processes. We regularly analyse all processes and interfaces involved in preparing MVV's consolidated financial statements and combined management report. We check whether there any risks that could contravene our objective of ensuring correct, complete, prompt and easily understandable financial reporting. To minimise any risks of this nature, we have introduced suitable organisational safeguards and internal checks, including training for those employees involved and detailed schedules governing the preparation of quarterly statements, interim consolidated financial statements, half-year financial report, consolidated financial statements and the combined management report.

Moreover, Executive Board members, the managing directors of our subsidiaries and select division and group division heads are required to submit internal balance sheet oaths on a quarterly basis.

Basic principles and organisation of IKS system

Our consolidated financial statements are centrally prepared by the commercial division at MVV Energie AG. They comply with International Financial Reporting Standards (IFRS) as adopted by the EU as well as the supplementary requirements of commercial law set out in § 315a (1) HGB. Key accounting matters are processed by employees at the accounting and tax department, who are also available as contact partners to our subsidiaries.

The consolidated financial statements are prepared in a multistage process. This begins at individual subsidiaries, which prepare their financial statements and have these audited by their respective auditor. With the assistance of consolidation software, we then aggregate these financial statements into the consolidated financial statements at MVV Energie AG. Our consolidation process is based on written guidelines, compliance with which is checked upon preparation of the financial statements. The consolidated financial statements are reviewed by the Audit Committee and the full Supervisory Board before being approved and adopted by the Supervisory Board and published in line with the relevant requirements.

Our IKS system consistently requires application of the dual control principle and the separation of critical functions for all processes involved in preparing the financial statements. Our guidelines, process instructions and approval processes are supported by an information and communications system. All companies included in our consolidated financial statements are required to base their accounting and reporting on uniform guidelines that are applicable to annual and interim financial statements. These guidelines lay down the accounting policies requiring application under IFRS and also include requirements as to how we have to meet other reporting obligations, such as industry-specific or regulatory obligations. Moreover, in preparing the financial statements we also aggregate further qualitative and quantitative information that is relevant for the purpose of preparing these. In specified processes, we regularly discuss this information with representatives of the various specialist departments. Within the framework of our quality assurance, we record this information and thus ensure that all relevant data is fully documented. We have subdivided our day-to-day accounting and the preparation of the annual financial statements on the basis of functional perspectives and structured this in individual process steps performed on all hierarchical levels. We have installed automatic or manual checks in all process steps involving risks.

In our accounting, we work with an integrated enterprise resource planning (ERP) system which enables numerous sources of error to be avoided. This way, only complete business transactions with valid data are processed. Not only that, a strict authorisation concept is in place for all users to prevent unauthorised access to accounting data.

Uniform standards across all locations

The commercial division at MVV Energie AG is responsible for preparing the financial statements and for the Group's internal control system (IKS) in respect of the financial reporting process. This way, the IKS system is subject to uniform standards applicable throughout the Group. We ensure that our IKS system is documented and effective in terms of its structure and functionality.

At all major group companies, IKS managers work together with the Group's IKS manager to ensure that local internal control systems are consistent with the Group's uniform requirements. The Group's IKS manager compiles the aggregate IKS report on the basis of the annual status reports submitted by local IKS managers, the internal audit reports and proprietary information. The results of this report form the basis for our IKS reporting.

Using specialist software, the processes relevant to financial reporting are documented together with the embedded internal checks and made available to all employees on MVV's intranet. Where need be, this process documentation has been supplemented to include regulations applicable to individual cases.

Regular reporting

Working with measures including its control process, the group controlling department monitors whether the targets set out in the business plan and approved by the Supervisory Board are actually met. Variances, whether to planned developments or to developments in the previous year, are documented and included in the quarterly financial reports provided to the Executive Board. These present the business performance in detail and include comments on all reporting segments and business fields. Based on the insights thereby gained, suitable measures are proposed in these reports. The Executive Board manages MVV's business on the basis of this information.

Explanation of risk management system (RMS)

Our risk management system (RMS) is structured in such a way as to enable us to detect opportunities and risks at an early stage of developments. Opportunities may lead to a positive variance in company earnings compared with the value budgeted, while risks may result in a correspondingly negative divergence. We evaluate opportunities and risks at the Group on the basis of in-depth market and competitive analyses. We reduce risks wherever possible or pass them on to third parties. Here, we devise suitable measures and monitor their implementation. A successful strategy may also involve deliberately assuming risks, provided that they are manageable and offset by suitable opportunities.

Basic principles and organisation of RMS system

The Executive Board determines the company's risk policy and lays down all processes and responsibilities. Responsibility for operative risk management is located with the legal business units and business fields and, more specifically, with so-called risk bearers. These are the employees responsible for operating earnings at the respective business units. One of their core tasks involves regularly reviewing the current business situation. They identify material opportunities and risks and assess the potential implications of these for adjusted EBIT. They report their assessments in standardised form to our central risk controlling function on a regular basis. The tasks incumbent on risk bearers also include implementing, or monitoring the implementation, of measures enabling risks to be managed or reduced and opportunities to be exploited.

Our central risk controlling function monitors the risk situation at the Group. It continually monitors those opportunities and risks which are relevant to our business and aggregates these into an opportunity/risk profile. This profile represents a net analysis, as it already accounts for all countermeasures taken to reduce risks. Existing opportunities and risks are aggregated using probability methods.

RISK MANAGEMENT SYSTEM

In our risk report, we list the largest single risks separately. We combine the implications of opportunities arising or risks materialising with their respective probability of occurrence and evaluate the opportunity/risk situation accordingly. In our short and medium-term planning, we carefully assess opportunities and risks and account for these in our earnings forecast.

The Executive and Supervisory Boards are provided with a quarterly risk report presenting the Group's opportunity/risk profile. Significant risks arising at short notice are reported immediately to the Executive Board, which in turn informs the Supervisory Board as appropriate.

Supervision of IKS and RMS systems

Both the IKS and the RMS systems are implemented, maintained and supervised by the executive boards and managing directors of consolidated subsidiaries. As part of a risk-based audit plan, our group internal audit department audits both systems regularly, detects any weaknesses and monitors whether the improvements introduced are taking effect.

The Supervisory Board and the Audit Committee of MVV Energie AG check the appropriateness of the structure and functionality of the two systems each year.

Presentation of opportunity/risk situation

In what follows, we present the opportunity/risk situation of MVV. We allocate opportunities and risks in each case to one of our total of six categories. We subsequently quantify the opportunity/risk situation for each category and present the potential impact on earnings for each category in terms of the Group's adjusted EBIT. We use three different classes to categorise the respective opportunity/risk situation: "low", "medium" and "high". These classifications show how high, as a percentage, the expected impact of the category is for the Group's budgeted adjusted EBIT. A detailed explanation of material opportunities and risks is provided within the various categories. Here, we present the potential implications for our reporting segments based on the reporting structure used to manage and report on the business.

EXPECTED RISK SITUATION IN FY 2020

Risk category		Risk class
PRICE RISKS	» Market prices: • Clean dark spread • Clean spark spread » Fluctuations in procurement prices • Waste and biomass prices » Exchange rates » Interest rates	MEDIUM
VOLUME RISKS	» Fluctuations in turnover: • Weather conditions and wind volumes • Economic climate » Competition and efficiency » Procurement uncertainties for waste volumes and biomass	MEDIUM
OPERATING RISKS	» Renewable energies project development » Construction projects » Plant operation » Personnel » IT risks	MEDIUM
LEGISLATIVE RISKS	» Regulation » Legal risks	MEDIUM
FINANCING RISKS	» Receivables default » Refinancing » Liquidity » Countries	LOW
STRATEGIC RISKS	» Strategic decisions (including investments)	LOW

Risk[1] in % of operating earnings (adjusted EBIT) at Group:
high: > 40 %   medium: 10 % to 40 %   low: 0 % to 10 %

1 Budget variance in earnings: likely average maximum damages in the financial year in which the resultant charge on earnings may arise

Price opportunities and risks

In the price opportunities and risks category we include price fluctuations in commodities on both procurement and sales markets, exchange rate movements and interest rate changes. To limit interest rate, exchange rate and commodity risks, we make use of financial instruments **Notes to Balance Sheet (Note 35), Page 137.**

Fluctuations from marketing our generation positions

The clean dark spread (CDS), the clean spark spread (CSS) and the result of marketing electricity generated at our environmental energy plants are each calculated as the difference between the electricity revenues on wholesale markets and the costs incurred to generate the electricity. Items included – in each case together with the costs of CO_2 emission rights – in the costs of electricity generation are: the costs of coal in the case of the CDS, the costs of gas (including transport costs and currency translation differences) for the CSS and the costs of substrates in the case of environmental energy plants. We work with suitable hedging strategies to limit potentially negative implications for our generation portfolio management.

Both the CDS and the CSS continued to be listed at low levels in the year under report. Low electricity generation spreads impact negatively on adjusted EBIT in Supply Reliability, the reporting segment to which the marketing of our power plant capacities in the combined heat and power business field is allocated.

We monitor and evaluate potential opportunities and risks resulting from fluctuating waste prices, and that both in the German and in the British market. Not only that, we also track the development in biomass prices across Europe. Our material and substrate flow management enables us to identify potential risks in the New Energies reporting segment at an early stage and mitigate these with suitable measures.

Any recovery in market prices for electricity may present us with opportunities.

Fluctuations in market procurement prices

The energy volumes required by our sales department for customer supplies at various locations are mostly procured on the energy trading market. Here, our energy trading subsidiary MVV Trading concludes futures transactions, some of which several calendar years in advance, taking due account of our applicable hedging regulations. This way, we increase the consistency of our earnings and act early to improve our planning reliability for subsequent financial years.

Changes in exchange rates

Exchange rate movements may create opportunities or harbour risks for us in connection with fuel procurement, our involvement in the UK and the Czech Republic and our international project business. We limit these risks with natural hedges and futures transactions.

Changes in interest rates

Our finance department continually monitors the interest rate risks relevant to our business. Where possible, we finance our investment projects with fixed interest rates for congruent terms. We already account in our company planning for the potential impact of rising interest rates when projects are refinanced. Changes in interest rates also impact on our project development business. Demand for renewable energies projects may fall, for example, if interest rates rise and other forms of investment become more attractive for investors.

Volume opportunities and risks

Our operating earnings may be positively or negatively influenced by fluctuations in volumes both on the procurement front and on the generation and sales front.

Fluctuations in turnover due to weather conditions and wind volumes

Two key factors influencing our business performance are weather conditions and wind volumes. Weather conditions have a major impact on our turnover with heating energy and gas, particularly during the heating period from September to May. Electricity generation volumes at our wind turbines are dependent on wind volumes. Opportunities arise for our business performance should it be cooler than planned during the heating period and/or should wind volumes exceed our expectations.

Fluctuations in volumes due to changes in economic conditions

MVV is only indirectly affected by macroeconomic developments. If our major industrial and commercial customers cut back their production due to the economic situation, then this may lead them to procure lower volumes of energy from us. On the other hand, we also face opportunities to generate higher sales volumes if our customers step up their production due to economic developments.

Fluctuations in volumes due to competition or efficiency measures

Competitive pressure in the energy market is unremittingly high. Should customers decide to switch provider, then this reduces our sales volumes. Similarly, efficiency measures implemented by our customers, such as heat insulation, may also reduce our volumes. When customers switch to generating the energy they consume themselves, we support them with innovative, competitive products and develop services offering substantial customer benefits. We are thus exploiting the opportunities arising in the market due to climate protection requirements. We accord great value to working with local authorities on a basis of partnership. This way, we create a basis for extending existing concessions and raise our chances of acquiring new concessions.

Procurement of waste volumes and biomass

With regard to incinerating commercial waste and biomass, our adjusted EBIT may be affected both by the total volumes available and by their quality. Both factors are in turn affected by the macroeconomic situation and legal requirements, as well as by plant capacities at competitors and weather-related events. We work to minimise volume risks for our plants by working with professional material and substrate flow management. We also pursue a substitute procurement strategy.

In respect of the UK’s decision to leave the European Union (Brexit), there is currently increased uncertainty concerning the future development in volumes and prices for waste and waste timber in the UK and EU market regions.

Operating opportunities and risks

MVV's operating opportunities and risks chiefly arise in connection with its renewable energies project development business and with the construction and operation of energy generation plants and grids.

We have extensive experience in building and operating energy from waste and biomass plants and see opportunities for our group of companies in this area. In our assessment, there is potential in the German market both to expand biomass fermentation and to recover resources when incinerating sewage.

Uncertainties in renewable energies project development business

Projects in our project development business field generally have shorter planning and construction stages than large-scale generation plants. Having said that, these projects also involve uncertainties: In general, the development of relevant markets depends both on the further development in political regulations and on levels of public acceptance. We see key opportunity and risk factors in the onshore wind turbine project development business in Germany as relating to the scope and structure of future project tenders and the development in market interest rates. When implementing projects, the progress made with the respective projects may be negatively influenced by factors such as any delay in obtaining building or operating permits, or failure to obtain such permits, as well as ever higher approval requirements and related issues. Our financial success in the international business is increasingly determined by political and macroeconomic developments in our target markets. Major sources of uncertainty affecting our success abroad include potential disruptions in international trade relationships, which may impact on market access (punitive tariffs) and competitiveness, and the possibility of further interventions in subsidy regimes. We also have opportunities in our renewable energies business given our extensive expertise and great competence in project development and operations management for renewable energies plants.

Risks resulting from progress with construction projects

Large-scale generation plants have long planning and construction stages and harbour corresponding risks. Negative implications for our expected adjusted EBIT could arise, for example, in the event of any delay in the completion and launch of operations at our major projects or if we incur unplanned costs to procure substitute electricity and heating energy or if new developments increase the costs of the projects. We therefore accord great value to ensuring that projects are robustly designed and budgeted in the planning stage already and to detecting and evaluating the material opportunities and risks involved in projects at an early stage of developments.

Any further delay arising in the construction of the new gas-powered CHP plant in Kiel could delay receipt of the relevant grants or reduce their amount. Not only that, any construction cost overrun would impact negatively on the profitability of the project. We counter these risks, to the extent that they are within our control, with professional project organisation and by commissioning suppliers with experience in the sector. Where contractually possible, we pass on the implications of project risks, especially those involving higher costs and deadline overruns, to the contractual partners responsible for such.

Uncertainties resulting from plant operations

Particularly in our Supply Reliability reporting segment, the operation of energy generation plants and grid facilities to supply our customers with energy and utilities involves substantial operating uncertainties for our Group. Unscheduled downtime at plants may lead to a loss of production or interruption of supplies. In this context, additional financial outlays may also be incurred to repair the plant, for substitute supplies to our customers or for contractual penalties.

By performing regular maintenance and monitoring measures, we make every effort to minimise downtime at our plants and the potential resultant risks. This way, we also do justice to our claim to act as a reliable supplier and to avoid any risks to our reputation. Despite this, we cannot entirely exclude the possibility of downtime. To counter this risk in general, we optimise scheduled inspection times within our maintenance strategy. We thus work towards using capacity at our plants over and above the planned hours of use or to increase efficiency rates. This assists us both in realising opportunities due to higher generation volumes and in avoiding grid operation risks. To limit the financial implications of any potential damages, we have agreed insurance policies. Moreover, we assess the risk and environmental protection aspects of potential clean-up projects on derelict land formerly occupied by our plants.

Personnel developments
Our well-qualified and committed employees form the foundation for our company's success. To attract the right employees to us and retain them in the long term, we therefore work with numerous measures. Risks may nevertheless also arise with regard to our personnel. The companies within our Group may also face capacity risks and risks resulting from ageing workforces due to future demographic changes. The extent of these risks depends on the attractiveness of the respective location. To enable us to continue filling key positions with internal candidates, where possible, we will keep providing our staff with targeted training.

In the pension surveys we have compiled, we have also accounted for those factors involving risks from pension obligations. We have included these factors in our budgets **Notes to Balance Sheet (Note 29), Page 129.**

IT risks
Two crucial factors for nearly all our business processes are secure data storage and interruption-free information technology. We therefore accord great priority to systematically protecting our IT infrastructure and IT systems against any potential attacks by third parties.

We continually reduce our IT risks by implementing an extensive range of technical and organisational measures. We make use of security systems and have a restrictive policy towards granting access authorisations to systems and information. We have redundant copies for all our key hardware components and permanently reflect data between production systems and geographically separate backup systems. We also have a backup computer centre.

Legislative risks

We aggregate those uncertainties existing in connection with regulation or with other changes in the legal foundations for our business operations in this category.

Regulatory risks
Companies operating in the energy industry face the basic risk (and opportunity) that authorities – such as the Federal Network Agency (BNetzA), cartel offices or lawmakers – may amend the regulatory framework. In the past, this related, for example, to the grid fees set by BNetzA. Energy or climate policy decisions may also have implications for our business performance. Examples here include the regulations governing the expansion in renewable energies, subsidies for CHP plants or political considerations on new requirements to enable national climate protection targets to be met. We counter these risks actively: We participate in the political opinion-forming process, adapt our processes and business models and, where possible, also develop suitable products. This way, we are able to exploit any opportunities arising.

Legal risks
MVV may be exposed to legal risks in connection with court cases, product liability, or unenforceable contracts or contractual terms. We therefore check, negotiate and draft contracts with the aim of limiting these risks. Our compliance management system **Page 65** helps us to avoid any infringements of the law.

MVV's business performance is also exposed to risks and opportunities which result from legal pronouncements on energy industry-related matters or other topics. These could, for example, limit or enhance our ability to structure contracts.

Financing opportunities and risks

In this category, we mainly report on receivables default risks and on refinancing and liquidity opportunities and risks.

Receivables default risks
There is the risk that customers or business partners may fail to settle our invoices, or settle them only in part. This risk may arise in our OTC trading activities in the Customer Solutions reporting segment, for example, or in our long-term supply relationships. To limit this kind of receivables default risk in all reporting segments, we select our business partners with due commercial prudence, check their creditworthiness and, where necessary, agree deposits of securities and guarantees. We are also diversifying our portfolio, thus enabling us to avoid clusters of default risks.

Refinancing and liquidity risks
We refer to the possibility of being unable to obtain necessary liquid funds in future as refinancing and liquidity risk. To cover our capital requirements, we have a variety of financing instruments at our disposal. These include promissory note loans, bilateral loans and syndicated loans. We continually monitor the financial markets, regularly share information with our lenders and carefully monitor our liquidity. This enables us to counter any refinancing and liquidity risks and, where possible, to seize related opportunities. Furthermore, our group-internal cash pool also serves to reduce this risk.

Country risks
For MVV, country risks take the form of transfer risks and the possibility that states may become unable or unwilling to meet their payment obligations. Country risks may impact on our adjusted EBIT due to our international activities in the field of renewable energies project development. We continually monitor any uncertainties relating to the terms of access of our target markets that may arise due to potential disruptions in international trade relationships. Before entering international markets that are new to us, we perform detailed analyses of potential risks. For our existing activities, we observe the political and economic situation on location and continually monitor alternative courses of action. In the event of any deterioration in the situation and our risk position, we may decide to leave the given market.

Strategic opportunities and risks

Good strategic decisions form the basis for any company's success. The energy policy and industry framework have been changing dynamically for years now. This transformation harbours strategic risks, but also gives rise to new opportunities. We review our investment projects in great detail and decide in which markets, technologies, companies and projects we intend to invest, as well as the timing and scope of such investments. These decisions are taken on the basis of in-depth market and competitive analyses and painstaking viability calculations for investments and projects. Our group strategy department liaises closely with the Executive Board to monitor our strategic alignment on an ongoing basis and adjust it to changes in circumstances.

One major component of our corporate strategy **Page 19** is an extensive investment programme. To enable us to achieve our budgeted level of adjusted EBIT, strategically important investments have to generate the expected level of earnings contributions. Even though we review and plan such investments with great care, erroneous assessments or unexpected changes in the macroeconomic framework may reduce the level of adjusted EBIT achieved in future financial years.

Given the transformation in the German energy system, our company still faces a high level of planning uncertainty. Furthermore, it is not clear how the UK's decision to leave the European Union (Brexit) will ultimately impact on our business in the UK. We are closely watching all developments in this regard. A weaker British pound, for example, would reduce our earnings in euros. Other factors that may be affected include interest rates, commodities, demand levels and the regulatory framework. Further developments will depend on the specific structure of the country's exit from the EU.

The energy turnaround and changing market in Germany offer opportunities for innovations, new jobs and profitable growth, particularly in terms of renewable energies, decentralised energy supply, energy efficiency, digitalisation, building refurbishment and sustainable mobility concepts. By consistently implementing our corporate strategy **Page 19,** we are seizing these opportunities. We are raising the energy efficiency of our CHP plant in Mannheim, for example, by connecting it to the existing district heating grid. Not only that, this will also make district heating more environmentally friendly, as the link-up measure will lead to a lower primary energy factor.

For renewable energies, we still see sustainably attractive market potential. The competitive situation in Germany has nevertheless changed in the windfarm project development business. The addition of new wind turbines has been restricted by a market mechanism involving tenders and the simultaneous introduction of maximum capacity caps. Furthermore, it is still unclear whether and when the additional wind power turbines already decided on by politicians will actually be implemented. Based on our assessment, the German biomass market still offers expansion potential and investment opportunities in the field of organic waste fermentation, not least given the ever stricter requirements governing the disposal of organic waste. We see further growth potential abroad in areas such as photovoltaics. Having said that, dependencies on local subsidy regimes and local clients apply here. Not only that, competition is tough, particularly in high-growth Asian markets.

We are extending our decentralised energy management business model by offering innovative new solutions and products. The new gas-powered CHP plant will help to ensure supply reliability in Kiel.

Executive Board summary

MVV's opportunity/risk profile has not changed materially since last year. On the one hand, competitive pressure is unrelentingly high. On the other hand, changes in energy and climate policy still have the potential to impact substantially on our business performance, as is the case at all other companies in the energy industry. This remains a key source of uncertainty. There is great planning uncertainty, particularly for long-term investments in electricity generation plants and the renewable energies project development business. Further developments in Germany will depend on the structure of future tender rounds. In our international target markets for renewable energies, we see key risk factors in local subsidy regimes and macroeconomic developments. Other major factors include the development in political frameworks, market access terms and public acceptance of projects. We expect our industry to be exposed to further fundamental change and underlying conditions to remain unstable. Energy markets are set to remain highly volatile, particularly in view of the current climate debate. Not only that, depending on the specific structure of the exit from the EU the Brexit decision may also impact on our business. Our business activities are therefore still subject to various risks.

We are monitoring all relevant developments very closely and ensuring that our opportunity/risk profile remains well balanced.

From the perspective of MVV's Executive Board, there were and are no indications that any risks, whether individual or aggregate, could have endangered the continued existence of the overall company, or of any material subgroup, in the period under report, or which could do so in future.

Consolidated Financial Statements

Income Statement

Income statement

Euro 000s	**1 Oct 2018 to 30 Sep 2019**	1 Oct 2017 to 30 Sep 2018	Notes
Sales[1]	3,820,091	4,098,376	
less electricity and natural gas taxes	160,349	166,911	
Sales after electricity and natural gas taxes	**3,659,742**	**3,931,465**	1
Changes in inventories	18,067	– 30,930	2
Own work capitalised	20,987	19,076	3
Other operating income [1,2]	327,067	476,914	4
Cost of materials [1]	2,800,954	3,041,979	5
Employee benefit expenses	438,229	422,744	6
Other operating expenses [1,2]	454,720	458,270	7
Impairment losses on financial instruments [2]	6,582	4,196	
Income from companies recognised at equity	25,332	– 110	8
Other income from shareholdings	– 1,732	1,133	8
Restructuring result	–	821	
EBITDA	**348,978**	**471,180**	
Depreciation	183,493	180,680	9
EBITA	**165,485**	**290,500**	
Goodwill amortisation	–	33,706	
EBIT	**165,485**	**256,794**	
of which result of IFRS 9 derivative measurement	– 56,100	31,591	
of which EBIT before result of IFRS 9 derivative measurement	221,585	225,203	
Financing income [3]	21,510	12,159	10
Financing expenses [3]	74,581	58,970	11
EBT	**112,414**	**209,983**	
Taxes on income [3]	36,155	77,375	12
Annual net income	**76,259**	**132,608**	
of which non-controlling interests [2]	30,276	2,507	
of which earnings attributable to MVV Energie AG shareholders (annual net income after minority interests)	45,983	130,101	13
Basic and diluted earnings per share (Euro)	**0.70**	**1.97**	

1 Previous year's figures adjusted due to IFRIC "Physical settlement of contracts to buy or sell a non-financial item (IFRS 9)"
2 Previous year's figures restructured
3 Previous year's figures adjusted due to first-time application of IFRS 9

Statement of Comprehensive Income

Statement of income and expenses recognised in group equity

Euro 000s	**1 Oct 2018 to 30 Sep 2019**	1 Oct 2017 to 30 Sep 2018
Annual net income [1]	**76,259**	**132,608**
Cash flow hedges	– 47,226	24,195
Hedging costs [1]	248	– 195
Currency translation differences	3,888	1,376
Reclassifiable share of companies recognised at equity	364	166
Items that may subsequently be reclassified to profit or loss	**– 42,726**	**25,542**
Actuarial gains and losses	– 17,591	893
Non-reclassifiable share of companies recognised at equity	– 1,353	14,370
Items that will not be reclassified to profit or loss	**– 18,944**	**15,263**
Total comprehensive income	**14,589**	**173,413**
Non-controlling interests	18,988	7,369
Total comprehensive income attributable to MVV Energie AG shareholders	**– 4,399**	**166,044**

1 Previous year's figures adjusted due to first-time application of IFRS 9

Balance Sheet

Balance sheet

Euro 000s	**30 Sep 19**	30 Sep 18	1 Oct 2017	Notes
Assets				
Non-current assets				
Intangible assets	309,494	315,923	345,064	14
Property, plant and equipment	2,633,871	2,588,247	2,519,369	15
Right-of-use assets	149,814	–	–	16
Investment properties	2,606	2,451	2,404	17
Interests in companies recognised at equity	188,816	189,414	180,015	18, 19
Other financial assets	78,931	57,662	56,541	21
Other receivables and assets	70,927	309,020	189,270	22
Deferred tax assets	29,368	30,420	33,435	33
	3,463,827	**3,493,137**	**3,326,098**	
Current assets				
Inventories	179,074	160,962	282,529	23
Trade receivables	365,038	381,729	351,104	24
Other receivables and assets	441,538	765,978	343,443	22
Tax receivables	15,156	27,586	18,908	25
Securities	–	–	7	
Cash and cash equivalents	357,564	310,589	370,301	26
Assets held for sale	–	–	20,498	
	1,358,370	**1,646,844**	**1,386,790**	
	4,822,197	**5,139,981**	**4,712,888**	
Equity and debt				
Equity				27
Share capital	168,721	168,721	168,721	
Capital reserve	455,241	455,241	455,241	
Accumulated net income [1]	768,308	777,833	705,540	
Accumulated other comprehensive income [1]	– 72,554	– 21,372	– 57,284	
Capital of MVV	**1,319,716**	**1,380,423**	**1,272,218**	
Non-controlling interests	215,551	244,791	248,884	
	1,535,267	**1,625,214**	**1,521,102**	
Non-current debt				
Provisions	211,849	181,370	198,689	28, 29
Tax provisions	7	–	4,987	28
Financial debt	1,533,537	1,163,138	1,299,227	30
Other liabilities	220,494	403,883	310,268	31
Deferred tax liabilities	143,461	173,809	162,983	33
	2,109,348	1,922,200	1,976,154	
Current debt				
Other provisions	152,331	138,988	134,794	28, 29
Tax provisions	33,816	54,879	31,803	28
Financial debt	168,632	222,858	148,413	30
Trade payables	361,609	340,256	351,179	32
Other liabilities	461,010	835,147	548,369	31
Tax liabilities	184	439	1,074	33
	1,177,582	**1,592,567**	**1,215,632**	
	4,822,197	**5,139,981**	**4,712,888**	

1 Previous year's figures adjusted due to first-time application of IFRS 9

Statement of Changes in Equity

Statement of changes in equity

Euro 000s	Equity contributed: Share capital of MVV Energie AG	Equity contributed: Capital reserve of MVV Energie AG	Equity generated: Accumulated net income	Equity generated – Accumulated other comprehensive income: Currency translation differences	Equity generated – Accumulated other comprehensive income: Fair value measurement of financial instruments	Equity generated – Accumulated other comprehensive income: Actuarial gains and losses	**Capital of MVV**	Non-controlling interests	**Total capital**
Balance at 1 October 2017 [1]	**168,721**	**455,241**	**705,540**	**17,497**	**– 7,475**	**– 67,306**	**1,272,218**	**248,884**	**1,521,102**
Other income and expenses recognised in equity [1]	–	–	–	1,089	19,810	15,044	35,943	4,862	40,805
Result of business operations [1]	–	–	130,101	–	–	–	130,101	2,507	132,608
Total comprehensive income	**–**	**–**	**130,101**	**1,089**	**19,810**	**15,044**	**166,044**	**7,369**	**173,413**
Dividends paid	–	–	– 59,316	–	–	–	– 59,316	– 17,753	– 77,069
Capital increase/reduction at subsidiaries	–	–	–	–	–	–	–	8,634	8,634
Change in scope of consolidation	–	–	1,508	– 31	–	–	1,477	– 2,343	866
Balance at 30 September 2018	**168,721**	**455,241**	**777,833**	**18,555**	**12,335**	**– 52,262**	**1,380,423**	**244,791**	**1,625,214**
Balance at 1 October 2018	**168,721**	**455,241**	**777,833**	**18,555**	**12,335**	**– 52,262**	**1,380,423**	**244,791**	**1,625,214**
Adjustment due to IFRS 9 and IFRS 15 [2]			20,349				20,349	4,903	25,252
Balance at 1 Oct 2018 (adjusted)	**168,721**	**455,241**	**798,182**	**18,555**	**12,335**	**– 52,262**	**1,400,772**	**249,694**	**1,650,466**
Other income and expenses recognised in equity	–	–	–	3,161	– 38,378	– 15,165	– 50,382	– 11,288	– 61,670
Result of business operations	–	–	45,983	–	–	–	45,983	30,276	76,259
Total comprehensive income	**–**	**–**	**45,983**	**3,161**	**– 38,378**	**– 15,165**	**– 4,399**	**18,988**	**14,589**
Dividends paid	–	–	– 59,316	–	–	–	– 59,316	– 17,795	– 77,111
Capital increase/reduction at subsidiaries	–	–	–	–	–	–	–	54	54
Change in scope of consolidation/ level of shareholding	–	–	– 16,541	– 893	61	32	– 17,341	– 35,390	– 52,731
Balance at 30 September 2019	**168,721**	**455,241**	**768,308**	**20,823**	**– 25,982**	**– 67,395**	**1,319,716**	**215,551**	**1,535,267**

1 Previous year's figures adjusted due to first-time application of IFRS 9
2 Opening values adjusted due to first-time application of IFRS 9 and IFRS 15

Cash Flow Statement

Cash flow statement [1]

Euro 000s	**1 Oct 2018 to 30 Sep 2019**	1 Oct 2017 to 30 Sep 2018
Annual net income before taxes on income [2]	112,414	209,983
Amortisation, depreciation and write-ups of intangible assets, property, plant and equipment and investment properties	182,746	214,386
Financial result [2]	53,070	46,811
Interest received	9,274	7,550
Change in non-current provisions	15,833	126
Other non-cash income and expenses	54,783	– 440
Result of disposal of non-current assets	918	– 28,512
Cash flow before working capital and taxes	**429,038**	**449,904**
Change in other assets	– 94,195	29,044
Change in other liabilities	– 35,464	– 71,387
Change in current provisions	1,978	– 12,545
Income taxes paid	– 63,812	– 63,528
Cash flow from operating activities	**237,545**	**331,488**
Payments for investments in intangible assets, property, plant and equipment and investment properties	– 266,765	– 269,376
Proceeds from disposals of intangible assets, property, plant and equipment and investment properties	20,200	56,577
Proceeds from subsidy payments	5,316	14,808
Proceeds from sale of fully consolidated companies	13,197	–
Proceeds from sale of other financial assets	11,726	281
Payments for acquisition of fully consolidated companies and other business units	– 17,263	– 4
Payments for other financial assets	– 8,092	– 14,073
Cash flow from investing activities	**– 241,681**	**– 211,787**
Proceeds from taking up of loans	552,758	190,250
Payments for redemption of loans	– 358,838	– 250,597
Dividends paid	– 59,316	– 59,316
Dividends paid to non-controlling interests	– 17,795	– 17,753
Change due to changes in capital at minority interests	– 14,817	7,914
Interest paid	– 51,886	– 49,703
Cash flow from financing activities	**50,106**	**– 179,205**
Cash-effective changes in cash and cash equivalents	45,970	– 59,504
Change in cash and cash equivalents due to currency translation	1,005	– 208
Cash and cash equivalents at 1 October 2018 (2017)	310,589	370,301
Cash and cash equivalents at 30 September 2019 (2018)	**357,564**	**310,589**
of which cash and cash equivalents at 30 September 2019 (2018) with restraints on disposal	1,833	1,226

1 Further information about cash flow statement in Note 37
2 Previous year's figures adjusted due to first-time application of IFRS 9

Cash flow - aggregate presentation		
Euro 000s	**1 Oct 2018 to 30 Sep 2019**	1 Oct 2017 to 30 Sep 2018
Cash and cash equivalents at 1 October 2018 (2017)	**310,589**	**370,301**
Cash flow from operating activities	237,545	331,488
Cash flow from investing activities	– 241,681	– 211,787
Cash flow from financing activities	50,106	– 179,205
Change in cash and cash equivalents due to currency translation	1,005	– 208
Cash and cash equivalents at 30 September 2019 (2018)	**357,564**	**310,589**

Notes to MVV's 2019 Consolidated Financial Statements

Information about the company

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

Basis of preparation

MVV's consolidated financial statements have been prepared pursuant to § 315e (1) of the German Commercial Code (HGB) in accordance with the International Financial Reporting Standards (IFRS) issued by the International Accounting Standards Board (IASB) and the interpretations (IFRIC) of the IFRS Interpretations Committee (IFRS IC). The consolidated financial statements thus fully conform with the IFRS and IFRIC published by the IASB and the IFRS IC to the extent that these had been adopted by the European Union at the end of the period under report and required mandatory application as of 30 September 2019.

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 2019 financial year (1 October 2018 to 30 September 2019). The consolidated financial statements are compiled in euros. Unless otherwise indicated, all amounts are stated in thousand euros (Euro 000s).

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

The Executive Board of MVV Energie AG is responsible for the preparation, completeness and accuracy of the consolidated financial statements and the combined management report. The Executive Board prepared the consolidated financial statements and combined management report on 12 November 2019 and subsequently forwarded these to the Supervisory Board for approval.

Changes in accounting policies

The International Accounting Standards Board (IASB) and the IFRS Interpretations Committee (IFRS IC) have revised or newly adopted some standards and interpretations which require mandatory application for the first time in the 2019 financial year. None of the standards and interpretations not listed in the table below has any (material) implications for MVV:

Amended standards and interpretations

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

1 Applicable in financial years beginning on or after the date stated
2 Premature application together with IFRS 15 as of 1 October 2018

The IASB and the IFRS IC have published standards and interpretations not yet requiring mandatory application in the 2019 financial year and of which no voluntary premature application has been made. None of the standards and interpretations not listed in the table below is expected to have any material implications for MVV:

Amended standards and interpretations

	EU endorsement	Effective date [1]	Implication
IFRS 3 Definition of a Business	Outstanding	1 January 2020	The amendment to IFRS 3 restricts the definition of a business in such a way that fewer transactions will tend to qualify as business combinations in future. Such transactions may require recognition as purchases of groups of assets for which no goodwill arises upon acquisition.

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

MVV applied IFRS 9 "Financial Instruments" for the first time as of 1 October 2018. IFRS 9 has replaced the existing requirements of IAS 39 "Financial Instruments: Recognition and Measurement". Consistent with the transitional requirements provided for in IFRS 9, MVV has drawn on the option of continuing to present comparative information in line with IAS 39. One exception involves specific aspects of hedge accounting, which have been retrospectively adjusted in other comprehensive income.

IFRS 9 includes revised requirements for the classification and measurement of financial instruments, the impairment of financial assets and hedge accounting. The classification and measurement of financial assets in IFRS 9 is based on the company's business model and the contractual cash flow characteristics of the respective financial instrument. Where the requirements for the "hold" business model and the contractual cash flow characteristics of the respective debt instrument are met, these debt instruments are recognised at amortised cost. Where, in respect of the business model, only the conditions for "hold and sell" and simultaneously the conditions for the contractual cash flow characteristics of the respective debt instrument are met, fair value changes for these debt instruments are recognised in other comprehensive income apart from those changes resulting from amended loss allowances. All other debt instruments are recognised at fair value, with changes in value being credited or charged to the income statement. Equity instruments require recognition at fair value.

Fair value adjustments may be recognised either in the income statement or in other comprehensive income. The exception that allowed equity instruments to be recognised at cost in specific circumstances no longer applies. For financial liabilities, the IAS 39 requirements have largely been retained without amendment.

The table below presents financial assets and liabilities with their previous IAS 39 measurement categories, new IFRS 9 measurement categories and the corresponding carrying amounts.

Transition of measurement categories from IAS 39 to IFRS 9

Euro 000s	IAS 39 measurement categories	IAS 39 carrying amounts at 30 Sep 2018	Change due to measurement at fair value	Changes due to additional impairments under IFRS 9	Changes due to IFRS 15 and IFRS 16	IFRS 9 carrying amounts at 1 Oct 2018	IFRS 9 measurement categories
Assets							
Financial assets							
of which other shareholdings	Available for sale	7,410	2,273	–	–	9,683	
						8,536	Fair value through profit or loss
						1,147	Not applicable
of which loans excluding finance leases	Loans and receivables	10,164	–	– 42	–	10,122	Amortised cost
of which loans in connection with finance leases	Not applicable	50,248	–	– 49	–	50,199	Not applicable
Trade receivables < 1 year	Loans and receivables	381,729	–	– 1,276	– 15,684	364,769	Amortised cost
Other assets							
of which derivatives outside hedge accounting	Held for trading	878,817	–	–	–	878,817	Fair value through profit or loss
of which derivatives within hedge accounting	Not applicable	78,414	–	–	–	78,414	Not applicable
of which other operating assets	Loans and receivables	100,296	–	– 201	17,530	117,625	
						28,951	Amortised cost
						14,471	Fair value through profit or loss
						53,156	Outside scope of IFRS 7
						21,047	Not applicable
Cash and cash equivalents	Loans and receivables	310,589	–	–	–	310,589	Amortised cost
		1,817,667	**2,273**	**– 1,568**	**1,846**	**1,820,218**	
Debt							
Financial debt							
of which financial debt in connection with leases	Not applicable	45,237	–	–	88,143	133,380	Not applicable
of which other financial debt	Amortised cost	1,340,759	–	–	–	1,340,759	Amortised cost
Trade payables <1 year	Amortised cost	340,256	–	–	681	340,937	Amortised cost
Other liabilities							
of which derivatives outside hedge accounting	Held for trading	797,014	–	–	–	797,014	Fair value through profit or loss
of which derivatives within hedge accounting	Not applicable	52,012	–	–	–	52,012	Not applicable
of which other operating liabilities	Amortised cost	357,218	–	–	– 59,405	297,813	
						142,733	Amortised cost
						155,080	Outside scope of IFRS 7
		2,932,496	**–**	**–**	**29,419**	**2,961,915**	

The first-time application of IFRS 9 did not have any implications for financial liabilities.

Unlike IAS 9 requirements, the new IFRS 9 impairment model accounts not only for losses that have already been incurred, but also for expected losses (expected credit loss model). This means that impairments of financial assets are recognised at an earlier point in time. Moreover, when determining loss allowances greater reference is made to prospective information. This will mainly affect trade receivables. Loss allowances for trade receivables without significant financing components and for contract assets are calculated using the simplified approach set out in IFRS 9.

The effects resulting from first-time application of the new impairment model are presented in the following table. The resultant item has been recognised directly in equity in the opening balance sheet for 2019.

Reconciliation of IFRS 9 loss allowances

Euro 000s	Trade receivables	Receivables and other financial assets	Loans	Other financial assets
Impairments pursuant to IAS 39 at 30 September 2018	35,258	3,348	4,221	–
Change in impairments due to IFRS 9	1,276	185	41	66
Impairments pursuant to IFRS 9 at 1 October 2018	**36,534**	**3,533**	**4,262**	**66**

The revised hedge accounting requirements are intended to create a closer relationship between a company's risk management strategy and the conclusion of a hedging relationship. Furthermore, IFRS 9 has extended the range of hedged items qualifying for hedge accounting and simplified the effectiveness measurement and thus the conditions governing eligibility for hedge accounting. MVV is able to maintain its existing hedge relationships under IFRS 9. Moreover, under IFRS 9 changes in the fair value of an option designated as a hedge have to be recognised as hedging costs in other comprehensive income. The amounts recognised in other comprehensive income are subsequently reflected in the hedged item on either a transaction or a period basis. This amendment was applied retrospectively. As of 1 October 2017, an amount of Euro 512 thousand was reclassified out of equity and recognised through profit or loss. The financing income and financing expenses recognised in the income statement for the 2018 financial year have decreased by Euro 418 thousand and Euro 699 thousand respectively.

For forward transactions requiring physical settlement that are recognised pursuant to IFRS 9 as derivatives through profit or loss, the existing measurement is withdrawn upon settlement, with the resultant amounts recognised through profit or loss as other operating income or expenses.

Sales and cost of materials are recognised in the amount of the agreed forward prices. We have reviewed the implications of the decision taken by the IFRS Interpretations Committee (IFRS IC) on the "Physical settlement of contracts to buy or sell a non-financial item (IFRS 9)" and implemented the decision as of 30 September 2019, and thus within the year under report. Accordingly, upon settlement sales and cost of materials will in future be recognised in the amount of the respective current spot prices.

Moreover, MVV applied IFRS 15 "Revenue from Contracts with Customers" for the first time as of 1 October 2018.

IFRS 15 replaces the following existing standards and interpretations: IAS 11 "Construction Contracts", IAS 18 "Revenue", IFRIC 13 "Customer Loyalty Programmes", IFRIC 15 "Agreements on the Construction of Real Estate", IFRIC 18 "Transfers of Assets from Customers" and SIC-31 "Revenue – Barter Transactions Involving Advertising Services". MVV has applied IFRS 15 using the cumulative retrospective method.

For allocations in the renewable energies business, the clarifications relating to the constellation of principal or agent will lead in future to a reduction in sales and an equivalent reduction in the cost of materials. MVV acts as an agent when the following criteria are met: Another party is primarily responsible for fulfilling the contract, no inventory or default risks are assumed, MVV does not have discretion to establish the pricing and the consideration takes the form of commission.

The amount netted for sales and cost of materials depends on future developments in the market premium and in the compensation paid under the EEG legislation. In the 2019 financial year, this netting led the income statement to contract by Euro 233 million. This amendment did not have any impact on earnings.

Reclassifications have arisen in the balance sheet between the assets and contract assets and the liabilities and contract liabilities recognised in the past. These mainly related to building cost grants and prepayments received.

Application of IFRS 15 has resulted in the capitalisation of contract acquisition costs. This has slightly extended the balance sheet. Customer acquisition costs of Euro 439 thousand were incurred in the 2019 financial year. These are being amortised over the average contract term. Costs relating to contract terms of less than one year are directly expensed.

Furthermore, upon the introduction of IFRS 15 the period over which building cost grants for electricity and gas connections are reversed was amended to 20 years. Moreover, upon the introduction of IFRS 15 we brought the period of reversal in line with norms customary to our industry. In the previous year, the reversal was based on the useful life of the underlying grid. The resultant increase in equity amounts to Euro 30 million.

Upon the first-time application of IFRS 16, the previous classification of leases at the lessee as operating or finance leases was abolished and replaced by a uniform right-of-use model. Since 1 October 2018, leases have been recognised as right-of-use assets and corresponding lease liabilities from the time when the underlying assets are available for use by the Group. One exception relates to contracts with terms of less than twelve months and low-value assets, which are permitted to be expensed on a straight-line basis. MVV has drawn on this accounting option. Implementation of the new standard means that, from the financial year under report, previously existing operating leases have also triggered capital retention in the form of a right-of-use asset and a liability. This approach is largely comparable with that previously taken to recognise finance leases. The implications for previously existing finance leases do not involve any material amendments. These leases have been measured at the same amounts, with only their statement being amended. 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 leases 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. Upon first-time application, leases were discounted using the lessee's incremental borrowing rate, which was determined based on the contract terms and underlying currencies.

For lessors, the accounting model does not differ to any significant extent from that in IAS 17 "Leases".

Upon first-time application of IFRS 16, the Group did not have any onerous leases. As a result, no corresponding allowances had to be recognised for right-of-use assets. The Group opted not to apply the new requirements to leases whose terms expire within twelve months of the date of first-time application. These leases are accounted for in the same way as short-term leases and expensed.

Furthermore, the following practical expedients were used upon first-time application: the use of an individual discount rate for portfolios of leases with similar characteristics; waiver of an impairment review; exclusion of initial direct costs when measuring right-of-use assets; renewed assessment of termination or extension options upon the lessee obtaining more accurate information.

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

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

Based on the operating lease liabilities at 30 September 2018, the reconciliation with the values stated for lease liabilities in the opening balance sheet at 1 October 2018 was as follows:

Reconciliation of lease liabilities at 1 October 2018

Euro 000s	**FY 2019**
Financial obligations for operating leases at 30 Sep 2018	106.619
Minimum lease payments (nominal value) of liabilities in connection with finance leases at 30 September 2018	67.824
< 1 year	5.571
> 1 year and < 5 years	21.295
> 5 years	40.958
Practical expedient for short-term leases	2.520
Practical expedient for low-value asset leases	546
Gross lease liabilities at 1 October 2018	**171.377**
Discounting	37.997
Lease liabilities at 1 October 2018 under IFRS 16	**133.380**
of which for operating leases under IAS 17	88.143
of which for finance leases under IAS 17	45.237

Upon the introduction of IFRS 16, financial obligations for operating leases were recalculated and adjusted as of 30 September 2019.

Lease liabilities were discounted as of 1 October 2018 using the lessee's incremental borrowing rate. The weighted average interest rate amounted to 1.45 %. With regard to the transitional requirements, MVV has applied the modified retrospective approach.

The impact of IFRS 9, IFRS 15 and IFRS 16 conversion effects on the balance sheet, revenue reserves and other comprehensive income is presented in the following tables.

Reconciliation of balance sheet pursuant to IFRS 9, IFRS 15 and IFRS 16

Euro 000s	30 Sep 2018	IFRS 9 effects	IFRS 15 effects	IFRS 16 effects	1 Oct 2018
Non-current assets	**3,493,137**	**2,306**	**16**	**88,143**	**3,583,602**
of which property, plant and equipment	2,588,247	–	–	– 54,876	2,533,371
of which right-of-use assets	–	–	–	143,019	143,019
of which other financial assets	57,662	2,206	–	–	59,868
of which other receivables and assets	309,020	– 41	–	–	308,979
of which deferred tax assets	30,420	141	16	–	30,577
Current assets	**1,646,844**	**– 1,461**	**– 5,239**	**–**	**1,640,144**
of which inventories	160,962	–	– 7,085	–	153,877
of which trade receivables	381,729	– 1,276	– 15,684	–	364,769
of which other receivables and assets	765,978	– 185	17,530	–	783,323
Equity	**1,625,214**	**1,143**	**24,108**	**–**	**1,650,465**
Non-current debt	**1,922,200**	**– 298**	**– 28,032**	**80,190**	**1,974,060**
of which non-current financial debt [1]	1,163,138	–	–	80,190	1,243,328
of which non-current other liabilities	403,883	–	– 38,492	–	365,391
of which deferred tax liabilities	173,809	– 298	10,460	–	183,971
Current debt	**1,592,567**	**–**	**– 1,299**	**7,953**	**1,599,221**
of which other provisions	138,988	–	33	–	139,021
of which trade payables	340,257	–	681	–	340,938
of which current financial debt [1]	222,858	–	–	7,953	230,811
of which current other liabilities	835,147	–	– 2,013	–	833,134

1 Figure includes former liabilities of Euro 45,237 thousand in connection with finance leases

Reconciliation of accumulated net income

Euro 000s	FY 2019
Accumulated net income at 30 September 2018	777,833
IFRS 9 effects	
Change in risk provision	– 777
Adjustments resulting from measurement of equity instruments	1,615
IFRS 15 effects	19,511
Accumulated net income at 1 October 2018	**798,182**

Reconciliation of accumulated other comprehensive income

Euro 000s	FY 2018
Accumulated other comprehensive income at 30 September 2017	– 6,963
IFRS 9 effects: Hedging costs	– 512
Fair value measurement of financial instruments at 1 October 2017	**12,335**

Reconciliation of accumulated net income

Euro 000s	FY 2018
Accumulated net income at 30 September 2017	705,028
IFRS 9 effects: Hedging costs	512
Fair value measurement of financial instruments at 1 October 2017	**705,540**

Consolidation methods

The financial statements included in consolidation have been prepared on the basis of uniform accounting policies as of 30 September 2019.

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

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

Shareholdings in companies not included by way of full consolidation or by application of the equity method have been accounted for in accordance with IFRS 9.

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

Scope of consolidation and changes in scope of consolidation

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

Scope of consolidation

Number of companies	Fully consolidated companies	Companies recognised at equity
30 September 2018	172	37
Additions	11	3
Disposals	18	4
30 September 2019	**165**	**36**

The increase in the shareholding held in DC-Datacenter-Group GmbH, Wallmenroth, to 74.99 % led to the addition of three new fully consolidated companies to the scope of consolidation as of 1 April 2019. The shares are held by MVV Enamic GmbH, Mannheim, a wholly-owned subsidiary of MVV Energie AG. The companies, which previously were consolidated at equity as joint ventures, specifically involve: DC-Datacenter-Group GmbH, Wallmenroth, RZ-Products GmbH, Wallmenroth and DC-Group Immobilienverwaltung GmbH & Co. OHG, Wallmenroth.

The fair values of the assets and liabilities identifiable for Data Center Group upon full consolidation are presented in the table below. The goodwill is fully attributable to MVV. No share of goodwill attributable to minorities was identified. The acquisition costs of Euro 27,070 thousand correspond to the total of the fair value of the shareholding prior to full consolidation and the purchase price for those shares additionally acquired which led to control of Data Center Group.

Identifiable assets and liabilities

Euro 000s	Data Center Group, Wallmenroth Recognised upon acquisition
Intangible assets	4,579
Property, plant and equipment	6,677
Shareholdings recognised at equity	115
Right-of-use assets	5,855
Other financial assets	23,931
Inventories	2,365
Trade receivables	6,388
Other receivables and assets	9,587
Cash and cash equivalents	838
Provisions	1,910
Trade payables	2,268
Financial debt	29,270
Other liabilities	10,622
Deferred tax liabilities	2,996
Fair value of net assets	**13,269**
Acquired share of net assets	**9,952**
Goodwill	17,118

Since full consolidation, Data Center Group has contributed sales of Euro 18,748 thousand and earnings of Euro – 339 thousand.

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

Disposals from fully consolidated companies mostly relate to mergers at the Juwi, Soluvia and Umwelt subgroups, as well as to sales of project companies at the Juwi and Windwärts subgroups. Furthermore, the following companies were sold in the 4th quarter of the year under report: Götzfried + Pitzer Entsorgungs GmbH, Ulm, and Vents d'Oc Energies Renouvelables, Montpellier, France.

The changes in companies recognised at equity also mainly involve mergers 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 date rate. Consistent with their respective allocation, currency translation differences are recognised either in earnings from operations or the financial result.

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

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

Currency translation

	Reporting date rate		Average rate	
1 Euro	**30 Sep 2019**	30 Sep 2018	**1 Oct 2018 to 30 Sep 2019**	1 Oct 2017 to 30 Sep 2018
Czech crown (CZK)	25.816	25.731	25.741	25.591
British pound (GBP)	0.886	0.887	0.884	0.885
US dollar (USD)	1.089	1.158	1.128	1.190
South African rand (ZAR)	16.558	16.445	16.166	15.570

Source: European Central Bank

Accounting policies

Assets and liabilities are measured at amortised cost in all cases with the exception of certain assets, liabilities and derivative financial instruments which IFRS 9 and IFRS 13 require to be measured at fair value where this can be reliably determined. Non-current receivables and debt are recognised at fair value. Assets and liabilities are netted where the relevant requirements are met. Income and expenses derived from assets and liabilities are recognised under earnings from operations or in the financial result depending on the respective balance sheet item. Period deferrals are accounted for where necessary. Items are recognised directly in equity where International Accounting Standards so require and are presented separately in the statement of changes in equity.

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

Intangible assets

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

Property, plant and equipment

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

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

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

Useful lives in years	
Buildings	5 – 100
Technical equipment and machinery	2 – 55
Transmission grids	2 – 69
Plant and operating equipment	1 – 50

Investment properties

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

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

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

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

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

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

Receivables and other assets

Receivables and other assets include trade receivables, other receivables and assets and tax receivables.

Apart from derivative financial instruments, these are measured at amortised cost. Initial measurement is carried out as of the performance date. Any write-downs required are based on the expected level of default risk. The values of receivables are generally corrected by means of an allowance schedule.

Trade receivables mainly comprise receivables from contracts with customers. These are recognised when the respective goods are delivered or services performed. Should consideration be conditional on something other than the passage of time, then a contract asset is capitalised and recognised under other assets. Trade receivables include accruals/deferrals to cover energy and water sales not yet read or invoiced as of the balance sheet date. Part-payments made in the context of annual consumption invoicing are deducted from the receivables. Default risks existing at the balance sheet date are covered by adequate write-downs. Receivables are derecognised immediately upon becoming uncollectible. The carrying amounts reported are basically equivalent to their respective fair values.

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

Inventories

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

Cash and cash equivalents

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

Non-current assets and liabilities held for sale

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

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

Deferred taxes

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

Provisions

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

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

Financial instruments

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

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

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

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

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

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

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

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

No use is made of the fair value option.

Derivative financial instruments: Derivative financial instruments particularly include interest rate and currency derivatives, as well as commodity derivatives, in this case mainly for electricity, gas, coal and CO_2. Derivative financial instruments are measured at fair value both upon initial recognition and in subsequent periods and are reported under other assets or other liabilities. The amounts recognised are derived from market values or using recognised valuation methods (present value method or option pricing models based on current market parameters). In particular, certain long-term energy contracts and interest rate derivatives are, where no market prices are available, measured using recognised valuation methods based on internal fundamentals. Changes in the value of interest rate and currency derivatives relating to operations are recognised as income or expenses under earnings from operations or in the financial result. Changes in the value of all other derivative financial instruments are recognised as income or expenses under other operating income and expenses. Derivatives deployed in cash flow hedges have to be treated separately. Where they additionally meet IFRS 9 hedge accounting requirements, changes in the fair value of the effective portion of the hedging instrument are recognised directly in equity under fair value measurement of financial instruments. When the underlying transaction is recognised in the income statement, the hedging instrument is also recognised through profit or loss and thus compensates for the impact of the underlying transaction. Alongside cash flow hedge accounting, risks may also be hedged with fair value hedges. Here, changes in the fair values of those derivatives which serve to hedge a fair value and qualify as fair value hedges are recognised through profit or loss at the same time as the risk thereby hedged. For fair value hedges, changes in the value of primary financial instruments arising due to exchange rate movements may additionally be hedged by the currency-related changes in other primary financial instruments or currency derivatives.

Pending transactions intended to secure market prices in the field of energy trading are within the scope of IFRS 9 and are recognised as derivative financial instruments, while the hedged items (sales contracts) are generally not covered by IFRS 9. The accounting treatment under IFRS 9 relates in particular to commodities futures transactions. Where possible, the own use exemption is applied for these energy trading transactions. Other energy trading transactions are recognised as cash flow hedges or as standalone derivatives.

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

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

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

Discretionary decisions in the application of accounting policies

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

Measurement uncertainties

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

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

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

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

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

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

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

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

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

The amendments made to estimates in the 2019 financial year due to IAS 8 did not lead to any notable adjustments in the relevant income, expenses, assets or liabilities.

NOTES TO INCOME STATEMENT

1. Sales after electricity and natural gas taxes

Sales include all revenues generated by the Group's typical business activities. MVV's main products are electricity, heating energy, gas, water and waste incineration and disposal. The Group also generates significant revenues from services and from solar and wind power project development services. Revenues from contracts with customers are generally recognised upon delivery to the customer or performance of the service 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 conditioned on something other than the passage of time, the respective claims are recognised as contract assets.

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

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

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

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

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

Sales by product group

Euro 000s	**FY 2019**	FY 2018
Electricity [1]	1,656,037	2,094,707
Heating energy	374,362	359,409
Gas [1]	706,389	576,571
Water	89,187	86,988
Other sales	833,767	813,790
	3,659,742	**3,931,465**

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

Timing of sales recognition

Euro 000s	**FY 2019**	FY 2018
Sales recognised at a point in time	3,232,903	3,555,715
Electricity [1]	1,656,037	2,094,707
Heating energy	374,362	359,409
Gas [1]	706,389	576,571
Water	89,187	86,988
Other sales	406,928	438,040
Sales recognised over time	426,839	375,750
Project development	380,019	335,455
Operations management services	46,820	40,295
	3,659,742	**3,931,465**

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

The previous year's sales figures for the electricity and gas products have been increased by Euro 28,627 thousand due to NIFRIC "Physical settlement of contracts to buy or sell a non-financial item (IFRS 9)".

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

In group currency, sales at our foreign subsidiaries came to Euro 443,964 thousand (previous year: Euro 206,095 thousand). The increase in this share of sales is chiefly due to the higher number of projects realised abroad.

The volume of sales included in net contract liabilities at the beginning of the period under report and since recognised amounts to Euro 24,395 thousand.

2. Changes in inventories

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

3. Own work capitalised

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

4. Other operating income

Other operating income

Euro 000s	FY 2019	FY 2018
Income from IFRS 9 derivatives [1]	236,728	336,350
Income from emission rights [1]	14,176	15
Reversal of provisions	15,581	42,851
Agency agreements and personnel supplies	9,782	4,836
Reimbursements of damages claims	8,985	5,400
Exchange rate gains	5,211	5,428
Benefits to employees	4,458	4,185
Rental income	3,884	3,667
Credits and refunds	2,863	2,756
Income from sales of assets and write-ups	1,716	1,734
Income from sales of assets held for sale	–	30,802
Miscellaneous	23,683	38,890
	327,067	**476,914**

1 Previous year's figures adjusted due to NIFRIC "Physical settlement of contracts"

The previous year's figures for other operating income have been increased by Euro 68,970 thousand due to NIFRIC "Physical settlement of contracts to buy or sell a non-financial item (IFRS 9)" and reduced by Euro 10,314 thousand due to the new statement of impairment losses under IAS 1.

Other operating income particularly includes measurement items for energy trading transactions requiring measurement under IFRS 9. Measurement items relating to energy trading transactions are reported on a gross basis. This valuation-dependent income is offset by corresponding expenses.

The increase in income from emission rights was due to higher market prices.

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

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

Future income from operating lease payments

Euro 000s	FY 2019
Minimum lease payments with maturities < 1 year	1,562
Minimum lease payments with maturities > 1 year and < 5 years	2,940
Minimum lease payments with maturities > 5 years	2,611

5. Cost of materials

Cost of materials

Euro 000s	FY 2019	FY 2018
Raw materials, supplies and purchased goods [1]	1,944,490	2,199,941
Procurement of wind turbines and solar power systems	294,378	285,650
Purchased services	562,086	556,388
	2,800,954	**3,041,979**

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

The previous year's figures for cost of materials have been increased by Euro 84,218 thousand in the electricity and gas products due to NIFRIC "Physical settlement of contracts to buy or sell a non-financial item (IFRS 9)".

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 2019	FY 2018
Wages and salaries	358,910	345,592
Social security expenses and welfare expenses	59,934	57,838
Pension expenses	19,385	19,314
	438,229	**422,744**

MVV had an annual average of 6,040 employees (previous year: 6,006). This total includes 10 executives (previous year: 10), 5,713 employees (previous year: 5,680), 287 trainees (previous year: 281) and 30 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 2019	FY 2018
Expenses for IFRS 9 derivatives [1]	268,529	246,467
Contributions, fees and duties	30,271	31,990
Expenses for advisory services	27,255	32,634
Maintenance, repair and IT service expenses	20,276	21,844
Operating taxes (including energy taxes)	15,796	12,819
Employee benefit and welfare expenses	12,605	12,312
Rental, leasehold and leasing expenses	12,327	22,759
Public relations expenses	10,812	11,411
Facility management	7,748	7,344
Personnel supplies	4,698	10,008
Service contracts	3,872	5,397
Losses incurred on sales of assets	3,473	4,025
Exchange rate losses	2,860	7,169
Hospitality expenses	1,960	2,186
Office materials and specialist literature	1,688	1,744
Miscellaneous [1]	30,550	28,161
	454,720	**458,270**

1 Previous year's figures adjusted due to NIFRIC "Physical settlement of contracts"

The previous year's figures for other operating expenses have been increased by Euro 13,457 thousand due to NIFRIC "Physical settlement of contracts to buy or sell a non-financial item (IFRS 9)" and reduced by Euro 14,511 thousand due to the new statement of impairment losses under IAS 1.

Other operating expenses include negative measurement items for energy trading transactions requiring measurement under IFRS 9. Measurement items relating to energy trading transactions are reported on a gross basis. These valuation-dependent expenses are countered by other operating income offsetting this item.

The reduction in rental, leasehold and leasing expenses was mainly due to the first-time application of IFRS 16.

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

Interests in associates and joint ventures are recognised initially at cost and subsequently at the amortised value of the prorated net assets. The carrying amounts are increased or reduced annually to account for prorated earnings, dividends paid and other changes in equity. Any goodwill thereby recognised is included in the value of the shareholding, rather than being reported separately. Impairment losses are recognised on the at-equity carrying amount when the recoverable amount falls short of the carrying amount. When the reasons for impairment losses previously recognised on the at-equity carrying amount no longer apply, the carrying amount is correspondingly written up through profit or loss.

Income from companies recognised at equity and other income from shareholdings

Euro 000s	FY 2019	FY 2018
Income from companies recognised at equity	25,332	– 110
Income from other shareholdings	1,229	1,144
Expenses/income from sales of financial assets	– 2,961	– 11
	23,600	**1,023**

The changes in the income from companies recognised at equity were mainly due to the subsequent measurement of those companies over which MVV exercises significant influence.

9. Depreciation and amortisation

Depreciation and amortisation

Euro 000s	FY 2019	FY 2018
Depreciation	183,493	180,680
of which impairment losses	–	–

10. Financing income

Financing income

Euro 000s	FY 2019	FY 2018
Income from currency translation in connection with financing activities	10,579	3,548
Interest income from finance leases	3,540	3,240
Income from IFRS 9 measurement[1]	1,445	206
Interest income from current account, overnight and fixed-term deposits	1,052	774
Other interest and similar income	4,894	4,391
	21,510	**12,159**

1 Previous year's figures adjusted due to first-time application of IFRS 9

11. Financing expenses

Financing expenses

Euro 000s	FY 2019	FY 2018
Interest expenses from current account, non-current and current loans	36,730	35,627
Compounding of provisions	10,990	2,826
Expenses from currency translation in connection with financing activities	10,000	3,654
Expenses for IFRS 9 measurement [1]	742	1,006
Other interest and similar expenses	16,119	15,857
	74,581	**58,970**

1 Previous year's figures adjusted due to first-time application of IFRS 9

The other interest and similar expenses were reduced by Euro 3,558 thousand as a result of the capitalisation of borrowing interest (previous year: Euro 3,127 thousand). The financing cost rate thereby assumed ranged from 1.4 % to 2.5 % in the financial year under report and from 1.4 % to 1.9 % in the previous year. Expenses for compounding provisions mainly relate to long-term personnel provisions.

12. Taxes on income

Taxes on income

Euro 000s	FY 2019	FY 2018
Actual taxes	54,803	72,163
Deferred taxes [1]	– 18,648	5,212
	36,155	**77,375**

1 Previous year's figures adjusted due to first-time application of IFRS 9

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

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

The deferred tax income is due on the one hand to tax expenses of Euro 1,650 thousand (previous year: Euro 6,673 thousand) that are attributable to the change in the write-down on losses carried forward and the recognition through profit or loss of losses carried forward, as well as to deferred tax income of Euro 20,298 thousand (previous year's figure adjusted due to first-time application of IFRS 9: Euro 1,461 thousand) attributable to the arising and/or reversal of temporary differences.

Actual tax expenses were reduced by Euro 5,646 thousand by using tax losses not previously recognised (previous year: Euro 1,348 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 2019	FY 2018
Earnings before taxes (EBT) [1]	**112,414**	**209,983**
Expected tax expenses based on tax rate of 30.3 % (previous year: 30.3 %) [1]	**34,061**	**63,625**
Deviations resulting from trade tax assessment base	1,216	1,851
Deviations from expected tax rate	– 4,884	– 3,075
Utilisation of losses carried forward, change in write-down for losses and losses for which no deferred taxes are recognised	1,716	6,590
Non-deductible expenses	8,298	3,300
Tax-exempt income	– 7,098	– 6,939
Income from shareholdings recognised at equity	– 4,113	4,725
Permanent differences	5,248	– 7,220
Taxes for previous years	1,225	5,510
Goodwill impairments	–	10,212
Miscellaneous	486	– 1,204
Effective tax expenses [1]	**36,155**	**77,375**
Effective tax rate (%) [1]	**32.2**	**36.9**

1 Previous year's figures adjusted due to first-time application of IFRS 9

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

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

	FY 2019	FY 2018
Share of earnings attributable to MVV Energie AG shareholders (Euro 000s)	45,983	130,101
Number of shares (weighted average in 000s)	65,907	65,907
Earnings per share (Euro)	0.70	1.97
Dividend per share (Euro)	0.90	0.90

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

The dividend for the 2019 financial year is consistent with the proposal submitted by the Executive and Supervisory Boards and is subject to approval by the Annual General Meeting on 13 March 2020. The proposal provides for the distribution of a dividend of Euro 59,316 thousand. The proposals for the amount of dividend and appropriation of earnings for the 2018 financial year were approved by the Annual General Meeting held on 8 March 2019. A dividend of Euro 59,316 thousand was thus 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 consist of software, rights eligible for capitalisation and customer lists. As in the previous year, no intangible assets are subject to restrictions on disposal.

MVV performs only a low volume of research and development. The amount of research and development expenses qualifying under IFRS came to Euro 575 thousand in the 2019 financial year (previous year: Euro 714 thousand). Development expenses capitalised under IAS 38 came to Euro 334 thousand in the year under report (previous year: Euro 228 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 2019 financial year were based on determining the recoverable amounts of the cash generating units to which goodwill was allocated. These still correspond to the legal subgroups.

As no market prices or other binding indicators for the value of the units were available, their fair values less costs to sell were determined using discounted cash flow methods. These correspond to Level 3 measurements in the IFRS 13 hierarchy. Taking due account of corresponding expected prices from relevant and validated market forecasts, the historic cash flows of the units were extrapolated over a forecast period of three to five years and discounted using discount rates (weighted costs of capital) of 5.3 % to 11.5 % before taxes (previous year: 5.9 % to 12.8 %). A growth rate of 0.5 % was assumed for the perpetuity included in the calculation.

A sensitivity analysis varying the discount rate by 0.5 % did not produce any changes in the findings of the impairment test.

The carrying amounts stated for goodwill are structured as follows:

Goodwill carrying amounts

Euro 000s	**30 Sep 2019**	30 Sep 2018
Juwi subgroup	74,970	74,970
Energieversorgung Offenbach subgroup	75,894	75,894
MVV Enamic subgroup	44,535	27,417
Windwärts subgroup	3,910	6,073
MVV Energie CZ subgroup	6,257	6,280
MVV Umwelt subgroup	3,080	5,583
Other subgroups	552	552
	209,198	**196,769**

The rise in goodwill at the MVV Enamic subgroup relates to the acquisition and full consolidation of Data Center Group, while the reductions at the Windwärts and MVV Umwelt subgroups were due to the sale of Vents d'Oc Energies Renouvelables and Götzfried + Pitzer Entsorgungs GmbH.

Intangible assets

Euro 000s	Concessions, industrial property rights and similar rights and values	Goodwill	Advance payments	**Total**
Gross value at 1 October 2017	334,317	243,237	3,515	581,069
Currency adjustments	14	92	–	106
Additions	21,945	–	4,298	26,243
Disposals	– 10,267	–	– 34	– 10,301
Reclassifications	1,640	–	– 1,455	185
Gross value at 30 September 2018	**347,649**	**243,329**	**6,324**	**597,302**
Amortisation at 1 October 2017	– 223,174	– 12,831	–	– 236,005
Currency adjustments	– 15	– 23	–	– 38
Scheduled amortisation	– 14,882	–	–	– 14,882
Impairment losses	–	– 33,706	–	– 33,706
Disposals	3,252	–	–	3,252
Amortisation at 30 September 2018	**– 234,819**	**– 46,560**	**–**	**– 281,379**
Net value at 30 September 2018	**112,830**	**196,769**	**6,324**	**315,923**
Gross value at 1 October 2018	347,649	243,329	6,324	597,302
Change in scope of consolidation	1,546	12,452	–	13,998
Currency adjustments	36	– 31	–	5
Additions	3,558	–	4,438	7,996
Disposals	– 19,287	–	–	– 19,287
Reclassifications	2,383	–	– 2,440	– 57
Gross value at 30 September 2019	**335,885**	**255,750**	**8,322**	**599,957**
Amortisation at 1 October 2018	– 234,819	– 46,560	–	– 281,379
Change in scope of consolidation	2,839	–	–	2,839
Currency adjustments	3	8	–	11
Scheduled amortisation	– 14,152	–	–	– 14,152
Disposals	2,221	–	–	2,221
Reclassifications	– 3	–	–	– 3
Amortisation at 30 September 2019	**– 243,911**	**– 46,552**	**–**	**– 290,463**
Net value at 30 September 2019	**91,974**	**209,198**	**8,322**	**309,494**

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 2017	914,455	4,502,278	181,065	190,405	5,788,203
Change in scope of consolidation	–	500	154	–	654
Currency adjustments	483	236	– 1	– 46	672
Additions	10,528	47,829	7,714	182,691	248,762
Subsidy payments received	– 10	– 5,854	– 81	– 316	– 6,261
Disposals	– 1,423	– 24,019	– 10,310	– 3,217	– 38,969
Reclassifications	6,721	46,265	1,225	– 54,396	– 185
Gross value at 30 September 2018	**930,754**	**4,567,235**	**179,766**	**315,121**	**5,992,876**
Depreciation at 1 October 2017	– 424,355	– 2,710,815	– 133,664	–	– 3,268,834
Currency adjustments	– 479	– 944	– 10	–	– 1,433
Scheduled depreciation	– 24,455	– 131,105	– 10,238	–	– 165,798
Disposals	1,355	19,926	10,155	–	31,436
Reclassifications	245	– 168	2	– 79	–
Depreciation at 30 September 2018	**– 447,689**	**– 2,823,106**	**– 133,755**	**– 79**	**– 3,404,629**
Net value at 30 September 2018	**483,065**	**1,744,129**	**46,011**	**315,042**	**2,588,247**
Gross value at 1 October 2018	930,754	4,567,235	179,766	315,121	5,992,876
Adjustment due to IFRS 16	– 40,301	– 27,211	– 870	–	– 68,382
Gross value at 1 October 2018 (adjusted)	890,453	4,540,024	178,896	315,121	5,924,494
Change in scope of consolidation	1,679	– 2,497	314	100	– 404
Currency adjustments	– 124	– 23	54	– 40	– 133
Additions	3,724	40,285	6,993	210,832	261,834
Subsidy payments received	– 620	– 4,171	– 11	– 514	– 5,316
Disposals	– 2,100	– 21,800	– 3,671	– 898	– 28,469
Reclassifications	7,827	42,097	1,212	– 51,079	57
Gross value at 30 September 2019	**900,839**	**4,593,915**	**183,787**	**473,522**	**6,152,063**
Depreciation at 1 October 2018	– 447,689	– 2,823,106	– 133,755	– 79	– 3,404,629
Adjustment due to IFRS 16	6,861	5,776	868	–	13,505
Depreciation at 1 October 2018 (adjusted)	– 440,828	– 2,817,330	– 132,887	– 79	– 3,391,124
Change in scope of consolidation	217	1,429	2,299	–	3,945
Currency adjustments	154	329	– 29	–	454
Scheduled depreciation	– 21,141	– 123,129	– 9,730	–	– 154,000
Write-ups	–	652	96	–	748
Disposals	1,747	16,645	3,390	–	21,782
Reclassifications	60	42	– 96	– 3	3
Depreciation at 30 September 2019	**– 459,791**	**– 2,921,362**	**– 136,957**	**– 82**	**– 3,518,192**
Net value at 30 September 2019	**441,048**	**1,672,553**	**46,830**	**473,440**	**2,633,871**

Property, plant and equipment up to an equivalent value of Euro 43 million (previous year: Euro 46 million) has been provided as security for financial debt. This involves land and buildings, technical equipment and machinery. Property, plant and equipment of Euro 110 million is subject to restrictions on disposal (previous year: Euro 119 million).

Subsidy payments received involve government grants received in the 2019 financial year chiefly in connection with urban planning measures for the distribution grid 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.

Apart from the connection of a waste-fired CHP plant to the district heating grid in Mannheim, the largest additions to advance payments and construction in progress in the 2019 financial year involved the construction of a gas-powered CHP plant in Kiel and an energy from waste plant in the UK.

16. Leases as lessee

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

Right-of-use assets

Euro 000s	Land and buildings	IT hardware and software	Vehicles	Technical equipment and machinery	Plant and office equipment	Other leased items	**Total**
Opening balance at 1 Oct 2018	97,513	829	3,496	40,952	139	90	143,019
Depreciation and amortisation	– 9,355	– 400	– 2,096	– 3,392	– 56	– 42	– 15,341
Additions	20,839	518	2,771	2,831	–	412	27,371
Other changes	– 1,692	–	– 731	– 2,736	– 76	–	– 5,235
Closing balance at 30 Sep 2019	**107,305**	**947**	**3,440**	**37,655**	**7**	**460**	**149,814**

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 2019**
Interest expenses for lease liabilities	4,470
Outflow of cash for leases	15,562
Expenses for short-term leases	2,633
Expenses for low-value leases	570
Expenses for variable lease payments	367
Income from sub-lease arrangements	719

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

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

17. Investment properties

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

Investment properties

Euro 000s	FY 2019	FY 2018
Gross value at 1 October	2,451	2,404
Currency adjustments	155	47
Gross value at 30 September	**2,606**	**2,451**
Depreciation at 1 October	–	–
Depreciation at 30 September	**–**	**–**
Net value at 30 September	**2,606**	**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:

Together with its shareholders, Uniper Kraftwerke GmbH and Stadtwerke Kiel AG, which is a subsidiary of MVV Energie AG, the company Gemeinschaftskraftwerk Kiel GmbH operated a hard coal-fired power plant in Kiel. Stadtwerke Kiel AG owns a 50 % share of the capital. All significant decisions have to be reached jointly by the shareholders. The hard coal-fired power plant was switched off in the 2019 financial year and is in the process of being replaced by a modern gas-powered CHP plant owned exclusively by Stadtwerke Kiel AG. As a result of this, Gemeinschaftskraftwerk Kiel GmbH no longer constituted a material joint venture as of 30 September 2019.

Grosskraftwerk Mannheim AG operates what is one of Europe's most efficient hard coal-fired power plants in Mannheim. Overall, MVV owns a 28 % share of the capital in this company. Grosskraftwerk Mannheim AG is a power plant jointly owned by the following shareholders: RWE Generation SE, Essen, EnBW Energie Baden-Württemberg AG, Karlsruhe, and MVV RHE GmbH, Mannheim. Due to contractual amendments made to the Code of Procedure and Articles of Incorporation in 2019, MVV RHE GmbH no longer exercises significant influence on the company. Since then, Grosskraftwerk Mannheim AG has been included as a joint venture.

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

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

Statement of comprehensive income for material joint ventures

	Grosskraftwerk Mannheim AG, Mannheim		Stadtwerke Ingolstadt Beteiligungen GmbH, Ingolstadt	
Euro 000s	**Financial year**	Previous year	**Financial year**	Previous year
Sales excluding energy taxes	754,058	509,634	191,626	186,060
Scheduled depreciation and amortisation	– 98,036	– 97,071	– 13,953	– 13,851
Interest income	–	–	92	99
Interest expenses	– 52,705	– 64,709	– 1,009	– 1,112
Income tax expenses/income	– 7,212	116	– 7,639	– 7,475
Annual net income	39,691	– 62,574	19,593	17,854
Other income and expenses	– 3,603	51,330	– 337	– 5
Total comprehensive income for period	**36,088**	**– 11,244**	**19,256**	**17,849**
Dividends received from material joint ventures	–	–	8,883	9,025

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	**2,001,398**	**1,985,979**	**269,923**	**273,593**
Non-current assets	1,723,518	1,817,686	234,275	231,451
Current assets	277,880	168,293	35,648	42,142
of which cash and cash equivalents	1,298	1,879	877	1,325
Equity and debt	**2,001,398**	**1,985,979**	**269,923**	**273,593**
Equity	152,117	116,029	66,689	65,787
Non-current provisions	632,599	629,536	6,697	5,232
Non-current debt and other liability items	893,510	228,972	96,067	99,462
of which non-current financial debt	830,000	154,000	22,050	26,366
Current provisions	187,526	73,761	124	301
Current debt and other liability items	135,646	937,681	100,346	102,811
of which current financial debt	99,621	876,280	80,406	72,128

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	116,029	127,273	65,787	66,584
Profit/loss for period	39,691	– 62,574	19,593	17,854
Distribution	–	–	– 18,354	– 18,646
Other income and expenses	– 3,603	51,330	– 337	– 5
Net assets at 30 September	**152,117**	**116,029**	**66,689**	**65,787**
Group share of net assets	42,593	32,488	32,277	31,841
Other items	1,897	1,897	– 154	– 154
Goodwill	–	–	53,759	53,759
Carrying amount of interest in joint ventures	**44,490**	**34,385**	**85,882**	**85,446**

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	12,469	9,806
Total comprehensive income for period	12,469	9,806
Carrying amount of interest in non-material joint ventures	**45,416**	**44,897**

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

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

19. Associates

As a result of contractual amendments made to the Code of Procedure and Articles of Incorporation at Grosskraftwerk Mannheim AG, MVV RHE GmbH no longer exercises significant influence on that company. The inclusion status for Grosskraftwerk Mannheim AG has therefore been amended from associate to joint venture.

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

Summarised key financial figures for non-material associates

Euro 000s	**Financial year**	Previous year
Profit/loss for period	1,743	1,992
Total comprehensive income for period	1,743	1,992
Carrying amount of investment in non-material associates	**13,028**	**12,422**

The income from shareholdings collected by MVV from associates amounted to Euro 53 thousand in the 2019 financial year (previous year: Euro 981 thousand).

MVV's share of the contingent liabilities at companies measured at equity came to Euro 1,775 thousand (previous year: Euro 1,568 thousand).

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

Given their size and their influence on the Group, the following companies have been identified as material subsidiaries with non-controlling interests: Stadtwerke Kiel AG, Kiel, and Energieversorgung Offenbach AG, Offenbach am Main. Since the 1st quarter of the 2019 financial year, MVV has held 100 percent of the shares in Juwi AG, as a result of which non-controlling interests are no longer reported for this company.

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 2018 to 30 Sep 2019	1 Oct 2017 to 30 Sep 2018
Sales excluding energy taxes	341,420	312,318
Annual net income	5,361	17,573
Other income and expenses	– 3,784	451
Total comprehensive income for period	**1,577**	**18,024**
Total comprehensive income attributable to non-controlling interests	788	9,012
Dividends paid (to non-controlling shareholders)	5,468	5,468

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

Euro 000s	1 Oct 2018 to 30 Sep 2019	1 Oct 2017 to 30 Sep 2018
Sales excluding energy taxes	614,123	650,892
Annual net income	– 6,036	29,235
Other income and expenses	– 4,882	53
Total comprehensive income for period	**– 10,918**	**29,288**
Total comprehensive income attributable to non-controlling interests	– 5,350	14,351
Dividends paid (to non-controlling shareholders)	9,316	9,629

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

Euro 000s	30 Sep 2019	30 Sep 2018
Assets	**374,889**	**366,392**
Non-current assets	299,474	292,814
Current assets	75,415	73,578
of which cash and cash equivalents	13,871	12,597
Equity and debt	**374,889**	**366,392**
Equity	149,354	158,650
Non-current provisions	37,909	33,151
Non-current debt and other liability items	134,822	95,588
of which non-current financial debt	111,021	59,974
Current provisions	6,815	7,759
Current debt and other liability items	45,989	71,244
of which current financial debt	1,858	21,983

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

Euro 000s	30 Sep 2019	30 Sep 2018
Assets	**709,318**	**780,949**
Non-current assets	633,435	635,817
Current assets	75,883	145,132
of which cash and cash equivalents	13,648	48,201
Equity and debt	**709,318**	**780,949**
Equity	209,590	240,718
Non-current provisions	25,802	24,082
Non-current debt and other liability items	327,713	350,483
of which non-current financial debt	289,063	305,664
Current provisions	8,847	10,617
Current debt and other liability items	137,366	155,049
of which current financial debt	57,545	36,136

Total non-controlled interests in subsidiaries amounted to Euro 215,374 thousand in the period under report, of which Euro 102,799 thousand related to Stadtwerke Kiel AG, Kiel, Euro 55,898 thousand to Energieversorgung Offenbach AG, Offenbach am Main, and Euro 56,677 thousand to non-material subsidiaries.

21. Other financial assets

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

Other financial assets

Euro 000s	Other majority shareholdings	Other shareholdings	Loans in connection with finance leases	General loans and securities	**Total**
Gross value at 1 October 2017	1,385	7,272	43,515	5,770	57,942
Currency adjustments	6	2	–	–	8
Additions	242	67	229	1,073	1,611
Disposals	– 212	– 870	–	– 79	– 1,161
Reclassifications	–	7	– 379	156	– 216
Gross value at 30 September 2018	**1,421**	**6,478**	**43,365**	**6,920**	**58,184**
Amortisation at 1 October 2017	– 515	– 853	– 33	–	– 1,401
Currency adjustments	– 4	–	–	–	– 4
Disposals	30	853	–	–	883
Amortisation at 30 September 2018	**– 489**	**–**	**– 33**	**–**	**– 522**
Net value at 30 September 2018	932	6,478	43,332	6,920	57,662
Gross value at 1 October 2018	1,421	6,478	43,365	6,920	58,184
Adjustment due to IFRS 9	–	2,273	–	–	2,273
Gross value at 1 October 2018 (adjusted)	1,421	8,751	43,365	6,920	60,457
Changes in scope of consolidation	– 13	–	23,930	– 9	23,908
Currency adjustments	1	73	–	–	74
Additions	416	114	650	1,934	3,114
Disposals	– 320	– 1,863	– 122	– 424	– 2,729
Reclassifications	–	–	– 4,169	– 897	– 5,066
Gross value at 30 September 2019	**1,505**	**7,075**	**63,654**	**7,524**	**79,758**
Amortisation at 1 October 2018	– 489	–	– 33	–	– 522
Adjustment due to IFRS 9	–	–	– 34	– 23	– 57
Amortisation at 1 October 2018 (adjusted)	– 489	–	– 67	– 23	– 579
Currency adjustments	2	–	–	–	2
Impairment losses	–	–	–	– 250	– 250
Amortisation at 30 September 2019	**– 487**	**–**	**– 67**	**– 273**	**– 827**
Net value at 30 September 2019	**1,018**	**7,075**	**63,587**	**7,251**	**78,931**

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

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

The loans included in this line item are measured at amortised cost. Lease receivables are classified under leases, with finance leases recognised as receivables in the amount of the present value of minimum lease payments (net investment value). Loans and lease receivables have fixed interest rates, with an average interest rate of 4.4 % (previous year: 4.4 %). The average period for which interest rates remain fixed amounts to 4.4 years in the case of fixed-interest loans (previous year: 5.7 years) and 6.2 years in the case of finance leases (previous year: 6.6 years). Reclassifications mainly involve reclassifications of the aforementioned items to current financial assets in line with their respective maturities.

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

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

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

Other financial assets also include the non-current share of finance leases. In several contracting projects and, since the financial year under report, in housing concepts for data centres, MVV acts as lessor in the context of finance lease arrangements. The reconciliation of the minimum lease payments with net investments in leases is as follows:

Reconciliation of net investments in leases

Euro 000s	**30 Sep 2019**	30 Sep 2018
Minimum lease payments with maturities < 1 year	12,432	9,907
Minimum lease payments with maturities > 1 year and < 5 years	44,275	31,254
of which minimum lease payments with maturities > 1 year and < 2 years	12,791	9,725
of which minimum lease payments with maturities > 2 years and < 3 years	11,678	8,662
of which minimum lease payments with maturities > 3 years and < 4 years	10,259	6,973
of which minimum lease payments with maturities > 4 years and < 5 years	9,547	5,894
Minimum lease payments with maturities > 5 years	31,838	23,776
Total minimum lease payments	**88,545**	**64,937**
Less financing income not yet realised	– 15,663	– 14,294
Net investments in finance leases	**72,882**	**50,643**

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 2019**
Financing income from net investment in lease	3,540
Profit/loss on sale	64

22. Other receivables and assets

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

Financial and non-financial receivables and assets

	30 September 2019			30 September 2018		
Euro 000s	Non-current	Current	Total	Non-current	Current	Total
Financial receivables and assets						
Derivative financial instruments	54,416	266,113	320,529	292,690	664,541	957,231
Receivables from security deposits for energy trading transactions	–	14,088	14,088	–	194	194
Receivables in connection with finance leases	–	9,293	9,293	–	6,916	6,916
Suppliers with debit balances	–	3,957	3,957	–	6,484	6,484
Loans	–	6,378	6,378	–	3,244	3,244
Receivables from employees	–	352	352	–	352	352
Escrow accounts	–	35	35	–	–	–
Miscellaneous other financial assets	4,411	7,958	12,369	2,931	33,645	36,576
Non-financial receivables and assets						
Project development contract assets	–	64,119	64,119	–	–	–
Other contract assets	3,308	408	3,716	3,466	147	3,613
Other tax receivables	–	52,393	52,393	–	33,306	33,306
Deferred expenses and accrued income	3,024	13,217	16,241	5,172	9,202	14,374
Emission rights	–	113	113	–	5,475	5,475
Miscellaneous other non-financial assets	5,768	3,114	8,882	4,761	2,472	7,233
	70,927	**441,538**	**512,465**	**309,020**	**765,978**	**1,074,998**

Derivative financial instruments (financial receivables and assets)

	30 September 2019			30 September 2018		
Euro 000s	Non-current	Current	Total	Non-current	Current	Total
Derivative financial instruments	54,416	266,113	320,529	292,690	664,541	957,231
of which without IFRS 9 hedges	34,066	231,876	265,942	234,909	643,908	878,817
of which cash flow hedges	20,350	34,237	54,587	57,781	20,633	78,414

Derivative financial instruments decreased in value compared with the previous year. This was due to lower market prices and the resultant reduction in fair values of energy trading transactions recognised under IFRS 9. These items relate to interest, currency and commodity derivatives for electricity, gas, coal, CO_2 and other certificates.

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

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

Non-financial miscellaneous other assets include expenses of Euro 6,632 thousand for the past extension and renewal of infrastructure assets at the two British power plants. These assets are not within MVV's control but are essential for the supply of electricity and steam. The outlays thereby incurred are being deferred over the corresponding contractual terms. Furthermore, this item also includes input taxes that are not yet deductible.

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

Other assets in connection with IFRS 15 mainly comprise capitalised customer acquisition expenses. These developed as follows:

Customer acquisition costs pursuant to IFRS 15 [1]

Euro 000s	**FY 2019**
Balance at 1 October 2018	–
Balance at 30 September 2019	439

1 New line item due to introduction of IFRS 15; previous year's figures unavailable as, due to immateriality, no restatement was performed

Other receivables and assets

	30 September 2019			30 September 2018		
Euro 000s	**Non-current**	**Current**	**Total**	Non-current	Current	Total
Other receivables and assets						
from third parties	70,311	434,114	504,425	308,671	761,316	1,069,987
from other majority shareholdings	–	1,211	1,211	–	976	976
from companies recognised at equity	616	6,196	6,812	349	3,640	3,989
from other shareholdings	–	17	17	–	46	46
	70,927	**441,538**	**512,465**	**309,020**	**765,978**	**1,074,998**

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

To reduce the counterparty risk involved in highly fluctuating fair values of energy trading derivatives, security deposits are exchanged with external trading partners. These involve margins. To reduce these counterparty risks, payments are made both within the European Energy Exchange (EEX) and in some cases within the framework of bilateral agreements. These are reflected in the receivables from security deposits for energy trading transactions line item. Receivables from security deposits increased year-on-year to Euro 14,088 thousand (previous year: Euro 194 thousand).

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

Contract assets [1]

Euro 000s	FY 2019
Balance at 1 October 2018	21,048
Balance at 30 September 2019	67,835

1 New line item due to introduction of IFRS 15

23. Inventories

Inventories

Euro 000s	30 Sep 2019	30 Sep 2018
Raw materials and supplies	48,229	40,771
Finished and unfinished products and services (project rights)	44,517	44,977
Finished and unfinished products and services (other) and merchandise	47,401	46,089
Advance payments	33,663	19,421
Commodity trading assets	5,264	9,704
	179,074	**160,962**

Write-downs of Euro 698 thousand were recognised for inventories (previous year: Euro 745 thousand). Write-ups of Euro 2,168 thousand were included due to higher net disposal prices (previous year: Euro 3,725 thousand).

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

24. Trade receivables

Trade receivables

Euro 000s	30 Sep 2019	30 Sep 2018
Trade receivables	365,038	381,729
of which due from other majority shareholdings	110	293
of which due from companies recognised at equity	17,550	16,497
of which due from other shareholdings	1,470	697

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

Trade receivables mainly comprise receivables recognised under IFRS 15.

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

25. Tax receivables

The tax receivables of Euro 15,156 thousand (previous year: Euro 27,586 thousand) mainly relate to corporate income tax and trade tax refund claims. These have been recognised at nominal value.

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

26. Cash and cash equivalents

Cash and cash equivalents predominantly comprise credit balances at banks. The acquisition of fully consolidated companies and other business units resulted in the addition of cash and cash equivalents of Euro 1,795 thousand (previous year: Euro 824 thousand). The disposal of fully consolidated companies and other business units led to the retirement of cash and cash equivalents of Euro 1,774 thousand (previous year: Euro 1,269 thousand).

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

27. Equity

The structure and development of equity are presented in the statement of changes in equity. The acquisition of the remaining non-controlling shares in Juwi AG reduced accumulated net income by an amount of Euro 17,103 thousand, as well as accumulated other comprehensive income by Euro 750 thousand. As a result, non-controlling interests fell by Euro 34,918 thousand. The consideration for this transaction was paid partly in cash and partly by offsetting other claims.

Share capital: The share capital of MVV Energie AG amounts to Euro 168,721 thousand and is divided into 65,906,796 individual registered shares of Euro 2.56 each. All registered shares are paid up in full. The City of Mannheim directly and indirectly owned 50.1 % of the shares at 30 September 2019; EnBW Energie Baden-Württemberg AG held 28.8 % and Rhein-Energie AG 16.3 % of the shares. The remaining 4.8 % 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 2015, the Annual General Meeting authorised the Executive Board until 12 March 2020 to acquire treasury stock up to 10 % of existing share capital upon adoption of the resolution. The Executive Board of MVV Energie AG has not yet made any use of this authorisation.

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

Equity generated: In addition to the prorated revenue reserves and accumulated annual net income of MVV Energie AG and of other consolidated companies since the date of initial consolidation, equity generated also includes cumulative changes recognised directly in equity as a result of the fair value measurement of financial instruments, mainly relating to hedge relationships recognised under IFRS 9, as well as currency translation differences arising upon the translation of foreign financial statements and actuarial gains and losses for defined benefit pension plans. Expenses of Euro 38,378 thousand were recognised directly in equity in the financial year under report in connection with the fair value measurement of financial instruments (previous year: income of Euro 19,810 thousand).

28. Provisions

Provisions

Euro 000s	Balance at 1 Oct 2018[1]	Change in scope of consolida-tion	Currency adjust-ments	Utilised	Reversed	Added	Reclassi-fied	Interest component	**Balance at 30 Sep 2019**
Non-current provisions									
Pensions and similar obligations	**77,551**	**1,124**	**–**	**– 2,675**	**–**	**26,209**	**–**	**1,598**	**103,807**
Tax provisions	**–**	**–**	**–**	**–**	**–**	**–**	**7**	**–**	**7**
Other provisions									
Personnel-related obligations	41,072	–	14	– 273	518	3,348	– 7,519	8,459	44,583
Refurbishment, dismantling and warranty obligations	35,912	350	3	– 144	–	3,027	– 3,045	854	36,957
Provisions for litigation and contract risks	1,480	–	–	– 81	55	84	– 249	4	1,183
Miscellaneous contingencies	25,356	–	–	– 35	3,004	3,205	– 278	75	25,319
Total other provisions	**103,820**	**350**	**17**	**– 533**	**3,577**	**9,664**	**– 11,091**	**9,392**	**108,042**
Total non-current provisions	**181,371**	**1,474**	**17**	**– 3,208**	**3,577**	**35,873**	**– 11,084**	**10,990**	**211,856**
Current provisions									
Tax provisions	**54,881**	**– 61**	**20**	**– 29,105**	**2,787**	**10,875**	**– 7**	**–**	**33,816**
Other provisions									
Personnel-related obligations	41,761	83	108	– 35,323	5,515	34,344	7,519	–	42,977
Services not yet invoiced	54,486	–	124	– 47,346	258	47,967	–	–	54,973
Refurbishment, dismantling and warranty provisions	8,058	–	120	– 3,606	3,076	15,702	3,045	–	20,243
Provisions for litigation and contract risks	5,817	9	16	– 2,879	1,248	1,179	249	–	3,143
Miscellaneous contingencies	28,895	153	– 77	– 9,456	1,907	13,109	278	–	30,995
Total other provisions	**139,017**	**245**	**291**	**– 98,610**	**12,004**	**112,301**	**11,091**	**–**	**152,331**
Total current provisions	**193,898**	**184**	**311**	**– 127,715**	**14,791**	**123,176**	**11,084**	**–**	**186,147**
Total provisions	**375,269**	**1,658**	**328**	**– 130,923**	**18,368**	**159,049**	**–**	**10,990**	**398,003**

1 Opening balance adjusted as of 1 October 2018 due to first-time application of IFRS 15

Provisions broken down by maturity

	30 September 2019			30 September 2018		
Euro 000s	Non-current	Current	Total	Non-current	Current	Total
Provisions for pensions and similar obligations	103,807	–	103,807	77,551	–	77,551
Tax provisions	7	33,816	33,823	–	54,881	54,881
Personnel-related obligations	44,583	42,977	87,560	41,073	41,761	82,834
Services not yet invoiced	–	54,973	54,973	–	54,486	54,486
Refurbishment, dismantling and warranty obligations	36,957	20,243	57,200	35,912	8,058	43,970
Provisions for litigation and contract risks	1,183	3,143	4,326	1,480	5,817	7,297
Miscellaneous contingencies	25,319	30,995	56,314	25,354	28,864	54,218
	211,856	**186,147**	**398,003**	**181,370**	**193,867**	**375,237**

Consistent with the “Decision on presentation of uncertain tax liabilities (or assets)” issued by the IFRS IC on 25 September 2019, uncertain tax liabilities recognised under IFRIC 23 for income taxes have been recognised as tax provisions and are not included in any other line item. Tax liabilities for which a tax assessment notice is available are presented in the balance sheet under tax liabilities.

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

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

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

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

The provisions for litigation and contract risks category includes provisions for the litigation risks relating to several individual risks for which the level of 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 include the following items: provisions for risks relating to contractual obligations for completed projects and for the renewal of infrastructure assets, provisions for risks associated with a price adjustment clause, provisions for risks resulting from the review of § 6a of the German Land Transfer Tax Act (GrEstG) by the European Court of Justice and for the risks resulting from a tax audit of interest expenses pursuant to § 233a of the German Tax Code (AO).

The provisions recognised are utilised in line with the terms to which they are allocated. Provisions were discounted with a discount rate of 0 % in the 2019 financial year.

29. Provisions for pensions and similar obligations

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

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

Given the redistribution of the benefits provided by ZVKs among member companies and the lack of adequate information about the age structures, personnel turnover rates and salaries of the employees thereby covered, no 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 compensation subject to the additional pension premium and are borne by employees and employers. The percentage rate of contribution is determined by the ZVKs. MVV expects contributions in the 2020 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 30,303 thousand were made into the state pension systems in the 2019 financial year (previous year: Euro 31,165 thousand). Moreover, an amount of Euro 15,259 thousand was paid into defined contribution pension schemes (previous year: Euro 15,169 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 relate in particular to the discount factor, biometric probabilities and trend assumptions. Any deviations in the development in these estimates could result in differences between the amounts recognised and the obligations actually arising over time. Actuarial gains and losses are fully recognised in the period in which they arise. They are recognised outside the income statement in the statement of income and expenses recognised in group equity. This means that any amendments in estimates have direct implications for MVV.

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

The main parameters used to calculate the defined benefit plans as of 30 September 2019 are:

Parameter

	30 Sep 2019	30 Sep 2018
Discount rate	0.3 %	2.1%
Future pay rises	2.1-3.0 %	2.1-3.0 %
Future pension increases	1.6-2.0 %	1.6-2.0 %

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

Pension provision expenses

Euro 000s	**FY 2019**	FY 2018
Service cost	2,075	2,054
Interest expenses	1,598	1,550
	3,673	**3,604**

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 2019			30 September 2018		
Euro 000s	**Present value of defined benefit obligations**	**Fair value of plan assets**	**Total**	Present value of defined benefit obligations	Fair value of plan assets	Total
Balance at 1 October	78,199	648	77,551	78,401	583	77,818
Current service cost	2,075	–	2,075	2,054	–	2,054
Interest expenses (interest income)	1,598	14	1,584	1,550	–	1,550
Remeasurement						
(i) Income from plan assets (excluding amounts included in interest income from plan assets)	–	4	– 4	–	12	– 12
(ii) Actuarial gains/losses	24,200	48	24,152	– 1,133	– 13	– 1,120
Payments made to beneficiaries	– 2,675	–	– 2,675	– 2,673	–	– 2,673
Contributions to plan assets	–	–	–	–	66	– 66
Change in scope of consolidation	1,124	–	1,124	–	–	–
Balance at 30 September	**104,521**	**714**	**103,807**	**78,199**	**648**	**77,551**

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

Calculation of provision

Euro 000s	FY 2019	FY 2018
Present value of defined benefit obligation	104,521	78,199
Fair value of plan assets	714	648
Provisions recognised at 30 September	**103,807**	**77,551**

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

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

Accumulated actuarial gains and losses recognised in equity

Euro 000s	FY 2019	FY 2018
Accumulated actuarial gains (+) and losses (-) recognised in equity at 1 October	– 12,942	– 13,616
Actuarial gains (+) and losses (-) recognised in equity	– 13,751	674
Accumulated actuarial gains (+) and losses (-) recognised in equity at 30 September	**– 26,693**	**– 12,942**

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

Pension payments of Euro 3,117 thousand are forecast for existing pension obligations for the 2020 financial year.

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

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

Expected pension payments

Euro 000s	
2020	3,117
2021	3,243
2022	4,443
2023	3,301
2024	3,313
>2024	84,471
	101,888

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

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

Sensitivity analysis

		Impact on obligation	
	Change in assumption by	Increase in assumption	Reduction in assumption
Discount rate	0.50 %	Reduction by 8 %	Increase by 9 %
Future pay rises	0.50 %	No change	Reduction by 1 %
Future pension increases	0.50 %	Increase by 3 %	Reduction by 3 %
Mortality	1 year	Increase by 5 %	-

30. Financial debt

Financial debt

	30 September 2019			30 September 2018		
Euro 000s	**Non-current**	**Current**	**Total**	Non-current	Current	Total
Liabilities						
to banks	1,380,470	107,432	1,487,902	1,096,574	212,460	1,309,034
in connection with leases[1]	120,840	18,494	139,334	42,320	2,917	45,237
to other majority shareholdings	–	557	557	–	766	766
to companies recognised at equity	–	36,581	36,581	–	1,581	1,581
to other shareholdings	–	830	830	–	460	460
Other financial debt	32,227	4,738	36,965	24,244	4,674	28,918
	1,533,537	**168,632**	**1,702,169**	**1,163,138**	**222,858**	**1,385,996**

1 In previous year: IAS 17; in financial year under report: IFRS 16

Maturity in years

	30 September 2019			30 September 2018		
Euro 000s	**< 1 year**	**1 - 5 years**	**> 5 years**	< 1 year	1 - 5 years	> 5 years
Liabilities						
to banks	107,432	680,870	699,599	212,460	486,957	609,617
in connection with leases	18,494	120,840	–	2,917	11,594	30,726
to other majority shareholdings, companies recognised at equity and other shareholdings	37,968	–	–	2,807	–	–
Other financial debt	4,738	21,003	11,225	4,674	13,020	11,224
	168,632	**822,713**	**710,824**	**222,858**	**511,571**	**651,567**

The fixed-rate liabilities to banks of Euro 1,036 million (previous year: Euro 937 million) have an average interest rate of 2.4 % (previous year: 2.6 %), while the floating-rate liabilities to banks of Euro 452 million (previous year: Euro 372 million) have an average interest rate of 2.0 % (previous year: 2.2 %). This interest rate is influenced by foreign currency liabilities with higher interest rates.

The average remaining period for which the rate remains fixed in the case of fixed-rate liabilities comes to nine years (previous year: seven years). The floating-rate liabilities to banks are hedged.

At 30 September 2019, MVV had undrawn committed credit lines of Euro 699 million (previous year: Euro 650 million).

Lease liabilities have been recognised at the present value of mandatory lease payments over the term of the lease. These refer to the right-of-use assets presented under "Leases (as lessee)".

31. Other liabilities

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

Other financial and non-financial liabilities

	30 September 2019			30 September 2018		
Euro 000s	**Non-current**	**Current**	**Total**	Non-current	Current	Total
Other financial liabilities						
Derivative financial instruments	72,908	259,655	332,563	235,604	613,421	849,025
Liabilities to employees	–	26,251	26,251	–	25,376	25,376
Customer credit balances	–	11,514	11,514	–	6,132	6,132
Interest liabilities	–	6,087	6,087	–	6,618	6,618
Liabilities for security deposits for energy trading transactions	–	687	687	–	77,258	77,258
Concession duties	–	2,607	2,607	–	2,160	2,160
Social security liabilities	–	693	693	–	736	736
Miscellaneous other financial liabilities	27,633	37,924	65,557	6,147	19,043	25,190
Other non-financial liabilities						
Contract liabilities for advance payments received	–	26,720	26,720	7,178	23,959	31,137
Contract liabilities for building cost grants	96,239	6,913	103,152	130,232	2,822	133,054
Other contract liabilities	17,920	4,355	22,275	20,651	11,724	32,375
Liabilities for other taxes	–	67,187	67,187	–	44,846	44,846
Miscellaneous other non-financial liabilities	5,794	10,417	16,211	4,071	1,052	5,123
	220,494	**461,010**	**681,504**	**403,883**	**835,147**	**1,239,030**

Other liabilities

	30 September 2019			30 September 2018		
Euro 000s	**Non-current**	**Current**	**Total**	Non-current	Current	Total
Liabilities	220,494	434,290	654,784	403,883	811,188	1,215,071
of which to companies recognised at equity	862	4,264	5,126	6,129	11,749	17,878
Advance payments received for orders	–	26,720	26,720	–	23,959	23,959
	220,494	**461,010**	**681,504**	**403,883**	**835,147**	**1,239,030**

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

Derivative financial instruments (other financial liabilities)

	30 September 2019			30 September 2018		
Euro 000s	**Non-current**	**Current**	**Total**	Non-current	Current	Total
Derivative financial instruments	72,908	259,655	332,563	235,604	613,421	849,025
of which without IFRS 9 hedge	22,488	217,505	239,993	194,700	602,313	797,013
of which cash flow hedges	50,420	42,150	92,570	40,904	11,108	52,012

To reduce the counterparty risk involved in highly fluctuating fair values of energy trading derivatives, security deposits (margins) are exchanged with the EEX. Moreover, the Group has entered into bilateral risk reduction agreements in some cases. Liabilities for security deposits for energy trading transactions fell year-on-year to Euro 687 thousand (previous year: Euro 77 million).

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

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

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

Contract liabilities [1]

Euro 000s	**FY 2019**
Balance at 1 October 2018	156,061
Balance at 30 September 2019	**152,147**

[1] New line item due to introduction of IFRS 15

MVV expects that, of the transaction price allocated to unsatisfied performance obligations as of 30 September 2019, an amount of Euro 37,988 thousand will be recognised as revenues in the next reporting period. The remaining amount of Euro 114,159 thousand will be recognised in subsequent financial years.

32. Trade payables

Trade payables

Euro 000s	**30 Sep 2019**	30 Sep 2018
Trade payables	361,609	340,256
to other majority shareholdings	62	101
to companies recognised at equity	14,135	16,483
to other shareholdings	3	24

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

33. Tax liabilities and deferred taxes

The tax liabilities of Euro 184 thousand (previous year: Euro 439 thousand) consist of income tax liabilities.

The deferred taxes reported for the 2019 financial year relate to the following items:

Deferred taxes

	30 September 2019		30 September 2018	
Euro 000s	**Deferred tax assets**	**Deferred tax liabilities**	Deferred tax assets	Deferred tax liabilities
Intangible assets	4,152	– 14,283	2,287	– 14,235
Property, plant and equipment, including investment properties	19,182	– 170,008	11,275	– 169,013
Right-of-use assets	–	– 40,096	–	–
Inventories	14,543	– 3,722	10,822	– 5,237
Special item	–	– 5,997	–	– 1,604
Other assets and positive fair values of derivatives	8,262	– 177,628	29,807	– 487,427
Provisions for pensions	20,941	–	12,352	–
Non-current other provisions	25,969	–	21,603	–
Current other provisions	7,333	– 14,182	4,988	– 18,751
Liabilities and negative fair values of derivatives	168,268	– 20,071	466,179	– 33,111
Lease liabilities	37,395	–	–	–
Losses carried forward	25,849	–	26,676	–
Deferred taxes (gross)	**331,894**	**– 445,987**	**585,989**	**– 729,378**
Netting	– 302,526	302,526	– 555,569	555,569
Deferred taxes (net)	**29,368**	**– 143,461**	**30,420**	**– 173,809**

Of the (net) deferred taxes presented above, Euro 14,952 thousand (previous year: Euro 11,568 thousand) relate to non-current deferred tax assets and Euro 93,427 thousand (previous year: Euro 85,387 thousand) to non-current deferred tax liabilities.

No deferred tax assets have been recognised for corporate income tax loss carryovers of Euro 95,962 thousand (previous year: Euro 100,046 thousand), trade tax loss carryovers of Euro 88,826 thousand (previous year: Euro 108,351 thousand) or foreign loss carryovers of Euro 162,616 thousand (previous year: Euro 82,128 thousand).

For temporary differences of Euro 12,876 thousand at shareholdings (previous year: Euro 11,008 thousand), no deferred tax liabilities have been stated for an amount of Euro 3,901 thousand (previous year: Euro 3,336 thousand), as such differences are unlikely to be reversed by dividend distributions or disposal of the companies in the foreseeable future.

Deferred tax assets of Euro 6,460 thousand (previous year: Euro 11,390 thousand) have been recognised at the balance sheet date for companies that generated a loss in the financial year under report or the previous year in cases where realisation of the assets is exclusively dependent on the generation of future profits. Based on available budget figures, which mainly assume that renewable energies projects will be marketed promptly, we expect these assets to be realised.

Deferred taxes of Euro 21,873 thousand were recognised directly in other comprehensive income as part of group equity in the 2019 financial year (previous year: Euro 2,010 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 2019		30 September 2018	
Euro 000s	Income tax	Gross	Income tax	Gross
Actuarial gains and losses	6,561	– 24,152	– 226	1,120
Share of total comprehensive income attributable to companies recognised at equity	–	– 1,353	–	14,370
Items that will not be reclassified to profit or loss	**6,561**	**– 25,505**	**– 226**	**15,490**
Cash flow hedges/hedging costs [1]	16,800	– 63,778	– 9,489	33,489
Currency translation differences	–	3,888	–	1,376
Share of total comprehensive income attributable to companies recognised at equity	–	364	–	166
Items that will be reclassified to profit or loss	**16,800**	**– 59,526**	**– 9,489**	**35,031**

1 Previous year's figures adjusted due to first-time application of IFRS 9

34. Contingent claims, liabilities and financial obligations

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

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

The company has contingent liabilities of Euro 8.4 million for warranty agreements (previous year: Euro 7.0 million). It also has obligations of this nature in the form of guarantees amounting to Euro 13.1 million (previous year: Euro 1.1 million). Guarantees increased in connection with the initial consolidation of the DCG Group. As in the previous year, no collateral has been provided for third-party liabilities.

MVV has purchase commitments of Euro 68.4 million in connection with investment orders placed and financial obligations (previous year: Euro 177.4 million). The reduction in this item was due to the investments made in the previous year in a new power plant in Scotland.

The Group has a contingent claim from the State of Baden-Württemberg and the City of Mannheim in connection with a land decontamination measure. This claim has a present value of Euro 3.5 million.

35. Financial instruments

Fair values and carrying amounts of financial instruments

The carrying amounts and fair values of those financial instruments recognised at MVV and their allocation to IFRS 9 measurement categories (previous year: IAS 39) have been presented in the following tables. The classes presented are based on the balance sheet.

IFRS 9 measurement categories for carrying amounts at 30 September 2019

Euro 000s	IFRS 9 measurement category	Carrying amounts	of which not within scope of IFRS 7	Fair values
Assets				
Financial assets				
of which other shareholdings	Fair value through profit or loss	6,861	–	6,861
	Not applicable	1,232	1,232	–
of which loans excluding finance leases	Amortised cost	13,629	–	13,629
of which loans in connection with finance leases	Not applicable	72,880	–	72,880
of which securities	Fair value through profit or loss	–	–	–
Trade receivables < 1 year	Amortised cost	365,038	–	365,038
Other assets				
of which derivatives outside hedge accounting	Fair value through profit or loss	265,942	–	265,942
of which derivatives within hedge accounting	Not applicable	54,587	–	54,587
of which other financial assets	Amortised cost	30,761	–	30,761
	Fair value through profit or loss	40		40
of which contract assets	Not applicable	67,825		67,835
Cash and cash equivalents	Amortised cost	357,564	–	357,564
		1,236,369	**1,232**	**1,235,137**
Debt				
Financial debt				
of which financial debt in connection with finance leases	Not applicable	139,334	–	139,334
of which other financial debt	Amortised cost	1,562,835	–	1,668,661
Trade payables <1 year	Amortised cost	361,609	–	361,609
Other liabilities				
of which derivatives outside hedge accounting	Fair value through profit or loss	239,993	–	239,993
of which derivatives within hedge accounting	Not applicable	92,570	–	92,570
of which other financial liabilities	Amortised cost	91,498	–	91,498
	Fair value through profit or loss	21,898	–	21,898
		2,509,737	**–**	**2,593,665**

IAS 39 measurement categories for carrying amounts at 30 September 2018

Euro 000s	IAS 39 measurement category	Carrying amounts	of which not within scope of IFRS 7	Fair values
Assets				
Financial assets				
of which unconsolidated shareholdings	Available for sale	7,410	–	7,410
of which loans excluding finance leases	Loans and receivables	10,164	–	10,164
of which loans in connection with finance leases	Not applicable	50,248	–	50,248
of which securities	Held for trading	–	–	–
Trade receivables < 1 year	Loans and receivables	381,729	–	381,729
Other assets				
of which derivatives outside hedge accounting	Held for trading	878,817	–	878,817
of which derivatives within hedge accounting	Not applicable	78,414	–	78,414
of which other operating assets	Loans and receivables	96,761	53,507	96,761
Cash and cash equivalents	Loans and receivables	310,589	–	310,589
		1,814,132	**53,507**	**1,814,132**
Debt				
Financial debt				
of which financial debt in connection with finance leases	Not applicable	45,237	–	45,237
of which other financial debt	Amortised cost	1,340,759	–	1,399,468
Trade payables <1 year	Amortised cost	340,256	–	340,256
Other liabilities				
of which derivatives outside hedge accounting	Held for trading	797,013	–	797,013
of which derivatives within hedge accounting	Not applicable	52,012	–	52,012
of which other operating liabilities	Amortised cost	352,507	209,773	352,507
		2,927,784	**209,773**	**2,986,493**

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

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

The fair value of other shareholdings is determined using a capital value procedure. Should MVV not have sufficient new information to measure the fair value, then cost is referred to as an approximate estimate of the fair value.

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

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

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

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

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

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

Fair value hierarchy at 30 September 2019

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

1 Previous year's figures adjusted due to first-time application of IFRS 9

Fair value hierarchy at 30 September 2018

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

The derivatives of Euro 5,732 thousand in Level 3 hedge accounting include interest swaps with floor (previous year: Euro 1,712 thousand). The fair value of these derivatives amounts to Euro 5,732 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 91 thousand or reduce it by Euro 87 thousand.

Other Level 3 liabilities include variable purchase price components resulting from acquisitions. 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 October 2018 [1]	Gains/losses in income statement	Gains/losses in OCI	Additions/ disposals	Balance at 30 September 2019
Financial assets					
Other shareholdings	8,536	73	–	– 1,748	6,861
Derivatives outside hedge accounting	829	– 180	–	–	649
Financial liabilities					
Derivatives outside hedge accounting	250	75	–	–	325
Derivatives within hedge accounting	1,712	–	4,020	–	5,732
Other financial liabilities	–	3,428	–	18,470	21,898

1 Previous year's figures adjusted due to first-time application of IFRS 9

Development in financial instruments recognised in Level 3

Euro 000s	Balance at 1 Oct 2017	Gains/losses in income statement	Gains/losses in OCI	Additions/ disposals	Balance at 30 Sep 2018
Financial assets					
Derivatives outside hedge accounting	28	801	–	–	829
Financial liabilities					
Derivatives outside hedge accounting	516	– 266	–	–	250
Derivatives within hedge accounting	1,014	–	698	–	1,712

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 2019
Other operating expenses	– 255	–
Income from shareholdings	73	–
Financial result	3,428	–
Other comprehensive income	– 4,020	–
	– 4,348	**–**

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

Euro 000s	Total	of which still held at 30 Sep 2018
Other operating income	801	–
Other operating expenses	–	–
Other comprehensive income	– 698	–
	103	**–**

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

Netting of financial assets at 30 September 2019

	Gross amount of financial assets reported	Gross amount of financial liabilities reported that are netted in balance sheet	Net amount of financial assets reported in balance sheet	Related amounts not netted in balance sheet		Net amount
Euro 000s				Financial instruments	Cash collateral received	
Loans excluding finance leases	13,629	–	13,629	–	–	13,629
Securities	–	–		–	–	
Trade receivables < 1 year	515,831	– 150,793	365,038	–	–	365,038
Derivative financial instruments	320,529	–	320,529	– 237,974	– 25,489	57,066
Other operating assets	98,643	– 7	98,636	–	–	98,636
Cash and cash equivalents	357,564	–	357,564	– 14,202	–	343,362
	1,306,196	**– 150,800**	**1,155,396**	**– 252,176**	**– 25,489**	**877,731**

Netting of financial liabilities at 30 September 2019

	Gross amount of financial liabilities reported	Gross amount of financial assets reported that are netted in balance sheet	Net amount of financial liabilities reported in balance sheet	Related amounts not netted in balance sheet		Net amount
Euro 000s				Financial instruments	Cash collateral received	
Financial debt	1,562,835	–	1,562,835	– 4,737	– 805	1,568,377
Trade payables < 1 year	493,369	– 131,760	361,609	–	–	361,609
Derivative financial instruments	332,563	–	332,563	– 237,974	– 38,890	609,427
Other operating liabilities	110,538	– 19,040	91,498	–	–	91,498
	2,499,305	**– 150,800**	**2,348,505**	**– 242,711**	**– 39,695**	**2,630,911**

Netting of financial assets at 30 September 2018

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

Netting of financial liabilities at 30 September 2018

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

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 2019
Financial assets and liabilities measured at fair value through profit or loss	39,967
of which mandatorily measured at fair value	39,967
Financial assets measured at amortised cost	6,582

Net results (IFRS 7)

Euro 000s	FY 2018
Financial assets and financial liabilities held for trading [1]	33,468
Financial assets available for sale	868
Loans and receivables	– 5,385

1 Previous year's figures adjusted due to first-time application of IFRS 9 and NIFRIC

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

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

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

Total interest income and expenses

Euro 000s	FY 2019	FY 2018
Total interest income	9,472	8,392
Total interest expenses	40,056	41,735

The financial result also includes interest components for provisions not covered by IFRS 7 disclosure requirements, as a result of which the figures published here differ from the financial result. The interest income reported here mainly results from credit balances at banks, overnight and fixed-term deposits and loans. The interest expenses mostly relate to loan obligations.

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

Risk management

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

Derivative financial instruments are used to cover against market price 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.

Receivables default risks: The risk of economic loss arising as a result of a business partner failing to meet its contractual payment obligations is referred to as receivables default risk. This encompasses both the risk of direct default and the risk of reduced creditworthiness. In its trading activities, MVV maintains its business relationships predominantly with banks and other trading partners of good credit standing. Receivables default risks towards contractual partners are inspected upon conclusion of the contract and monitored continuously. This risk is limited by setting trading limits for transactions with business partners and, where appropriate, by demanding cash collateral. Where possible, default risk is already reduced in advance by means of suitable framework agreements with trading partners.

MVV is exposed to receivables default risks in its sales business, as customers may potentially fail to meet their payment obligations. This risk is limited by regularly inspecting the creditworthiness of major items in our customer portfolio. For trading transactions concluded with stock exchanges, security payments are deposited in order to reduce any additional receivables default risks.

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.

In the carrying amounts of financial assets, default risks have already been accounted for by way of write-downs.

IFRS 9 requires any expected credit loss to be accounted for by way of an impairment upon initial recognition of the respective asset already. Unlike in IAS 39, impairments require recognition not for losses already incurred, but for defaults expected in future. These "expected losses" are determined using either the general or the simplified approach.

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

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

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

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

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

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

Loss allowance (simplified approach)

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

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 2019

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

Impairments of Euro 70 thousand relate to assets whose loss allowances were determined on the basis of an internal or external rating. No material changes arose in these impairments in the year under report.

Due to retirements of financial instruments, the loss allowances recognised for trade receivables changed by Euro 19,398 thousand in the 2019 financial year. The retirements relate to three project companies previously included at equity in the consolidated financial statements.

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) FY 2019

Euro 000s	12-month expected credit loss *Level 1*	Lifetime expected credit loss *Level 2*	Lifetime expected credit loss *Level 3*	Total
Balance at 1 Oct 2018	4,305	–	3,342	7,647
Additions	501	–	42	543
Utilisations	2,101	–	–	2.101
Reclassifications	24	–	– 24	6
Other	–	–	– 21	– 27
Balance at 30 Sep 2019	2,729	–	3,381	6,122

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

Default risk (general approach) at 30 September 2019

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

The receivables default risks recognised pursuant to IAS 39 for the previous year and their maturities broken down by category are structured as follows:

Receivables default risks and maturities at 30 September 2018

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

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

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

Covenants customary to the industry have been agreed with some of the financing banks. These entitle the banks to terminate the facilities in the event of any material deterioration in the company's asset, financial and earnings position. All covenants had been complied with as of the balance sheet date on 30 September 2019.

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

Items of security have been provided to banks to limit their risks in connection with loans granted to MVV. These are subdivided into non-current assets, receivables and cash and cash equivalents with a total amount of Euro 4,986 thousand (previous year: Euro 11,576 thousand) and interests in subsidiaries amounting to Euro 3,327 thousand (previous year: Euro 3,337 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 2019			30 September 2018		
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	128,269	732,429	765,083	244,899	564,047	678,077
Lease liabilities	–	55,130	96,941	5,571	21,295	40,958
Trade payables	361,609	838	2,670	340,256	816	2,796
Other financial debt	42,938	22,719	17,006	7,455	13,616	11,224
Other financial liabilities	89,637	9,341	32,715	148,460	7,569	15,629
Derivative financial liabilities	247,145	33,778	–	573,261	180,666	27
	869,598	**854,235**	**914,415**	**1,319,902**	**788,009**	**748,711**

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

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

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

Any upward or downward variance in the level of interest rates in the euro area by 10 % as of the balance sheet date on 30 September 2019 would, as in the previous year, not have led to any overall change in annual net income. This variance would have reduced/increased equity by a total of Euro 730 thousand/Euro 737 thousand (previous year: Euro 1,264 thousand/Euro 1,972 thousand).

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

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

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

Commodity price risks: In connection with our energy trading activities, energy trading contracts are concluded for the purposes of price 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 activities are initially limited by setting narrow and clearly defined limit structures. Taking due account of the limits thereby stipulated, commodity price risks are hedged using suitable derivative financial instruments. The hedging instruments used mainly involve forwards, futures and swaps.

Hedging transactions are structured and concluded in a manner appropriate to the risks identified for the hedged item, thus creating a direct economic relationship. The price index for hedging instruments is selected in each case in such a way as to conform to the hedged item. This way, the hedging instruments are subject to the same commodity price risk as the hedged items. The objective of MVV's hedging activities is to optimise and minimise risk across the entire portfolio.

The sensitivity involved in measuring electricity, coal, gas and emission right derivatives is analysed in the following section. This analysis assumes that there are no changes in any other parameters and that there is mutual dependency between the commodities. The analysis only includes derivatives for which fluctuations in market values could impact on equity or annual earnings. These involve derivatives requiring mandatory recognition. The analysis does not include energy trading contracts earmarked for the physical delivery of non-financial items in line with the company's expected procurement, sale or utilisation ("own use"). These do not require recognition under IFRS 9.

If the market price at the balance sheet date on 30 September 2019 had been 10 % higher/lower, this would have increased/decreased annual net income by Euro 10,250 thousand / Euro 10,139 thousand (previous year: Euro 19,140 thousand / Euro 19,724 thousand). Equity as of the same reporting date would have increased/decreased by Euro 19,901 thousand / Euro 19,736 thousand (previous year: Euro 27,596 thousand / Euro 27,770 thousand).

Derivative financial instruments and hedging relationships

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

The risks hedged for the hedged items correspond to the contractual terms of the hedging instruments thereby concluded. For commodity and financing risks, for example, the price risks and interest rate risks of the hedged item 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 nominal volumes of derivatives deployed at MVV are presented in the following table:

Nominal volumes by maturity

	30 September 2019			30 September 2018		
Euro 000s	< 1 years	1 - 5 years	> 5 years	< 1 year	1 - 5 years	> 5 years
Interest derivatives	11,443	343,933	154,285	25,603	276,371	231,357
Commodity derivatives	4,623,796	1,783,479	-	3,280,687	1,398,691	-
Currency derivatives	7,353	61,100	-	15,302	1,423	-
	4,642,592	**2,188,512**	**154,285**	**3,321,592**	**1,676,485**	**231,357**

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

Commodity derivatives

Euro 000s	**30 September 2019** Nominal volumes	Fair values	30 September 2018 Nominal volumes	Fair values
Commodity derivatives				
Electricity	4,427,176	13,388	2,837,379	32,912
Coal	17,426	– 8,287	38,678	35,160
Gas	1,788,569	– 10,392	1,643,190	7,895
CO_2 rights	172,541	40,714	160,014	51,766
Other	1,563	324	1,499	579
	6,407,275	**35,747**	**4,680,760**	**128,312**
Commodity derivatives				
Futures	6,389,849	44,034	4,641,273	93,822
Swaps	17,426	– 8,287	39,487	34,490
Options	–	–	–	–
	6,407,275	**35,747**	**4,680,760**	**128,312**

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

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Counterparty risk at 30 September 2019

Euro 000s Counterparty rating as per Standard & Poor's and/or Moody's	**Total** Nominal value	Counterparty risk	**of which < 1 year** Nominal value	Counterparty risk	**of which 1 to 5 years** Nominal value	Counterparty risk
AAA and Aaa to AA- and Aa3	530,728	78,657	135,095	35,451	395,633	43,206
A+ and A1 to A- and A3	73,604	5,484	7,280	45	66,324	5,439
BBB+ and Baa1 to BBB- and Baa3	88,678	13,532	–	–	88,678	13,532
BB+ and Ba1 to BB- and Ba3	–	–	–	–	–	–
Other	2,609,211	292,366	1,403,246	172,503	1,205,965	119,863
	3,302,221	**390,039**	**1,545,621**	**207,999**	**1,756,600**	**182,040**

Counterparty risk at 30 September 2018

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

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 currency risk on foreign-currency liabilities and the interest risk on floating-rate liabilities.

For interest hedges, existing hedged items were included in cash flow hedges with terms of up to 14 years as of 30 September 2019 (previous year: ten years). For commodity hedges, the terms of planned hedged items amount to up to four years (previous year: up to three years).

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

In the year under report, MVV concluded hedging transactions with an average interest rate of 0.86 % to 4.56 % to hedge against interest rate risks in its financing activities. To hedge against currency risks, MVV has a hedging transaction in British pounds with an average hedging rate of 0.93 GBP / EUR. The average hedged prices for commodity price risks range from Euro 20.00 to Euro 71.85 in the electricity business, Euro 11.63 to Euro 26.15 in the gas business and Euro 19.20 to Euro 31.22 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 2019

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

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

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

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

Ineffectivenesses resulting from cash flow hedges and their reclassification from other comprehensive income to profit or loss are recognised in the income statement line item in which the respective hedged item is also recognised. For commodity hedges, amounts of Euro 66,772 thousand and Euro 34,084 thousand were reclassified through profit or loss and recognised under sales and cost of materials respectively in the 2019 financial year. For interest rate hedges, an amount of Euro 8,229 thousand was reclassified through profit or loss and recognised under financing expenses. The reclassifications from equity through profit or loss to the income statement refer to hedged items realised in the financial year under report.

In the 2019 financial year, income due to ineffectiveness was recognised in the financial result in connection with an interest hedge. This involved the reversal of ineffectiveness recognised in previous years.

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

Development in hedge reserve

Euro 000s	FY 2019
Balance at 1 October	27,903
Unrealised changed in reserve for hedging costs	248
Unrealised change in cash flow hedge reserve	– 39,567
Reclassification through profit or loss	
Commodity hedges	– 32,688
Interest rate hedges	– 8,229
Balance at 30 September	**35,875**

The impact on the income statement and on other comprehensive income of the hedging relationships recognised under IAS 39 in the previous year is presented below.

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

Amount reclassified

Euro 000s	FY 2018
Included in EBIT	20,811
Included in financial and tax result	– 8,540
Total amounts withdrawn	**12,271**

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

Amounts recognised in equity

Euro 000s	30 Sep 2018
Cash flow hedges	24,000
of which changes recognised in equity	36,271
of which changes recognised through profit or loss	– 12,271

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

Fair value hedges serve to hedge risks relating to changes in fair value. At MVV, fair value hedges include one foreign currency hedge for intragroup loans and payments in foreign currency. The hedged items amount to Euro 247,235 thousand. The hedging instruments deployed involve a bank liability in British pounds and a forward exchange transaction.

Other assets include a cumulative amount of Euro 1,832 thousand for hedging-related adjustments.

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 2019

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

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

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

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

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

Gains and losses recognised in income statement for fair value hedges

Euro 000s	FY 2018
Gains/losses on hedged item	– 1,580
Gains/losses on hedging instrument	1,270

Capital management

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

The adjusted equity ratio referred to for management purposes presents adjusted consolidated equity as a proportion of adjusted total assets. Adjusted equity comprises all equity items reported in the consolidated financial statements, including non-controlling and minority interests, but excluding non-operating IFRS 9 derivative measurement items and the associated impact on deferred taxes. MVV intends to maintain an adjusted equity ratio of at least 30 %.

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

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

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

36. Segment reporting

Segment report from 1 October 2018 to 30 September 2019

Euro 000s	Adjusted external sales excluding energy taxes [1]	Intercompany sales excluding energy taxes	Scheduled depreciation	Impairment losses
Customer Solutions	2,632,099	162,970	18,531	–
New Energies	734,227	102,217	80,235	–
Supply Reliability	228,716	621,973	59,253	–
Strategic Investments	85,950	1,304	10,924	–
Other Activities	2,368	50,369	14,550	–
Consolidation	–	– 938,833	–	–
	3,683,360	**–**	**183,493**	**–**

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

1 Variance to income statement due to non-inclusion of NIFRIC effects

Segment report from 1 October 2017 to 30 September 2018

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Consistent with the management approach, the earnings stated for the reporting segments include internal transfer relationships between the reporting segments (charges and credits). The distribution of reporting segment earnings presented in the "adjusted EBIT" column corresponds to the distribution of earnings referred to in internal reporting. In some cases, this means that items are charged or credited to earnings in other business fields, and thus in other reporting segments, than the field or segment in which the item responsible for such charge or credit is located. This applies to business fields fully or partly managed on the basis of cost centre logic (shared services and cross-divisional functions).

Furthermore, when it comes to the generation of district heating the primary costs are incurred in operative terms in the Supply Reliability and New Energies reporting segments. These are charged to Customer Solutions. The latter reporting segment reimburses Supply Reliability and New Energies with a prorated return on their capital employed.

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

Reconciliation of EBIT (income statement) with adjusted EBIT

Euro 000s	**1 Oct 2018 to 30 Sep 2019**	1 Oct 2017 to 30 Sep 2018	+/- change
EBIT as per income statement	165,485	256,794	– 91,309
Financial derivative measurement items	56,100	– 31,591	87,691
Structural adjustment for part-time early retirement	172	309	– 137
Restructuring result	–	– 821	821
Interest income in connection with finance leases	3,539	3,240	299
Adjusted EBIT	**225,296**	**227,931**	**– 2,635**

Of segment sales with external customers, 87.9 % were generated in Germany (previous year: 94.7 %). The regional breakdown of sales is based on the geographical location of the respective companies.

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

37. Cash flow statement

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

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

The substantial year-on-year reduction in annual earnings before taxes (EBT) was partly offset by the positive impact of eliminating non-cash income and expenses and of the non-operating result. As a result, the **cash flow before working capital and taxes** decreased by Euro 21 million. The largest positive effect related to the elimination of non-cash IFRS 9 measurement items.

The **cash flow from operating activities** was Euro 94 million lower than in the previous year. This development was due on the one hand to the lower cash flow before working capital and taxes. On the other hand, this reduction was intensified in particular by the increase in inventories and contract assets in the project development business, as well by the repayment of margins (securities for counterparty default risk) in the trading business due to market prices. By contrast, the cash flow from operating activities was positively affected in particular by changes in trade receivables and trade payables as a result of improved working capital management. In the previous year, the strong fluctuation in prepayments received on orders led to a sharp drop in the cash flow from operating activities. The change in the financial year under report was significantly less marked, however, which also led to a sharp improvement compared with the previous year.

The development in the **cash flow from investing activities** was mainly shaped by the higher inflow of funds generated from the sale of non-current assets in the previous year. Furthermore, the cash flow from investing activities was also influenced by the increase in the shareholding held in DC-Datacenter-Group GmbH. The divestments in the financial year under report had an opposing positive impact. The main inflows from sales of fully consolidated companies resulted from the sale of Götzfried + Pitzer Entsorgung GmbH and Vents d'Oc Energies Renouvelables SARL. Payments for investments in property, plant and equipment and intangible assets remained at a similar level to that in the previous year. Overall, the cash flow from investing activities fell by Euro 30 million compared with the 2018 financial year.

The **cash flow from financing activities** rose year-on-year by Euro 229 million, a development largely due to higher net borrowing. This related to the taking up of promissory note loans to finance current major projects. This factor was opposed by the payment made to acquire the remaining shares in Juwi.

MVV reported **cash and cash equivalents** of Euro 358 million as of 30 September 2019 (30 September 2018: Euro 311 million).

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

Liabilities in connection with financing activities

	30 Sep 2018	Cash-effective changes	Non-cash-effective changes				30 Sep 2019
Euro 000s			Restatement as per IFRS 16	Change in scope of consolidation	Changes in exchange rates	Additions to leases	
Liabilities to banks	1,309,034	156,879	-	21,822	167	-	1,487,902
Lease liabilities	45,237	– 13,677	88,143	4,409	79	15,144	139,335
Other financial debt	31,725	50,717	-	– 7,482	– 28	-	74,932
	1,385,996	**193,919**	**88,143**	**18,749**	**218**	**15,144**	**1,702,169**

38. Related party disclosures

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

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

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

The concession duties to the City of Mannheim amounted to Euro 19,441 thousand (previous year: Euro 18,314 thousand).

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

Related party disclosures

	Goods and services provided				Receivables		Liabilities	
	Income		Expenses					
Euro 000s	**1 Oct 2018 to 30 Sep 2019**	1 Oct 2017 to 30 Sep 2018	**1 Oct 2018 to 30 Sep 2019**	1 Oct 2017 to 30 Sep 2018	**30 Sep 2019**	30 Sep 2018	**30 Sep 2019**	30 Sep 2018
City of Mannheim	15,901	14,910	24,995	23,599	850	938	7,245	5,276
Abfallwirtschaft Mannheim	7,567	7,593	1,661	1,617	1,333	1,243	327	403
GBG Mannheimer Wohnungsbaugesellschaft mbH	12,661	12,625	25	166	166	841	8	–
m:con - mannheim:congress GmbH	4,058	4,022	352	419	6,037	6,540	–	–
MKB Mannheimer Kommunalbeteiligungen GmbH (previously: MVV GmbH)	64	63	–	60	1	–	–	–
MV Mannheimer Verkehr GmbH (previously: MVV Verkehr GmbH)	24	29	1	6	–	–	–	–
Rhein-Neckar-Verkehr GmbH	5,786	6,532	317	1,371	603	1,208	1,369	1,552
Stadtentwässerung Mannheim	1,697	1,545	376	414	427	74	19	–
Associates	9,810	10,213	1,301	155,402	2,849	3,372	1,724	10,302
Joint ventures	117,161	63,992	239,027	73,837	24,268	18,196	54,118	25,640
Other related parties	23,602	25,854	3,364	3,490	5,872	5,085	1,457	1,513
	198,331	**147,378**	**271,419**	**260,381**	**42,406**	**37,497**	**66,267**	**44,686**

The income and expenses with other related parties include income of Euro 19 thousand (previous year: Euro 31 thousand) and expenses of Euro 358 thousand (previous year: Euro 374 thousand) for goods and services provided to management staff performing key functions.

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

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

MVV has otherwise not concluded or performed any material related party transactions. In particular, as in the previous year no loans or advances had been granted to members of the Executive or Supervisory Boards as of 30 September 2019. 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 2019.

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

In the year under report, Executive Board members received short-term benefits of Euro 2,439 thousand (previous year: Euro 2,209 thousand). Pension provisions of Euro 9,871 thousand were recognised for them (previous year: Euro 5,754 thousand). The company has not concluded any share-based compensation agreements.

No long-term compensation targets have been agreed. The compensation paid to active division heads and authorised representatives came to Euro 3,033 thousand in the year under report (previous year: Euro 2,439 thousand). Of this total, Euro 2,926 thousand involved short-term benefits (previous year: Euro 2,332 thousand).

Unless they are insured via municipal supplementary pension companies (ZVKs), division heads and authorised representatives receive a defined contribution company pension of up to 8.6 % of their fixed basic compensation. They can determine which biometric risks should be covered. The expenses incurred for this scheme amounted to Euro 108 thousand in the 2019 financial year (previous year: Euro 107 thousand).

Active Supervisory Board members were compensated as follows:

Supervisory Board compensation

Euro 000s	**FY 2019**	FY 2018
Fixed compensation (including meeting allowances)	400	412

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

Former members of the Executive Board received benefits of Euro 531 thousand in the year under report (previous year: Euro 513 thousand). Provisions totalling Euro 21,727 thousand have been stated for pension obligations towards former Executive Board members (previous year: Euro 16,758 thousand). A total of Euro 347 thousand was allocated to this item in the year under report (previous year: Euro 336 thousand).

39. MVV's shareholdings

List of MVV's shareholdings at 30 September 2019

	Town/city	Country	Share of capital [1] %	Footnote
Fully consolidated subsidiaries				
Associates (Germany)				
AVA Abwasser- und Verwertungsanlagen GmbH	Mörfelden-Walldorf	Germany	100.00	4
BEEGY GmbH	Mannheim	Germany	100.00	
BEG Gernsbacher Höhe UG (haftungsbeschränkt) & Co. KG	Mainz	Germany	0.00	7
BEG Haunetal UG (haftungsbeschränkt) & Co. KG	Gundersheim	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	
Biomethananlage Barby GmbH	Mannheim	Germany	100.00	
Biomethananlage Klein Wanzleben GmbH	Mannheim	Germany	100.00	
Biomethananlage Kroppenstedt GmbH	Mannheim	Germany	100.00	
Biomethananlage Staßfurt GmbH	Mannheim	Germany	100.00	
Cerventus Naturenergie GmbH	Offenbach am Main	Germany	50.00	
Cerventus Naturenergie Verwaltungs GmbH	Offenbach am Main	Germany	100.00	
Dabit Grundstücksverwaltungsgesellschaft mbH & Co. Vermietungs KG	Mainz	Germany	94.00	
DC-Datacenter-Group GmbH	Wallmenroth	Germany	74.99	
DC-Group Immobilienverwaltung GmbH & Co. OHG	Wallmenroth	Germany	100.00	5
econ solutions GmbH	München (dom.: Mannheim)	Germany	100.00	
Energienetze Offenbach GmbH	Offenbach am Main	Germany	100.00	4
Energieversorgung Dietzenbach GmbH	Dietzenbach	Germany	50.00	
Energieversorgung Offenbach Aktiengesellschaft	Offenbach am Main	Germany	48.42	2
eternegy GmbH	Mannheim	Germany	100.00	
EVO Ressourcen GmbH (previously: EVO Alpha 3 GmbH)	Offenbach am Main	Germany	100.00	5
EVO Vertrieb GmbH	Offenbach am Main	Germany	100.00	
FRASSUR GmbH Umweltschutz-Dienstleistungen	Mörfelden-Walldorf	Germany	100.00	
Gasversorgung Offenbach GmbH	Offenbach am Main	Germany	74.90	
IGS Netze GmbH	Gersthofen	Germany	100.00	4
Infrastruktur Callbach GmbH & Co. KG	Wörrstadt	Germany	71.40	
Infrastruktur Fahlenberg GmbH & Co. KG	Wörrstadt	Germany	50.00	
Infrastruktur Oberheimbach II GmbH & Co. KG	Wörrstadt	Germany	72.00	
Infrastruktur Waldweiler GmbH & Co. KG	Wörrstadt	Germany	60.40	
Infrastrukturgesellschaft Hungerberg GmbH & Co. KG	Offenbach am Main	Germany	100.00	
Infrastrukturgesellschaft Schmölln GmbH & Co. KG	Wörrstadt	Germany	41.32	
Infrastrukturgesellschaft Veldenz GmbH & Co. KG	Wörrstadt	Germany	61.86	
juwi AG	Wörrstadt	Germany	100.00	
juwi Bestandsanlagen GmbH (previously: juwi Repowering GmbH)	Wörrstadt	Germany	100.00	4, 5
juwi Bio Germany 19 GmbH & Co. KG	Wörrstadt	Germany	100.00	
juwi Bio Service & Betriebs GmbH	Wörrstadt	Germany	100.00	
juwi Operations & Maintenance GmbH	Wörrstadt	Germany	100.00	4
juwi Verwaltungs GmbH	Wörrstadt	Germany	100.00	
juwi Wind Germany 135 GmbH & Co. KG	Wörrstadt	Germany	88.00	
juwi Wind Germany 162 GmbH & Co. KG	Wörrstadt	Germany	80.00	
juwi Wind Germany 196 GmbH & Co. KG	Wörrstadt	Germany	100.00	5
juwi Wind Germany 33 GmbH & Co. KG	Wörrstadt	Germany	100.00	
juwi Wind Germany Verwaltungs GmbH	Wörrstadt	Germany	100.00	
Köthen Energie GmbH	Köthen	Germany	100.00	
MDW Muldendienst West GmbH	Frankfurt am Main	Germany	100.00	

List of MVV's shareholdings at 30 September 2019

	Town/city	Country	Share of capital [1] %	Footnote
mobiheat GmbH	Friedberg in Bayern	Germany	74.90	
MVV Alpha fünfzehn GmbH	Mannheim	Germany	100.00	4
MVV Biogas Bernburg GmbH	Mannheim (dom.: Bernburg/Saale)	Germany	90.00	
MVV Biogas Dresden GmbH	Mannheim (dom.: Dresden)	Germany	100.00	
MVV decon GmbH	Mannheim	Germany	100.00	
MVV Enamic GmbH	Mannheim	Germany	100.00	4
MVV Enamic Korbach GmbH	Korbach	Germany	100.00	4
MVV Enamic Ludwigshafen GmbH	Mannheim	Germany	100.00	
MVV Enamic Naturenergie GmbH	Mannheim	Germany	100.00	
MVV EnergySolutions GmbH	Mannheim	Germany	100.00	4
MVV ImmoSolutions GmbH	Berlin	Germany	100.00	4
MVV Industriepark Gersthofen GmbH	Gersthofen	Germany	100.00	4
MVV Netze GmbH	Mannheim	Germany	100.00	4
MVV RHE GmbH	Mannheim	Germany	100.00	4
MVV Trading GmbH	Mannheim	Germany	97.50	4
MVV Umwelt Asset GmbH	Mannheim	Germany	100.00	4
MVV Umwelt GmbH	Mannheim	Germany	100.00	4
MVV Umwelt Ressourcen GmbH	Mannheim	Germany	100.00	4
MVV Windenergie Deutschland GmbH	Mannheim	Germany	100.00	
MVV Windenergie GmbH	Mannheim	Germany	100.00	4
MVV Windpark Freudenberg GmbH	Mannheim	Germany	100.00	
MVV Windpark Plauerhagen GmbH & Co. KG	Ostseebad Rerik	Germany	100.00	
Netzgesellschaft Köthen mbH	Köthen	Germany	100.00	4, 6
New Breeze GmbH	Wörrstadt	Germany	100.00	
RZ-Products GmbH	Wallmenroth	Germany	100.00	5
Soluvia Energy Services GmbH	Offenbach am Main	Germany	100.00	5
Soluvia GmbH	Mannheim	Germany	100.00	
Soluvia IT-Services GmbH	Kiel	Germany	100.00	
Stadtwerke Kiel Aktiengesellschaft	Kiel	Germany	51.00	
SWKiel Netz GmbH	Kiel	Germany	100.00	4
SWKiel Speicher GmbH	Kiel	Germany	100.00	4
Umspannwerk Kirchberg 2 GmbH & Co. KG	Wörrstadt	Germany	51.60	
Windpark Albisheim GmbH & Co. KG	Offenbach am Main	Germany	100.00	
Windpark Buhlenberg GmbH & Co. KG	Hanover	Germany	100.00	5
Windpark Dirlammen GmbH & Co. KG	Offenbach am Main	Germany	100.00	
Windpark Hungerberg I GmbH & Co. KG	Offenbach am Main	Germany	100.00	
Windpark Hungerberg II GmbH & Co. KG	Offenbach am Main	Germany	100.00	
Windpark Kirchberg GmbH & Co. KG	Offenbach am Main	Germany	100.00	
Windwärts Energie GmbH	Hanover	Germany	100.00	
Windwärts Photovoltaik GmbH	Hanover	Germany	100.00	
WiWi Windkraft GmbH & Co. Herrnsheim KG	Wörrstadt	Germany	100.00	
WiWi Windkraft GmbH & Co. Worms KG	Wörrstadt	Germany	100.00	

List of MVV's shareholdings at 30 September 2019

	Town/city	Country	Share of capital [1] %	Footnote
Fully consolidated subsidiaries				
Associates (international)				
Cactus Garden Solar LLC	Delaware	USA	100.00	
Ceskolipská teplárenská a.s.	Ceská Lípa	Czech Republic	75.00	
Ceskolipské teplo a.s.	Ceská Lípa (dom.: Prague)	Czech Republic	100.00	
Corsoleil EURL	Saint Florent	France	100.00	
CTZ s.r.o.	Uherské Hradiste	Czech Republic	50.96	
e.services s.r.o.	Decín	Czech Republic	100.00	
Electaparc S.A.	Montevideo	Uruguay	100.00	
ENERGIE Holding a.s.	Prague	Czech Republic	100.00	
G-LINDE s.r.o.	Prague	Czech Republic	100.00	
G-RONN s.r.o.	Prague	Czech Republic	100.00	
IROMEZ s.r.o.	Pelhrimov	Czech Republic	100.00	
JSI 01 Srl	Verona	Italy	100.00	
JSI Construction Group LLC	Delaware	USA	100.00	
JSI Equipment Solutions LLC	Delaware	USA	100.00	
JSI Milford Realty Company LLC	Delaware	USA	100.00	
JSI O&M Group LLC	Delaware	USA	100.00	
juwi energias renovables de Chile S.R.L.	Santiago de Chile	Chile	100.00	
juwi energias renovables S.L.U.	Valencia	Spain	100.00	
juwi Energie Rinnovabili Srl	Verona	Italy	100.00	
juwi Energii Regenerabile S.R.L.	Bucharest	Romania	99.00	
juwi Energy Services (Pty) Ltd.	Cape Town	South Africa	80.00	
juwi Hellas renewable energy sources A.E.	Athens	Greece	100.00	
juwi Holding US LLC	Delaware	USA	100.00	
juwi Inc.	Delaware	USA	100.00	
juwi India Renewable Energies Private Limited	Bangalore	India	100.00	
juwi Nippon Energy K.K.	Tokyo	Japan	100.00	
juwi Philippines Inc.	Makati City	Philippines	99.99	
juwi Renewable Energies (Pty) Ltd.	Cape Town	South Africa	100.00	
juwi Renewable Energies Ltd.	London	UK	100.00	
juwi renewable Energies Malaysia SDN. BHD.	Kuala Lumpur	Malaysia	100.00	
juwi renewable energies Pvt. Ltd.	Singapore	Singapore	100.00	
juwi Renewable Energies Thai Co.. Ltd.	Bangkok	Thailand	100.00	
juwi Renewable Energy Pty. Ltd.	Brisbane	Australia	100.00	
juwi Singapore Projects Pvt. Ltd.	Singapore	Singapore	100.00	
Juwi Solar ZA Construction 1 (Pty) Ltd.	Cape Town	South Africa	80.00	
Juwi Solar ZA Construction 2 (Pty) Ltd.	Cape Town	South Africa	92.00	
Juwi Solar ZA Construction 3 (Pty) Ltd.	Cape Town	South Africa	80.00	
juwi Solar ZA Construction 4 (Pty) Ltd.	Cape Town	South Africa	60.00	
juwi Solar ZA O&M 1 (Pty) Ltd.	Cape Town	South Africa	49.00	
juwi Wind LLC	Delaware	USA	100.00	
Kozilio Dio I.K.E. (Monoprosopi)	Athens	Greece	100.00	
Kozilio Ena I.K.E. (Monoprosopi)	Athens	Greece	100.00	
Las Torres Solar I S.L.	Valencia	Spain	100.00	
mobiheat Schweiz GmbH	Glattbrugg	Switzerland	100.00	
mobiheat Österreich GmbH	Sankt Lorenz	Austria	100.00	

List of MVV's shareholdings at 30 September 2019

	Town/city	Country	Share of capital [1] %	Footnote
MVV Energie CZ a.s.	Prague	Czech Republic	100.00	
MVV Environment Baldovie Ltd.	Dundee	UK	100.00	
MVV Environment Devonport Limited	Plymouth	UK	100.00	
MVV Environment Limited	London	UK	100.00	
MVV Environment Ridham Limited	Sittingbourne/Iwade	UK	100.00	
MVV Environment Services Limited	London	UK	100.00	
OPATHERM a.s.	Opava	Czech Republic	100.00	
POWGEN a.s.	Prague	Czech Republic	100.00	
proRZ Rechenzentrumsbau Austria GmbH in Liqu.	Hallein	Austria	100.00	5
Rocky Mountain Solar LLC	Delaware	USA	100.00	
SE Chronus Solar Energy 10 E.P.E.	Athens	Greece	100.00	
SE Chronus Solar Energy 11 E.P.E.	Athens	Greece	100.00	
SE Chronus Solar Energy 12 E.P.E.	Athens	Greece	100.00	
SE Chronus Solar Energy 13 E.P.E.	Athens	Greece	100.00	
SE Chronus Solar Energy 14 E.P.E.	Athens	Greece	100.00	
SE Chronus Solar Energy 15 E.P.E.	Athens	Greece	100.00	
SE Chronus Solar Energy 16 E.P.E.	Athens	Greece	100.00	
SE Chronus Solar Energy 17 E.P.E.	Athens	Greece	100.00	
SE Chronus Solar Energy 18 E.P.E.	Athens	Greece	100.00	
SE Chronus Solar Energy 19 E.P.E.	Athens	Greece	100.00	
SE Chronus Solar Energy 2 E.P.E.	Athens	Greece	100.00	
SE Chronus Solar Energy 3 E.P.E.	Athens	Greece	100.00	
SE Chronus Solar Energy 4 E.P.E.	Athens	Greece	100.00	
SE Chronus Solar Energy 5 E.P.E.	Athens	Greece	100.00	
SE Chronus Solar Energy 6 E.P.E.	Athens	Greece	100.00	
SE Chronus Solar Energy 7 E.P.E.	Athens	Greece	100.00	
SE Chronus Solar Energy 8 E.P.E.	Athens	Greece	100.00	
SE Chronus Solar Energy 9 E.P.E.	Athens	Greece	100.00	
Teplárna Liberec a.s.	Liberec	Czech Republic	76.04	
TERMIZO a.s.	Liberec	Czech Republic	100.00	
TERMO Decín a.s.	Decín	Czech Republic	96.91	
Zásobování teplem Vsetín a.s.	Vsetín	Czech Republic	100.00	
Unconsolidated other shareholdings				
Associates (Germany)				
Blue Village FRANKLIN Mobil GmbH	Mannheim	Germany	100.00	
Erschließungsträgergesellschaft Weeze mbH	Weeze	Germany	75.00	
iwo Pellet Rhein - Main GmbH	Offenbach am Main	Germany	100.00	
juwi Solar Germany 13 GmbH & Co. KG	Wörrstadt	Germany	100.00	
juwi Solar Germany 3 GmbH & Co. KG	Wörrstadt	Germany	100.00	
juwi Wind Germany 126 GmbH & Co. KG	Wörrstadt	Germany	100.00	
juwi Wind Germany 127 GmbH & Co. KG	Wörrstadt	Germany	100.00	
juwi Wind Germany 128 GmbH & Co. KG	Wörrstadt	Germany	100.00	
juwi Wind Germany 134 GmbH & Co. KG	Wörrstadt	Germany	100.00	
juwi Wind Germany 177 GmbH & Co. KG	Wörrstadt	Germany	100.00	
juwi Wind Germany 178 GmbH & Co. KG	Wörrstadt	Germany	100.00	

List of MVV's shareholdings at 30 September 2019

	Town/city	Country	Share of capital [1] %	Footnote
juwi Wind Germany 180 GmbH & Co. KG	Wörrstadt	Germany	100.00	
juwi Wind Germany 183 GmbH & Co. KG	Wörrstadt	Germany	100.00	
juwi Wind Germany 184 GmbH & Co. KG	Wörrstadt	Germany	100.00	
juwi Wind Germany 185 GmbH & Co. KG	Wörrstadt	Germany	100.00	
juwi Wind Germany 186 GmbH & Co. KG	Wörrstadt	Germany	100.00	
juwi Wind Germany 189 GmbH & Co. KG	Wörrstadt	Germany	100.00	
juwi Wind Germany 190 GmbH & Co. KG	Wörrstadt	Germany	100.00	
juwi Wind Germany 191 GmbH & Co. KG	Wörrstadt	Germany	100.00	
juwi Wind Germany 192 GmbH & Co. KG	Wörrstadt	Germany	100.00	
juwi Wind Germany 193 GmbH & Co. KG	Wörrstadt	Germany	100.00	5
juwi Wind Germany 194 GmbH & Co. KG	Wörrstadt	Germany	100.00	5
juwi Wind Germany 197 GmbH & Co. KG	Wörrstadt	Germany	100.00	5
juwi Wind Germany 198 GmbH & Co. KG	Wörrstadt	Germany	100.00	5
juwi Wind Germany 200 GmbH & Co. KG	Wörrstadt	Germany	100.00	5
juwi Wind Germany 201 GmbH & Co. KG	Wörrstadt	Germany	100.00	5
juwi Wind Germany 202 GmbH & Co. KG	Wörrstadt	Germany	100.00	5
juwi Wind Germany 203 GmbH & Co. KG	Wörrstadt	Germany	100.00	5
juwi Wind Germany 204 GmbH & Co. KG	Wörrstadt	Germany	100.00	5
juwi Wind Germany 205 GmbH & Co. KG	Wörrstadt	Germany	100.00	5
juwi Wind Germany 206 GmbH & Co. KG	Wörrstadt	Germany	100.00	5
juwi Wind Germany 207 GmbH & Co. KG	Wörrstadt	Germany	100.00	5
juwi Wind Germany 208 GmbH & Co. KG	Wörrstadt	Germany	100.00	5
juwi Wind Germany 209 GmbH & Co. KG	Wörrstadt	Germany	100.00	5
juwi Wind Germany 212 GmbH & Co. KG	Wörrstadt	Germany	100.00	5
juwi Wind Germany 213 GmbH & Co. KG	Wörrstadt	Germany	100.00	5
juwi Wind Germany 214 GmbH & Co. KG	Wörrstadt	Germany	100.00	5
juwi Wind Germany 215 GmbH & Co. KG	Wörrstadt	Germany	100.00	5
juwi Wind Germany 51 GmbH & Co. KG	Wörrstadt	Germany	100.00	
MVV Alpha zwei GmbH	Mannheim	Germany	100.00	4
MVV Insurance Services GmbH	Mannheim	Germany	100.00	
MVV Regioplan GmbH	Mannheim	Germany	100.00	4
MVV Windpark Verwaltungs GmbH	Mannheim	Germany	100.00	
Neu-Anspach Wind GmbH & Co. KG	Wörrstadt	Germany	100.00	
Windpark Biebelnheim-Gabsheim GmbH & Co. KG (previously: juwi Wind Germany 199 GmbH & Co. KG)	Wörrstadt	Germany	100.00	5
Windpark Hellenthal Wiesenhardt GmbH & Co. KG	Wörrstadt	Germany	100.00	
Windpark Lauda-Heckfeld GmbH & Co. KG	Wörrstadt	Germany	100.00	
Windpark Mußbach GmbH & Co. KG	Wörrstadt	Germany	100.00	
Windpark Wiebelsheim GmbH & Co. KG	Wörrstadt	Germany	100.00	
Windwärts Betriebs- und Beteiligungsgesellschaft mbH (previously: Windwärts erste Verwaltungsgesellschaft mbH)	Hanover	Germany	100.00	
Windwärts Projektmanagement GmbH	Hanover	Germany	100.00	
WKA Schauerberg GmbH & Co. KG	Wörrstadt	Germany	100.00	

List of MVV's shareholdings at 30 September 2019

	Town/city	Country	Share of capital [1] %	Footnote
Unconsolidated other shareholdings				
Associates (international)				
Abert Rim Solar LLC	Delaware	USA	100.00	
Achab Wind Farm (Pty) Ltd.	Cape Town	South Africa	100.00	
AL Solar I LLC	Delaware	USA	100.00	
Alachua Solar LLC	Delaware	USA	100.00	
Apple Valley Solar LLC	Delaware	USA	100.00	
Archer Solar LLC	Delaware	USA	100.00	
Arizona Solar I LLC	Delaware	USA	100.00	
Ashdown Solar LLC	Delaware	USA	100.00	
Axial Basin Solar LLC	Delaware	USA	100.00	5
Birch Creek Solar LLC	Delaware	USA	100.00	
Bishop Cap Solar LLC	Delaware	USA	100.00	5
Black Hollow Solar LLC	Delaware	USA	100.00	
Blue Creek Solar LLC	Delaware	USA	100.00	
Blue Earth Solar LLC	Delaware	USA	100.00	
Blue Grama Solar LLC	Delaware	USA	100.00	
Blue Spruce Solar LLC	Delaware	USA	100.00	
Briscoe Solar LLC	Delaware	USA	100.00	
Buckeye South Solar LLC	Delaware	USA	100.00	
Buckskin Solar LLC	Delaware	USA	100.00	
Cache Valley Solar LLC	Delaware	USA	100.00	
Cascade Solar LLC	Delaware	USA	100.00	
Castle Wind Farm (Pty) Ltd.	Cape Town	South Africa	100.00	
Cedar Canyon Solar LLC	Delaware	USA	100.00	
Cedarwood Solar LLC	Delaware	USA	100.00	
Centrale Solair De Lafayette LLC	Delaware	USA	100.00	
Chapeno Solar LLC	Delaware	USA	100.00	5
Chewaucan Solar LLC	Delaware	USA	100.00	
Chino Valley Solar LLC	Delaware	USA	100.00	5
Chinquapin Solar LLC	Delaware	USA	100.00	5
Cinnaminson Solar LLC	Delaware	USA	100.00	
Coolidge Solar LLC	Delaware	USA	100.00	
Coyote Gulch Solar LLC	Delaware	USA	100.00	5
Curry Hill Solar LLC	Delaware	USA	100.00	
Daisy Canyon Solar LLC	Delaware	USA	100.00	
Deer Creek Solar LLC	Delaware	USA	100.00	
Delareyville Solar Farm (Pty) Ltd.	Cape Town	South Africa	100.00	
Dolores Canyon Solar LLC	Delaware	USA	100.00	5
Eureka Solar LLC	Delaware	USA	100.00	
Firelands Wind Farm LLC	Delaware	USA	100.00	
Fountain Solar LLC	Delaware	USA	100.00	
Front Range Solar LLC	Delaware	USA	100.00	
GA Solar I LLC	Delaware	USA	100.00	
Galloway Solar LLC	Delaware	USA	100.00	
Gila Solar LLC	Delaware	USA	100.00	5
Grassland Solar LLC	Delaware	USA	100.00	

List of MVV's shareholdings at 30 September 2019

	Town/city	Country	Share of capital [1] %	Footnote
Hartebeest Wind Farm (Pty) Ltd.	Cape Town	South Africa	100.00	
High Plains Solar LLC	Delaware	USA	100.00	
Highland Solar LLC	Delaware	USA	100.00	5
Holden Solar LLC	Delaware	USA	100.00	
Hotazel Solar Farm 1 (Pty) Ltd.	Cape Town	South Africa	100.00	
Hotazel Solar Farm 2 (Pty) Ltd.	Cape Town	South Africa	100.00	
Hudsonville Solar LLC	Delaware	USA	100.00	
JSI Construction Canada LLC	Delaware	USA	100.00	
JSI Equipment Purchasing Inc.	Delaware	USA	100.00	5
JSI PR Green Holding Company Inc.	Delaware	USA	100.00	
JSI Procurement Group LLC	Delaware	USA	100.00	
JSI Rockfish Realty LLC	Delaware	USA	100.00	
juwi Development 01 Srl	Verona	Italy	100.00	5
juwi Development 02 Srl	Verona	Italy	100.00	5
juwi Development 03 Srl	Verona	Italy	100.00	5
juwi Energy Services 2 (Pty) Ltd.	Cape Town	South Africa	80.00	
juwi Solar ZA Construction 9 (Pty) Ltd.	Cape Town	South Africa	60.00	
juwi Solar ZA O&M 2 (Pty) Ltd. (previously: K20171516079 (Pty) Ltd.)	Cape Town	South Africa	100.00	
juwi Viet Nam Company Limited	Hanoi	Vietnam	100.00	
JWT Asset Co.. Ltd.	Bangkok	Thailand	49.80	6
Kaip Wind Farm (Pty) Ltd.	Cape Town	South Africa	100.00	
Kap Vley Wind Farm (Pty) Ltd.	Cape Town	South Africa	100.00	
Kenhardt PV1 (Pty) Ltd.	Cape Town	South Africa	100.00	
Kiowa Creek Solar LLC	Delaware	USA	100.00	
Kiowa Solar LLC	Delaware	USA	100.00	
Klondike Solar LLC	Delaware	USA	100.00	
Koppie Enkel Solar Farm (Pty) Ltd.	Cape Town	South Africa	100.00	
Kronos Solar Farm 1 (Pty) Ltd.	Cape Town	South Africa	100.00	
Kronos Solar Farm 2 (Pty) Ltd.	Cape Town	South Africa	100.00	
Kronos Solar Farm 3 (Pty) Ltd.	Cape Town	South Africa	100.00	
L&D Solar LLC	Delaware	USA	100.00	
La Garita Solar LLC	Delaware	USA	100.00	5
Lavaca Solar LLC	Delaware	USA	100.00	5
Lone Rock Solar LLC	Delaware	USA	100.00	
Long Prairie Solar LLC	Delaware	USA	100.00	
Los Brazos Solar LLC	Delaware	USA	100.00	5
Lost Creek Solar LLC	Delaware	USA	100.00	
Madras Solar LLC	Delaware	USA	100.00	
Marovax (Pty) Ltd.	Cape Town	South Africa	100.00	
Meadowlark Solar LLC	Delaware	USA	100.00	
Mesilla Solar LLC	Delaware	USA	100.00	
Mesquite Solar LLC	Delaware	USA	100.00	
MN Solar LLC	Delaware	USA	100.00	
Moffat Solar LLC	Delaware	USA	100.00	5
Monarch Solar LLC	Delaware	USA	100.00	
Monaville Solar LLC	Delaware	USA	100.00	5
Muleshoe Solar LLC	Delaware	USA	100.00	
MVV Environnement Ressources SASU	Colmar	France	100.00	

List of MVV's shareholdings at 30 September 2019

	Town/city	Country	Share of capital [1] %	Footnote
Namies Wind Farm (Pty) Ltd.	Cape Town	South Africa	100.00	
Nine Mile Solar LLC	Delaware	USA	100.00	
NM Solar I LLC	Delaware	USA	100.00	
Oasis Wind Farm (Pty) Ltd.	Cape Town	South Africa	100.00	
OH Solar I LLC	Delaware	USA	100.00	
Ophir Canyon Solar I LLC	Delaware	USA	100.00	
Ophir Canyon Solar II LLC	Delaware	USA	100.00	
Ophir Canyon Solar LLC	Delaware	USA	100.00	
Osage Solar LLC	Delaware	USA	100.00	
Othello Solar LLC	Delaware	USA	100.00	
Outeniqua Wind Farm (Pty) Ltd.	Cape Town	South Africa	100.00	
Pacolet Solar LLC	Delaware	USA	100.00	5
Palisade Solar LLC	Delaware	USA	100.00	
Parachute Solar LLC	Delaware	USA	100.00	
Paradox Valley Solar LLC	Delaware	USA	100.00	5
Pike Solar LLC	Delaware	USA	100.00	
Pilot Rock Solar LLC	Delaware	USA	100.00	
Pleasant Hill Solar LLC	Delaware	USA	100.00	
Poplar Springs Solar LLC	Delaware	USA	100.00	
Pronghorn Solar LLC	Delaware	USA	100.00	
Rawhide Flats II Solar LLC	Delaware	USA	100.00	
Razorback Solar LLC	Delaware	USA	100.00	
Red Dirt Solar LLC	Delaware	USA	100.00	5
Royal Slope Solar LLC	Delaware	USA	100.00	
Saddle Butte Solar LLC	Delaware	USA	100.00	
San Arroyo Solar LLC	Delaware	USA	100.00	
San Carlos Solar LLC	Delaware	USA	100.00	
San Tan Mountain Solar LLC	Delaware	USA	100.00	5
Sand Hollow Solar LLC	Delaware	USA	100.00	
Santa Cruz Solar LLC	Delaware	USA	100.00	
Santa Rita Solar LLC	Delaware	USA	100.00	5
Santa Rosa Solar LLC	Delaware	USA	100.00	
Saranac Solar LLC	Delaware	USA	100.00	
Seward Solar LLC	Delaware	USA	100.00	5
Shaefers Peak Solar LLC	Delaware	USA	100.00	
Sherman Solar LLC	Delaware	USA	100.00	5
Sierra Mojada Solar LLC	Delaware	USA	100.00	
Sierra Vista Solar LLC	Delaware	USA	100.00	5
Silver Moon Solar LLC	Delaware	USA	100.00	
Silver River Solar LLC	Delaware	USA	100.00	5
Skipjack Solar LLC	Delaware	USA	100.00	
Spanish Peaks II Solar LLC	Delaware	USA	100.00	5
Spanish Peaks Solar LLC (previously: Valent Canyon Solar LLC)	Delaware	USA	100.00	
Squirrel Creek Solar LLC	Delaware	USA	100.00	
Stansburry Solar II LLC	Delaware	USA	100.00	
Stansburry Solar LLC	Delaware	USA	100.00	
Sugarcane Solar LLC	Delaware	USA	100.00	
Suwannee Solar LLC	Delaware	USA	100.00	

List of MVV's shareholdings at 30 September 2019

	Town/city	Country	Share of capital [1] %	Footnote
Tailwind Solar LLC	Delaware	USA	100.00	
Thatcher Solar LLC	Delaware	USA	100.00	
Vredendal Solar Farm (Pty) Ltd.	Cape Town	South Africa	100.00	
Wildebeest Wind Farm (Pty) Ltd.	Cape Town	South Africa	100.00	
Wolf Wind Farm (Pty) Ltd.	Cape Town	South Africa	100.00	
Zingesele Wind Farm (Pty) Ltd.	Cape Town	South Africa	100.00	
At equity				
Joint ventures (Germany)				
ABeG Abwasserbetriebsgesellschaft mbH	Dietzenbach	Germany	49.00	
Allegro engineering GmbH	Markranstädt-Thronitz	Germany	30.00	
AVR BioGas GmbH	Sinsheim	Germany	41.50	
BEEGY Operations GmbH	Mannheim	Germany	51.00	
Biomasse Rhein-Main GmbH	Flörsheim am Main	Germany	33.33	
enerix Franchise GmbH & Co KG	Regensburg	Germany	25.10	
enerix Management GmbH	Regensburg	Germany	25.10	
Fernwärme Rhein-Neckar GmbH	Mannheim	Germany	50.00	
Gemeinschaftskraftwerk Kiel Gesellschaft mit beschränkter Haftung	Kiel	Germany	50.00	
Grosskraftwerk Mannheim Aktiengesellschaft	Mannheim	Germany	28.00	
Infrastruktur Donnersberg GmbH & Co. KG	Wörrstadt	Germany	36.31	
Infrastrukturgesellschaft Rheinhessen II GmbH & Co. KG	Wörrstadt	Germany	48.00	
KommunalWind GmbH & Co. KG	Tübingen	Germany	50.00	
MAIN DC Asset GmbH (previously: EVO Alpha 7 GmbH)	Offenbach am Main	Germany	60.00	5
MAIN DC Offenbach GmbH (previously: DataCenter Offenbach Rhein-Main GmbH)	Offenbach am Main	Germany	60.00	
Mainnetz GmbH	Obertshausen	Germany	25.10	
Naunhofer Transportgesellschaft mbH	Parthenstein-Großsteinberg	Germany	50.00	
Qivalo GmbH	Mannheim	Germany	42.50	
ReNabi GmbH	Mannheim	Germany	51.00	
Rockenhausen Windenergie-Projektentwicklungs GmbH i.L.	Rockenhausen	Germany	49.00	
Stadtwerke Ingolstadt Beteiligungen GmbH	Ingolstadt	Germany	48.40	
Stadtwerke Sinsheim Versorgungs GmbH & Co. KG	Sinsheim	Germany	30.00	
Umspannwerk Donnersberg GmbH & Co. KG	Wörrstadt	Germany	36.31	
wärme.netz.werk Rhein-Neckar GmbH	Heidelberg	Germany	50.00	5
At equity				
Joint ventures (international)				
juwi Shizen Energy Inc.	Tokyo	Japan	50.00	
luminatis S.à.r.l.	Luxembourg	Luxembourg	70.00	

List of MVV's shareholdings at 30 September 2019

	Town/city	Country	Share of capital [1] %	Footnote
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	39.00	
Naturenergie Main-Kinzig GmbH	Gelnhausen	Germany	50.00	
Netzgesellschaft Edingen-Neckarhausen GmbH & Co. KG	Edingen-Neckarhausen	Germany	24.00	
Phoenix Energie GmbH	Hanover	Germany	0.05	6
Recogizer Group GmbH	Bonn	Germany	40.69	
Stadtwerke Buchen GmbH & Co. KG	Buchen-Odenwald	Germany	25.10	
Zweckverband Wasserversorgung Kurpfalz (ZWK)	Mannheim (dom: Heidelberg)	Germany	51.00	3
At equity				
Associates (international)				
juwi Shizen Energy Operation Inc.	Tokyo	Japan	30.00	
Other minority shareholdings				
(Germany)				
8KU GmbH	Berlin	Germany	12.50	
Infrastruktur Oberheimbach I GmbH & Co. KG	Wörrstadt	Germany	15.00	
Infrastrukturgesellschaft Bischheim GmbH & Co. KG	Wörrstadt	Germany	15.31	
juwi Wind Germany 129 GmbH & Co. KG	Wörrstadt	Germany	16.00	
Klimaschutzagentur Mannheim gemeinnützige GmbH	Mannheim	Germany	40.00	
Main-Kinzig-Entsorgungs- und Verwertungs GmbH	Gelnhausen	Germany	49.00	
Management Stadtwerke Buchen GmbH	Buchen-Odenwald	Germany	25.20	
RIO Holzenergie GmbH & Co. Langelsheim KG	Wörrstadt	Germany	37.55	
Stadtmarketing Mannheim GmbH	Mannheim	Germany	3.09	
Stadtwerke Langen Gesellschaft mit beschränkter Haftung	Langen	Germany	10.00	4
Stadtwerke Schwetzingen GmbH & Co. KG	Schwetzingen	Germany	10.00	
Stadtwerke Schwetzingen Verwaltungsgesellschaft mbH	Schwetzingen	Germany	10.00	
Stadtwerke Sinsheim Verwaltungs GmbH	Sinsheim	Germany	30.00	
Stadtwerke Walldorf GmbH & Co. KG	Walldorf	Germany	25.10	
Stadtwerke Walldorf Verwaltungs GmbH	Walldorf	Germany	25.10	
SWT Regionale Erneuerbare Energien GmbH	Trier	Germany	51.00	
Wasserversorgungsverband Neckargruppe	Edingen-Neckarhausen	Germany	25.00	
Windfarm Wonnegau UW GmbH & Co. KG	Gundersheim	Germany	24.70	
WiWi Windkraft GmbH & Co. Westpfalz KG	Wörrstadt	Germany	5.32	
WVE Wasserversorgungs- und -entsorgungsgesellschaft Schriesheim mbH	Schriesheim	Germany	24.50	

[1] Share of capital at 30 September 2019 pursuant to § 16 (4) AktG; equity and annual net income pursuant to HGB or local requirements
[2] Majority of voting rights
[3] No voting right majority
[4] Profit transfer/operating profit transfer agreement
[5] Added in financial year
[6] Control agreement or controlling influence
[7] Citizens' energy company

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

40. Auditor's fee

The following fees were incurred in Germany for the services performed by the auditor of the consolidated financial statements, PricewaterhouseCoopers GmbH Wirtschaftsprüfungsgesellschaft, in the 2019 financial year:

Auditor's fee

Euro 000s	FY 2019	FY 2018
Audit	1,973	2,188
Other advisory services	252	486
Tax advisory services	63	101
Other services	56	357
	2,344	**3,132**

The audit services line item relates above all to the fees paid for the audit of the consolidated financial statements and the audit of the separate financial statements of MVV Energie AG and its subsidiaries. The fees paid for other audit services mainly relate to audits performed in accordance with energy industry requirements/attestations (EEG, KWKG) and voluntary certification services. The tax advisory services line item particularly involves fees for support provided in the context of external audits and tax advisory services in the field of transfer prices. The fees paid for other services chiefly include fees for market advisory services in connection with obtaining comparative figures.

41. Utilisation of § 264 (3) HGB

The following German subsidiaries will draw on the disclosure exemption provided for under § 264 (3) HGB for the 2019 financial year:

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

42. Declaration of Conformity under § 161 AktG

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

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

43. Information on concessions

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

44. Events after balance sheet date

MVV Trading acquired 100 % of the shares in the energy services provider EnDaNet GmbH, Erfurt, as of 1 October 2019. The acquisition of this company will enable MVV Trading GmbH to sustainably boost the growth trajectory in its energy services and municipal utility company business.

Mannheim, 12 November 2019

MVV Energie AG

Executive Board

Dr. Müller		Amann		Klöpfer		Dr. Roll

Responsibility Statement

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

Mannheim, 12 November 2019

MVV Energie AG

Executive Board

Dr. Müller Amann Klöpfer Dr. Roll

Directors and Officers

EXECUTIVE BOARD OF MVV ENERGIE AG

Dr. Georg Müller
CEO, Commercial Affairs
and Labour Director
(Labour Director until 31 July 2019)

Verena Amann
Personnel and Labour Director
(since 1 August 2019)

Ralf Klöpfer
Sales

Dr. Hansjörg Roll
Technology

SUPERVISORY BOARD OF MVV ENERGIE AG

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

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

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

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

Ralf Eisenhauer
Construction and Project Manager at
MWS Projektentwicklungs-gesellschaft mbH, Mannheim

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

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

Gabriele Gröschl-Bahr [1]
Member of Federal Executive Board of ver.di
(since 1 October 2019)

Dieter Hassel
Member of Executive Board of RheinEnergie AG, Cologne

Barbara Hoffmann
Auditor, Tax Advisor

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

Brigitte Kemmer
Tax Advisor

Dr. Antje Mohr [1]
Trade Union Secretary at ver.di Kiel
(until 30 September 2019)

Dr. Lorenz Näger
Member of Executive Board of HeidelbergCement AG

Steffen Ratzel
Managing Director of BKV-Bäder- und Kurverwaltung
Baden-Württemberg, Anstalt des öffentlichen Rechts,
Baden-Baden

Peter Sattler [1]
Facility Management Officer at MVV Energie AG
(until 30 September 2019)

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

Christian Specht
First Mayor of City of Mannheim

Katja Udluft [1]
Trade Union Secretary at ver.di Rhine-Neckar
(until 30 June 2019)

Prof. Heinz-Werner Ufer
Graduate in Economics

Susanne Wenz [1]
Deputy State Regional Director at
ver.di Baden-Württemberg
(since 11 July 2019)

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

Positions held by Executive and Supervisory Board members on supervisory boards or comparable supervisory bodies are listed in detail on the following pages.

1 Employee representative

MEMBERS OF SUPERVISORY BOARD COMMITTEES AT MVV ENERGIE AG

Committee	Name
Audit Committee	• Prof. Heinz-Werner Ufer (Chairman) • Heike Kamradt (Deputy Chairman) • Peter Erni • Detlef Falk • Dr. Lorenz Näger • Steffen Ratzel (until 31 December 2018) • Christian Specht (since 1 January 2019)
Personnel Committee	• Dr. Peter Kurz (Chairman) • Heike Kamradt (Deputy Chairman) • Ralf Eisenhauer • Peter Erni • Steffen Ratzel • Jürgen Wiesner
Nomination Committee	• Dr. Peter Kurz (Chairman) • Ralf Eisenhauer • Barbara Hoffmann • Steffen Ratzel • Prof. Heinz-Werner Ufer
Mediation Committee	• Dr. Peter Kurz (Chairman) • Heike Kamradt • Steffen Ratzel • Jürgen Wiesner
New Authorised Capital Creation Committee	• Dr. Peter Kurz (Chairman) • Ralf Eisenhauer • Peter Erni • Dieter Hassel • Heike Kamradt • Steffen Ratzel • Christian Specht • Prof. Heinz-Werner Ufer

MEMBERS OF EXECUTIVE BOARD OF MVV ENERGIE AG

Name	Positions held on other statutory supervisory boards of German companies	Membership of comparable German and foreign company supervisory boards
Dr. Georg Müller	• Energieversorgung Offenbach AG, Offenbach (Chairman) • Grosskraftwerk Mannheim AG, Mannheim • Juwi AG, Wörrstadt (Chairman) • MVV Enamic GmbH, Mannheim (Deputy Chairman) • MVV Insurance Services GmbH, Mannheim (Chairman) • MVV Trading GmbH, Mannheim • MVV Umwelt GmbH, Mannheim • Saarschmiede GmbH, Völklingen • Stadtwerke Kiel AG, Kiel (Chairman)	
Verena Amann (since 1 August 2019)	• MVV Enamic GmbH, Mannheim (since 1 August 2019)	
Ralf Klöpfer	• Energieversorgung Offenbach AG, Offenbach • IDOS Software AG, Karlsruhe • Juwi AG, Wörrstadt • MVV Enamic GmbH, Mannheim (Chairman) • MVV Trading GmbH, Mannheim (Chairman) • Stadtwerke Ingolstadt Beteiligungen GmbH, Ingolstadt (Deputy Chairman) • Stadtwerke Kiel AG, Kiel	• BEEGY GmbH, Mannheim (Chairman) • MVV Energie CZ a.s., Prague, Czech Republic (Chairman) • Qivalo GmbH, Mannheim (Deputy Chairman) • Soluvia GmbH, Mannheim • Stadtmarketing Mannheim GmbH, Mannheim
Dr. Hansjörg Roll	• Energieversorgung Offenbach AG, Offenbach • Grosskraftwerk Mannheim AG, Mannheim (Chairman) • Juwi AG, Wörrstadt • MVV Netze GmbH, Mannheim (Chairman) • MVV Umwelt GmbH, Mannheim (Chairman) • Stadtwerke Kiel AG, Kiel	• MVV Energie CZ a.s., Prague, Czech Republic • Soluvia GmbH, Mannheim (Chairman)

MEMBERS OF SUPERVISORY BOARD OF MVV ENERGIE AG

Name **Occupation**	**Positions held on other statutory supervisory boards of German companies**	**Membership of comparable German and foreign company supervisory boards**
Dr. Peter Kurz (Chairman) Lord High Mayor of City of Mannheim	• Universitätsklinikum Mannheim GmbH, Mannheim (Chairman)	• GBG Mannheimer Wohnungsbau gesellschaft mbH, Mannheim (Chairman) • mg: mannheimer gründungszentren gmbh, Mannheim (Chairman) • MKB Mannheimer Kommunal-Beteiligungen GmbH, Mannheim (Chairman) • MWS Projektentwicklungsgesellschaft mbH, Mannheim (Chairman) • Popakademie Baden-Württemberg GmbH, Mannheim (until 31 January 2019) • Sparkasse Rhein Neckar Nord, Mannheim (Chairman) • Stadtmarketing Mannheim GmbH, Mannheim
Heike Kamradt (Deputy Chairman) Chairman of Group Works Council	• MVV Enamic GmbH, Mannheim • MVV Insurance Services GmbH, Mannheim • MVV Netze GmbH, Mannheim • MVV Trading GmbH, Mannheim • MVV Umwelt GmbH, Mannheim	• Soluvia Energy Services GmbH, Offenbach (since 3 July 2019)
Johannes Böttcher Chairman of Works Council of Energieversorgung Offenbach AG	• Energieversorgung Offenbach AG, Offenbach (Deputy Chairman)	
Timo Carstensen Deputy Chairman of Works Council of Stadtwerke Kiel AG	• Stadtwerke Kiel AG, Kiel	
Ralf Eisenhauer Construction and Project Manager at MWS Projektentwicklungsgesellschaft mbH, Mannheim	• Rhein-Neckar-Verkehr GmbH, Mannheim (since 23 July 2019)	• Sparkasse Rhein Neckar Nord, Mannheim • Stadtmarketing Mannheim GmbH, Mannheim (until 23 July 2019)
Peter Erni Trade Union Secretary at ver.di Rhein-Neckar		
Detlef Falk Chairman of Works Council of Stadtwerke Kiel AG	• Stadtwerke Kiel AG, Kiel	• Soluvia GmbH, Mannheim • Soluvia Energy Services GmbH, Offenbach (since 3 July 2019) • Soluvia IT-Services GmbH, Kiel (since 15 May 2019)

Name Occupation	Positions held on other statutory supervisory boards of German companies	Membership of comparable German and foreign company supervisory boards
Gabriele Gröschl-Bahr Member of Federal Executive Board of ver.di (since 1 October 2019)		• Supervisory Board of Federal and State Government Employees Retirement Fund (VBL), Karlsruhe (Chairman) • Board of Directors of Federal Employment Agency, Nuremberg
Dieter Hassel Member of Executive Board of RheinEnergie AG, Cologne	• BRUNATA-METRONA GmbH, Hürth • NetCologne Gesellschaft für Telekommunikation mbH, Cologne	• Agger Energie GmbH, Gummersbach • BELKAW GmbH, Bergisch Gladbach (Deputy Chairman) • Energieversorgung Leverkusen GmbH & Co. KG, Leverkusen • Gasversorgungsgesellschaft mbH, Rhein-Erft, Hürth • Rheinische NETZGesellschaft mbH, Cologne • Stadtwerke Leichlingen GmbH, Leichlingen (Deputy Chairman) • Stadtwerke Lohmar GmbH & Co. KG, Lohmar
Barbara Hoffmann Auditor, Tax Advisor		• Berliner Stadtreinigungsbetriebe, Anstalt des öffentlichen Rechts, Berlin
Prof. Dr. Heidrun Kämper Academic Employee at Insititut für Deutsche Sprache, Mannheim		• M:con – mannheim:congress GmbH, Mannheim (until 23 July 2019) • Stadt Mannheim Beteiligungs GmbH, Mannheim (until 23 July 2019) • MWS Projektentwicklungsgesellschaft mbH, Mannheim (until 23 July 2019)
Brigitte Kemmer Tax Advisor		
Dr. Antje Mohr Trade Union Secretary at ver.di Kiel (until 30 September 2019)	• Stadtwerke Kiel AG, Kiel	

Name Occupation	Positions held on other statutory supervisory boards of German companies	Membership of comparable German and foreign company supervisory boards
Dr. Lorenz Näger Member of Executive Board of Heidelberg Cement AG	• PHÖNIX Pharma SE, Mannheim	• Castle Cement Limited, Maidenhead, UK • Cimenteries CBR S.A., Brussels, Belgium • ENCI Holding N.V. ‚s-Hertogenbosch, Netherlands • Hanson Limited, Maidenhead, UK • Hanson Pioneer España, S.L.U., Madrid, Spain • HeidelbergCement Canada Holding Limited, Maidenhead, UK • HeidelbergCement Holding S.à.r.l., Luxembourg • HeidelbergCement UK Holding Lim-ited, Maidenhead, UK • HeidelbergCement UK Holding II Limited, Maidenhead, UK • Italcementi Fabbriche Riunite Cemento S.p.A., Bergamo, Italy • Lehigh B.V., ‘s-Hertogenbosch, Netherlands (Chairman) • Lehigh Hanson, Inc., Irving, TX, USA • Lehigh Hanson, Inc. Materials Limited, Calgary, Canada • Lehigh UK Limited, Maidenhead, UK • PHOENIX Pharmahandel GmbH & Co. KG, Mannheim, Germany • PT Indocement Tunggal Prakarsa Tbk., Jakarta, Indonesia
Steffen Ratzel Managing Director of BKV-Bäder- und Kurverwaltung Baden-Württemberg, Anstalt des öffentlichen Rechts, Baden-Baden		• Rhein-Neckar Flugplatz GmbH, Mannheim (until 23 July 2019) • Gemeinschaftskraftwerk Baden-Baden GmbH, Baden-Baden • Staatsbad Wildbad – Bäder- und Kur-betriebgesellschaft mbH, Bad Wildbad • Badenweiler Thermen und Touristi-kGmbH, Badenweiler
Peter Sattler Facility Management Officer at MVV Energie AG (until 30 September 2019)	• MVV Insurance Services GmbH, Mannheim (until 14 December 2018)	

Name Occupation	Positions held on other statutory supervisory boards of German companies	Membership of comparable German and foreign company supervisory boards
Bernhard Schumacher Head of Smart Cities Division at MVV Energie AG		• AVR Biogas GmbH, Sinsheim (Deputy Chairman) (until 30 June 2019) • Management Stadtwerke Buchen GmbH, Buchen (Deputy Chairman) • Stadtwerke Schwetzingen Verwaltung-sgesellschaft mbH, Schwetzingen • Stadtwerke Walldorf GmbH & Co. KG, Walldorf
Christian Specht First Mayor of City of Mannheim	• Universitätsklinikum Mannheim GmbH, Mannheim • Rhein-Neckar-Verkehr GmbH, Mannheim	• Verkehrsverbund Rhein-Neckar GmbH (VRN), Mannheim (Chairman) • MKB Mannheimer Kommunal-Beteiligungen GmbH, Mannheim (Chairman) (since 4 July 2019) • MV Verkehr GmbH, Mannheim (Chairman)
Katja Udluft Trade Union Secretary at ver.di Rhein-Neckar (until 30 June 2019)		
Prof. Heinz-Werner Ufer Graduate in Economics	• Amprion GmbH, Dortmund (Chairman)	
Susanne Wenz Deputy State Regional Director at ver.di Baden-Württemberg (since 11 July 2019)	• Bausparkasse Schwäbisch Hall AG, Schwäbisch Hall	• PSD Bank Karlsruhe-Neustadt eG, Karlsruhe
Jürgen Wiesner Chairman of Works Council of MVV Energie AG	• MVV Enamic GmbH, Mannheim • MVV Trading GmbH, Mannheim • MVV Umwelt GmbH, Mannheim	• Soluvia GmbH, Mannheim • Soluvia IT-Services GmbH, Kiel (since 15 May 2019)

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 2019, the consolidated income statement, statement of comprehensive income, consolidated statement of changes in equity and consolidated cash flow statement for the financial year from 1 October 2018 to 30 September 2019, and notes to the consolidated financial statements, including a summary of significant accounting policies. In addition, we have audited the group management report of MVV Energie AG, which is combined with the Company's management report, for the financial year from 1 October 2018 to 30 September 2019. We have not audited the content of those parts of the group management report listed in the "Other information" section of our auditor's report in accordance with German legal requirements.

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

- the accompanying consolidated 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 2019, and of its financial performance for the financial year from 1 October 2018 to 30 September 2019, and
- the accompanying group management report as a whole provides an appropriate view of the Group's position. In all material respects, this group management report is consistent with the consolidated financial statements, complies with German legal requirements and appropriately presents the opportunities and risks of future development. Our audit opinion on the group management report does not cover the content of those parts of the group management report listed in the "Other information" section of our auditor's report.

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

Basis for the audit opinions

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

Key audit matters in the audit of the consolidated financial statements

Key audit matters are those matters that, in our professional judgment, were of most significance in our audit of the consolidated financial statements for the financial year from 1 October 2018 to 30 September 2019. These matters were addressed in the context of our audit of the consolidated financial statements as a whole, and in forming our audit opinion thereon; we do not provide a separate audit opinion on these matters.

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

❶ **Recoverability of goodwill**
❷ **Accounting treatment of energy trading transactions**

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

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

Hereinafter we present the key audit matters:

❶ **Recoverability of goodwill**

① Goodwill amounting in total to € 209 million is reported under the "Intangible assets" balance sheet item in the consolidated financial statements of MVV Energie AG. Goodwill is tested for impairment by the Company once a year or when there are indications of impairment to determine any possible need for write-downs. The impairment test is carried out at the level of the groups of cash-generating units to which the relevant goodwill is allocated. The carrying amount of the relevant cash-generating units, including goodwill, is compared with the corresponding recoverable amount in the context of the impairment test. The recoverable amount is generally determined using the value in use. The present value of the future cash flows from the respective group of cash-generating units normally serves as the basis of valuation. Present values are calculated using discounted cash flow models. For this purpose, the adopted medium-term business plan of the Group forms the starting point which is extrapolated based on assumptions about long-term rates of growth. Expectations relating to future market developments and assumptions about the development of macroeconomic factors are also taken into account. The discount rate used is the weighted average cost of capital for the respective group of cash-generating units. The impairment tests did not result in the identification of any impairment requirements.

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

② As part of our audit, we assessed the methodology used for the purposes of performing the impairment test, among other things. After matching the future cash inflows used for the calculation against the adopted medium-term business plan of the Group, we assessed the appropriateness of the calculation, in particular by reconciling it with general and sector-specific market expectations. In addition, we assessed the appropriate consideration of the costs of Group functions. In the knowledge that even relatively small changes in the discount rate applied can have a material impact on the value of the entity calculated in this way, we also focused our testing on the parameters used to determine the discount rate applied, and assessed the calculation model. In order to reflect the uncertainty inherent in the projections, we evaluated the sensitivity analyses performed by the Company. Overall, the valuation parameters and assumptions used by the executive directors are in line with our expectations and are also within the ranges considered by us to be reasonable.

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

❷ Accounting treatment of energy trading transactions
① Within the MVV Energie AG Group, the consolidated subsidiary MVV Trading GmbH has primary responsibility for the procurement of energy and emission rights and for hedging energy price risks for the Group companies MVV Energie AG, Stadtwerke Kiel AG, Energieversorgung Offenbach AG and Stadtwerke Ingolstadt GmbH. MVV Trading GmbH trades to a large extent on the spot and futures market for electricity, gas and emission rights on stock exchanges and on the over-the-counter market for these purposes. These contracts are classified as derivative financial instruments in accordance with IFRS 9, which are either accounted for at fair value through profit or loss (classified as financial assets or liabilities measured at fair value through profit or loss) or as pending transactions if the underlying for the derivative financial instruments will be received or delivered in future as part of the Company's own expected purchase, sale or usage requirements ("own use exception"). The accounting treatment for physically settled derivative financial instruments is determined with the aid of the risk management system of MVV Trading GmbH, which allocated these derivative financial instruments to their corresponding purpose and therefore to the appropriate accounting treatment from a Group perspective. Accordingly, physically settled derivative financial instruments that do not form part of the Group's own expected purchase, sale or usage requirements and all financially settled derivative financial instruments are measured at fair value through profit or loss. To some extent these derivative financial instruments for electricity, gas and emission rights are included as hedging instruments in the hedge accounting in accordance with IFRS 9 as so-called hedged cash flows. The underlying transactions are the purchase respectively the sale of electricity, gas and emission rights at variable prices within maximum four years.

The energy trading operations are supported by energy trading systems. These systems handle the process chain from the recording of trading transactions to the calculation and measurement of positions and the confirmation of trading transactions, as well as risk management. In view of the high volume of trading and the complexity of accounting for derivatives in accordance with IFRS 9 and IFRS 13, respectively, as well as its significant effects on the assets, liabilities, financial position and financial performance, this business area is of particular significance for the consolidated financial statements and the conduct of our audit.

② As part of our audit, among other things, we assessed the appropriateness of the internal control system established for the purpose of entering into and settling energy trading transactions, including the trading system used for this purpose. As part of our audit of the internal control system, we also evaluated the effectiveness of the controls established by the Company on a sample basis. We analysed the methodology for determining the fair values of the derivative instruments with respect to compliance with IFRS 13 and carried out an appraisal using our own valuations on a sample basis. With respect to the accounting treatment of the derivatives in accordance with IFRS 9, we evaluated the application of the own use exception for physically settled derivative financial instruments using the process implemented within the Group – from the submission of orders by the consolidated subsidiaries to MVV Trading GmbH to the processing of the data by MVV Trading GmbH – and satisfied ourselves that the own use exception is applied correctly on the basis of a random sample. We assessed the recognition of cash flow hedges and their accounting. Among other aspects, we evaluated the process used to assess the necessary effectiveness of the cash flow hedges and the correctness of the corresponding amounts recognised in equity as well as the reclassified amounts within the consolidated income statement. In our view, the accounting policies applied by the executive directors and the methodology for accounting for energy trading transactions are appropriate overall.

③ The Company's disclosures relating to energy trading and its effects on the consolidated financial statements are contained in section "35 Financial instruments" in the notes to the consolidated financial statements.

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

- the statement on corporate governance pursuant to § 289f HGB and § 315d HGB included in the "Corporate Governance" section of the group management report
- the corporate governance report pursuant to No. 3.10 of the German Corporate Governance Code
- the non-financial declaration contained in the "Combined Non-Financial Declaration" section of the group management report pursuant to § 289b Abs. 1 HGB and § 315b Abs. 1 HGB

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

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

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

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

Responsibilities of the Executive Directors and the Supervisory Board for the consolidated financial statements and the group management report

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

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

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

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

Auditor's responsibilities for the audit of the consolidated financial statements and of the group management report

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

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

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

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

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

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

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

- Evaluate the overall presentation, structure and content of the consolidated financial statements, including the disclosures, and whether the consolidated financial statements present the underlying transactions and events in a manner that the consolidated financial statements give a true and fair view of the assets, liabilities, financial position and financial performance of the Group in compliance with 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 communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, the related safeguards.

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

OTHER LEGAL AND REGULATORY REQUIREMENTS

Further information pursuant to Article 10 of the EU Audit Regulation

We were elected as group auditor by the annual general meeting on 8 March 2019. We were engaged by the supervisory board on 27 September 2019. We have been the group auditor of MVV Energie AG, Mannheim, without interruption since the financial year 2008/09.

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

GERMAN PUBLIC AUDITOR RESPONSIBLE FOR THE ENGAGEMENT

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

Essen, 12 November 2019

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") compiled pursuant to § (Article) 289 Abs. (paragraph) 1 and § 315b Abs. 1 HGB ("Handelsgesetzbuch": "German Commercial Code") for the period from 1 October 2018 to 30 September 2019 and included in the "Combined Non-Financial Declaration" section of the combined management report (hereinafter the "Non-Financial Declaration").

Responsibilities of executive directors

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

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

Independence and quality control of the audit firm

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

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

Practitioner's responsibility

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

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

We conducted our assurance engagement in accordance with the International Standard on Assurance Engagements (ISAE) 3000 (Revised): Assurance Engagements other than Audits or Reviews of Historical Financial Information, issued by the IAASB. This Standard requires that we plan and perform the assurance engagement to allow us to conclude with limited assurance that nothing has come to our attention that causes us to believe that the Company's Non-Financial Declaration for the period from 1 October 2018 to 30 September 2019 has not been prepared, in all material aspects, in accordance with § 315c in conjunction with § 289c to § 289e HGB. In a limited assurance engagement the assurance procedures are less in extent than for a reasonable assurance engagement, and therefore a substantially lower level of assurance is obtained. The assurance procedures selected depend on the practitioner's judgment.

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

- Obtaining an understanding of the structure of the sustainability organisation and of stakeholder engagement
- Enquiries of personnel involved in the preparation of the Non-Financial Declaration regarding the preparation process, the internal control system relating to this process and select disclosures in the Non-Financial Declaration
- Identification of the likely risks of material misstatement of the Non-Financial Declaration
- Analytical evaluation of disclosures in the Non-Financial Declaration
- Comparison of disclosures with corresponding data in the consolidated financial statements and in the group management report
- Evaluation of the presentation of the non-financial information

Assurance conclusion

Based on the assurance procedures performed and assurance evidence obtained, nothing has come to our attention that causes us to believe that the Company's Non-Financial Declaration for the period from 1 October 2018 to 30 September 2019 has not been prepared, in all material aspects, in accordance with § 315c in conjunction with § 289c to § 289e HGB.

Intended use of the assurance report

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

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

Munich, 12 November 2019

PricewaterhouseCoopers GmbH

Wirtschaftsprüfungsgesellschaft

Hendrik Fink
Wirtschaftsprüfer
[German Public Auditor]

ppa. Axel Faupel

Ten-Year Overview

Ten-year overview

	FY 2019[1,2]	FY 2018[1,2]	FY 2017[1,2]	FY 2016[1,2]	FY 2015[1,2]	FY 2014[2]	FY 2013[2]	FY 2012[2]	FY 2011[2]	FY 2010[2]
Income statement (Euro million)										
Adjusted sales excluding energy taxes	3,683	3,903	4,010	4,066	3,422	3,717[1]	4,044	3,895	3,600	3,359
Adjusted EBITDA	409	443	407	425	336	330[1]	376	399	404	406
Adjusted EBIT	225	228	224	213	175	170[1]	208	223	242	243
Adjusted EBT	168	179	169	139	132	127[1]	143	151	179	165
Adjusted annual net income	115	111	107	98	92	93[1]	101	98	125	105
Adjusted annual net income after minority interests	98	94	93	95	75	86[1]	85	80	108	95
Balance sheet figures (Euro million)										
Non-current assets	3,464	3,493	3,326	3,586	3,513	3,056[1]	3,032	2,868	2,965	2,684
Current assets	1,358	1,647	1,387	1,418	1,071	1,015[1]	1,207	1,211	910	953
Share capital	169	169	169	169	169	169	169	169	169	169
Capital reserve	455	455	455	455	455	455	455	455	455	455
Accumulated net income	768	777	705	641	594	579[1]	547	517	512	452
Accumulated other comprehensive income	– 72	– 21	– 57	– 81	– 107	– 73	– 74	– 48	– 3	16
Non-controlling interests	215	245	249	243	203	206[1]	206	207	213	95
Equity	1,535	1,625	1,521	1,427	1,314	1,336[1]	1,303	1,300	1,346	1,187
Non-current debt	2,109	1,922	1,976	2,080	2,211	1,710[1]	1,751	1,882	1,555	1,500
Current debt	1,178	1,593	1,216	1,497	1,059	1,025[1]	1,185	897	974	950
Total assets	4,822	5,140	4,713	5,004	4,584	4,071[1]	4,239	4,079	3,875	3,637
Net financial debt [3]	1,345	1,075	1,077	1,283	1,341	1,063[1]	1,111	1,028	1,011	1,202
Key balance sheet figures and ratios										
Cash flow from operating activities (Euro million)	238	331	474	274	255	407[1]	372	285	376	356
Adjusted equity ratio [4] (%)	34.5	37.3	35.1	33.0	33.8	35.7[1]	34.5	36.1	37.7	35.7
ROCE [5] (%)	7.9	8.5	8.2	7.6	6.6	6.7[1]	8.3	9.0	9.7	9.1
WACC [6] (%)	6.3	6.3	6.1	6.4	6.4	7.4	7.4	8.6	8.5	8.5
Value spread [7] (%)	1.6	2.2	2.1	1.2	0.2	– 0.7[1]	0.9	0.4	1.2	0.6
Capital employed [8] (Euro million)	2,847	2,674	2,734	2,806	2,660	2,527[1]	2,507	2,486	2,489	2,688

1 Since 2015 financial year: Ingolstadt subgroup no longer recognised proportionately, but included in consolidated financial statements at equity (figures for 2014 financial year adjusted)
2 Since 2010 financial year: excluding non-operating measurement items for financial derivatives and excluding restructuring result; since 2011 financial year: also including interest income from finance leases; since 2013 financial year: also excluding structural adjustment for part-time early retirement
3 Non-current and current financial debt less cash and cash equivalents
4 Adjusted equity as percentage of adjusted total assets
5 Return on capital employed: adjusted EBIT as percentage of capital employed
6 Weighted average cost of capital
7 Value spread (ROCE less WACC)
8 Until 2010 financial year: adjusted equity plus financial debt plus provisions for pensions and similar obligations plus accumulated goodwill amortisation (calculated as annual average); since 2011 financial year: adjusted equity plus financial debt plus provisions for pensions and similar obligations less cash and cash equivalents (calculated as annual average)

Ten-year overview

	FY 2019[1,2]	FY 2018[1,2]	FY 2017[1,2]	FY 2016[1,2]	FY 2015[1,2]	FY 2014[2]	FY 2013[2]	FY 2012[2]	FY 2011[2]	FY 2010[2]
Share and dividend										
Closing price at 30 September [3] (Euro)	26.50	26.30	22.85	19.90	21.15	23.89	22.35	21.39	23.86	29.00
Annual high [3] (Euro)	26.70	26.80	24.15	22.00	26.20	26.05	28.00	27.96	29.90	33.00
Annual low [3] (Euro)	23.80	22.94	19.90	19.30	20.26	21.85	20.50	19.50	18.85	29.00
Market capitalisation at 30 September (Euro million)	1,747	1,733	1,506	1,312	1,394	1,575	1,473	1,410	1,573	1,911
Average daily trading volume (no. of shares)	1,745	3,307	8,313	5,630	4,233	2,882	4,121	6,707	8,431	6,108
No. of individual shares at 30 September (000s)	65,907	65,907	65,907	65,907	65,907	65,907	65,907	65,907	65,907	65,907
No. of shares with dividend entitlement (000s)	65,907	65,907	65,907	65,907	65,907	65,907	65,907	65,907	65,907	65,907
Dividend per share (Euro)	0,90[4]	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Dividend total (Euro million)	59,3[4]	59.3	59.3	59.3	59.3	59.3	59.3	59.3	59.3	59.3
Adjusted earnings per share [5] (Euro)	1.49	1.43	1.41	1.45	1.14	1.30[1]	1.29	1.21	1.63	1.44
Cash flow from operating activities per share [5] (Euro)	3.60	5.03	7.19	4.16	3.86	6.18[1]	5.64	4.33	5.70	5.40
Adjusted carrying amount per share [5,6,7] (Euro)	20.11	19.71	18.88	18.36	17.73	18.03[1]	17.89	17.80	17.61	16.94
Price/earnings ratio [5,8]	17.8	18.4	16.2	13.7	18.6	18.4[1]	17.3	17.7	14.6	20.1
Price/cash flow ratio [5,8]	7.4	5.2	3.2	4.8	5.5	3.9[1]	4.0	4.9	4.2	5.4
Dividend yield [8] (%)	3,4[4]	3.4	3.9	4.5	4.3	3.8	4.0	4.2	3.8	3.1
Investments (Euro million)	310	290	194	236	470	310[1]	392	294	281	267
Number of employees at 30 September (headcount)										
MVV	6,113	5,978	6,062	6,174	5,308	5,166[1]	5,459	5,541	5,919	6,059
of which in Germany	5,232	5,137	5,227	5,328	4,676	4,561[1]	4,900	4,900	5,278	5,444
of which abroad	881	841	835	846	632	605	559	641	641	615
Full-time equivalents at 30 September	5,543	5,408	5,487	5,575	4,828	4,688[1]	4,785	4,898	5,085	5,181
Sales volumes										
Electricity turnover (kWh million)	20,246	23,556	26,293	21,797	20,823	23,207[1]	25,817	28,283	26,093	23,891
Heating energy turnover (kWh million)	6,286	6,598	6,917	6,716	6,995	6,292[1]	7,510	6,888	7,289	7,586
Gas turnover (kWh million)	25,719	21,209	25,190	28,270	27,410	22,517[1]	25,078	17,418	10,888	11,775
Water turnover (m^3 million)	41	41	40	41	46	47	47	53	54	54
Combustible waste delivered (tonnes 000s)	2,300	2,328	2,291	2,306	2,041	1,940	1,888	1,897	1,835	1,762

1 Since 2015 financial year: Ingolstadt subgroup no longer recognised proportionately, but included in consolidated financial statements at equity (figures for 2014 financial year adjusted)
2 Since 2010 financial year: excluding non-operating measurement item for financial derivatives and excluding restructuring result; since 2011 financial year: also including interest income from finance leases; since 2013 financial year: excluding structural adjustment for part-time early retirement
3 Xetra trading
4 Pending approval by Annual General Meeting on 13 March 2020
5 Weighted average number of shares: 65,906,796
6 Excluding minority interests, weighted annual average number of shares
7 Excluding non-operating measurement items for financial derivatives
8 Basis: closing price in XETRA trading at 30 September

Financial Calendar

10 December 2019

Annual Report
2019 Financial Year

10 December 2019

Annual Results Press Conference and Analysts Conference
2019 Financial Year

14 February 2020

3M Quarterly Statement
2020 Financial Year

13 March 2020

Annual General Meeting

13 May 2020

H1 Interim Report
2020 Financial Year

14 August 2020

9M Quarterly Statement
2020 Financial Year

10 December 2020

Annual Report
2020 Financial Year

10 December 2020

Annual Results Press Conference and Analysts Conference
2020 Financial Year

The dates of conference calls to be held with analysts during the financial year will be announced in good time.

Imprint/Contact

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All of MVV’s financial reports can be downloaded from our websites. www.mvv.de/investors

This Annual Report has been translated into English. Only the original German version is legaly binding.

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