

Integrated Annual Report 2018

Excluding the notes and the declaration of corporate management

E-MOTION

EnBW at a glance

5.5 million customers

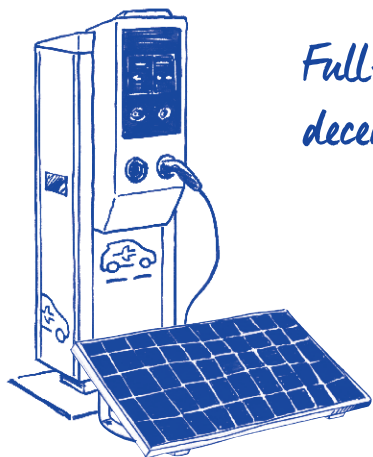
B2C and B2B 2018

Adjusted EBITDA in 2018

12.5%
€270.6 million



Full-service provider of
decentralised energy solutions

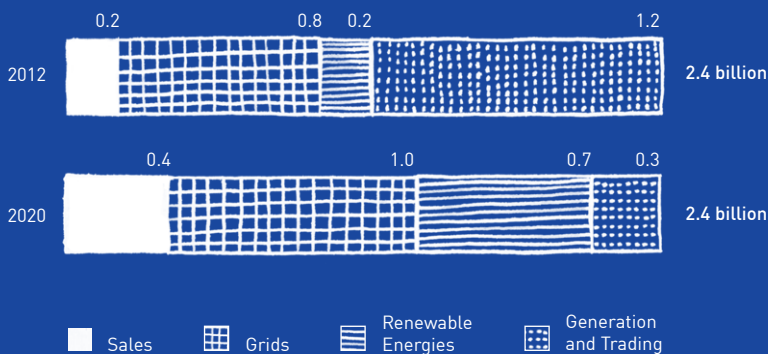


€2.2 billion

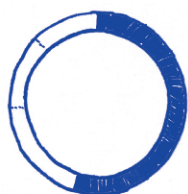
Adjusted EBITDA in 2018

Strategic repositioning of the company

Adjusted EBITDA 2012/2020



Adjusted EBITDA in 2018



54.5%
€1,176.9 million

4x around the world

Length of our electricity grid: 151,000 km

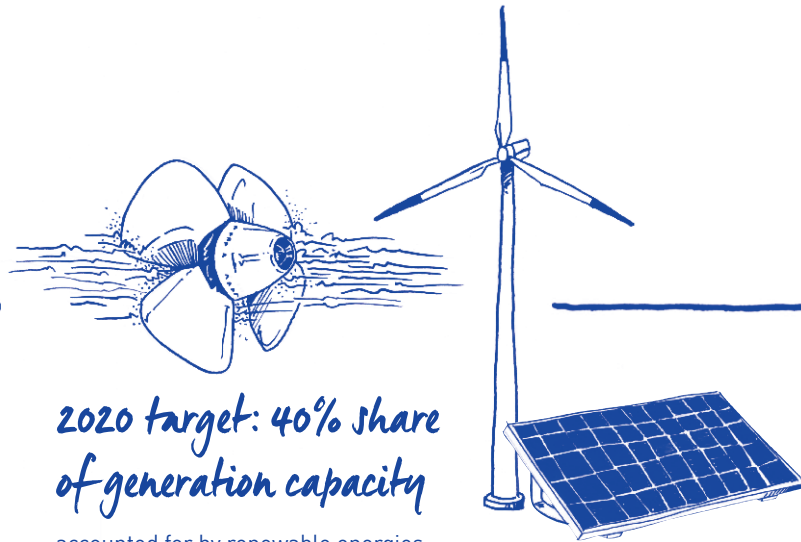
0.5x around the world

Length of our gas grid: 24,000 km

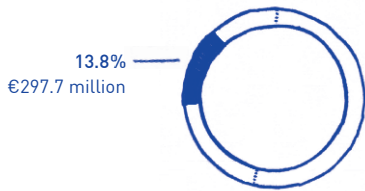
€967.4 million

Investment in 2018





Adjusted EBITDA in 2018



2020 target: 40% share
of generation capacity

accounted for by renewable energies

€476.0 million

Investment in 2018

Renewable Energies

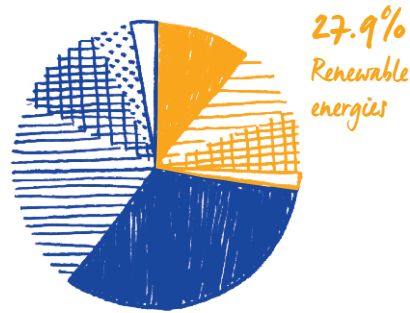
What sets us apart

- Active along the entire value added chain
- Stable shareholder structure
- All financial ratings in the A-grade range
- Leading position on important sustainability ratings for the energy sector
- Integrated reporting since 2014
- Cultural change
- Evolving from an energy supplier to an infrastructure partner



Generation mix

Installed output in MW 2018



Renewable energies

Pumped storage (natural flow of water)	1,507
Wind	1,054
Run-of-river	1,006
Other	171

Thermal power plants

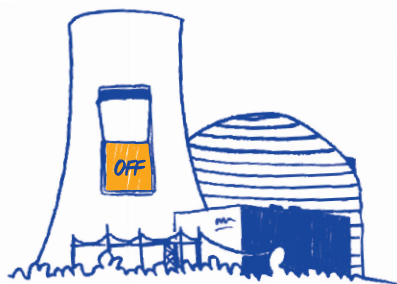
Brown and hard coal	4,366
Nuclear power plants	2,933
Gas	1,468
Pumped storage	545
Other	349

EnBW at a glance

Generation and Trading

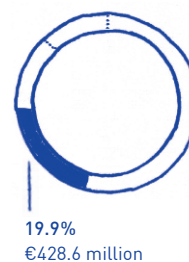
Almost
40% fewer

CO₂-intensive power plants
since 2012



Phasing out of nuclear energy: 2022

Adjusted EBITDA in 2018



Performance indicators of the EnBW Group

Financial and strategic performance indicators

in € million	2018	2017	Change in %
External revenue	20,617.5	21,974.0	-6.2
TOP Adjusted EBITDA	2,157.5	2,113.0	2.1
TOP Share of adjusted EBITDA accounted for by Sales in € million/in %	270.6/12.5	330.0/15.6	-18.0/-
TOP Share of adjusted EBITDA accounted for by Grids in € million/in %	1,176.9/54.5	1,045.9/49.5	12.5/-
TOP Share of adjusted EBITDA accounted for by Renewable Energies in € million/in %	297.7/13.8	331.7/15.7	-10.3/-
TOP Share of adjusted EBITDA accounted for by Generation and Trading in € million/in %	428.6/19.9	377.1/17.8	13.7/-
Share of adjusted EBITDA accounted for by Other/Consolidation in € million/in %	-16.3/-0.7	28.3/1.4	-/-
EBITDA	2,089.6	3,752.4	-44.3
Adjusted EBIT	957.5	998.8	-4.1
EBIT	875.8	2,504.0	-65.0
Adjusted Group net profit ¹	438.3	793.3	-44.7
Group net profit ¹	334.2	2,054.1	-83.7
Earnings per share from Group net profit in € ¹	1.23	7.58	-83.7
Retained cash flow	999.1	3,050.3	-67.2
TOP Internal financing capability in %	93.2	111.9	-16.7
Total investments	1,769.9	1,770.3	0.0
Net financial debt	3,738.4	2,917.8	28.1
Coverage ratio ALM in % ²	51.8	53.3	-
TOP Return on capital employed (ROCE) in % ²	6.5	7.3	-
Weighted average cost of capital before tax in %	6.3	6.3	-
Average capital employed ²	16,053.3	15,119.9	6.2
Value added ²	32.1	151.2	-78.8

Non-financial performance indicators

	2018	2017	Change in %
Customers and society goal dimension			
TOP Reputation Index	51.3	52.1	-1.5
TOP EnBW/Yello Customer Satisfaction Index	120/152	143/161	-16.1/-5.6
TOP SAIDI (electricity) in min./year	17	19	-10.5
Employees goal dimension			
TOP Employee Commitment Index (ECI) ³	62	60	3.3
TOP LTIF ⁴	2.3	3.0	-23.3
Environment goal dimension			
TOP Installed output of renewable energies (RE) in GW and the share of the generation capacity accounted for by RE in % ²	3.7/27.9	3.4/25.8	8.8/8.1
TOP CO ₂ intensity in g/kWh	553	556	-0.5

Employees of the EnBW Group ⁵

	31/12/2018	31/12/2017	Change in %
Employees	21,775	21,352	2.0
Full-time equivalents ⁶	20,379	19,939	2.2

¹ In relation to the profit/loss attributable to the shareholders of EnBW AG.

² The figures for the previous year have been restated.

³ Variations in the group of consolidated companies (consideration of companies controlled by the Group [without ITOs]).

⁴ Variations in the group of consolidated companies (consideration of all employees at those companies controlled by the Group, except external agency workers and contractors).

⁵ Number of employees excluding apprentices/trainees and inactive employees.

⁶ Converted into full-time equivalents.



*Dear Sir or Madam,
Dear Shareholders, Employees,
Partners and Friends of EnBW,*

The title of our Integrated Annual Report says it all: “E-motion” stands for electromobility, emotion and movement – and thus also for the transformation taking place at our company.

EnBW has been undergoing a profound process of change with a clear goal: we are evolving step by step from a conventional energy supplier into a partner for energy and infrastructure – a partner who relies on sustainability and innovative strength and one who works in an efficient, digital and customer-oriented manner.

We have made progress on this path together in the past year. We have further increased the share of our energy generation accounted for by renewable energies and also invested in new business fields that have a promising future. Fantastic opportunities are emerging as the process of digitalisation brings sectors such as transport and energy closer and closer together. Some examples of this are electromobility, the expansion of broadband infrastructure, and smart city and district development. This means that we are now rigorously transferring our core expertise – such as the safe and reliable operation of critical energy infrastructure – to neighbouring fields.

As a representative example of these still relatively new themes for EnBW, we are highlighting the opportunities and challenges in the area of electromobility in this report from a variety of different perspectives: Where does Germany stand with respect to this kind of technology compared with other countries? How do we at EnBW want to help e-mobility achieve the breakthrough? What expectations do customers have? And why are partnerships with other companies especially important in this area? You will find our answers to these and other questions on the following pages.

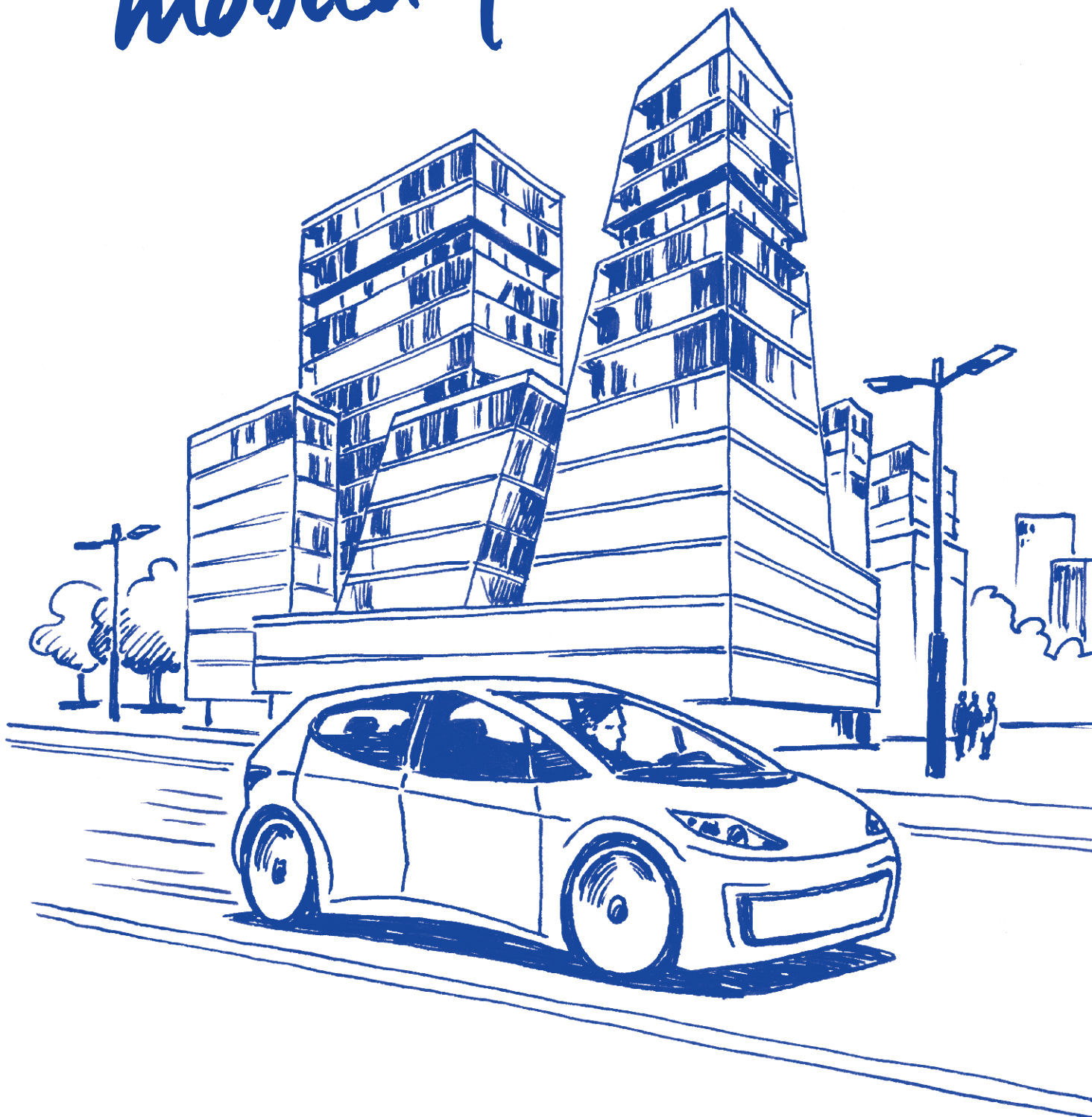
At the same time, this year's main theme will also convey part of our corporate culture. As you will see, we do what we do with passion and emotion. We want to help create something meaningful – after all every masterpiece starts with a single brush stroke. And we want to also leave our mark on the energy world of the future.

Yours sincerely,



Dr. Frank Mastiaux
Chairman of the Board of Management

The future of mobility is electric



There is no question that a dynamic global expansion in electromobility will make an important contribution to limiting global warming – especially if the electricity required is sourced from renewable energies. The progress made in this area varies in each individual country – depending on the political and economic framework conditions. Yet the way forward is clear:

More and more people will drive electric vehicles in future.



The European Union has decided, for example, that CO₂ emissions from new car fleets must be reduced by 35 percent by 2030. This can only be achieved if manufacturers invest more heavily in the production of electrically powered vehicles.

The task is clear but the challenge lies in the execution – which will by no means be a linear process.“ Things are developing very differently in each region and we cannot speak of a uniform global e-car market,” says Nicolai Müller, Senior Partner at McKinsey, who together with his

“We cannot speak of a uniform global e-car market.”

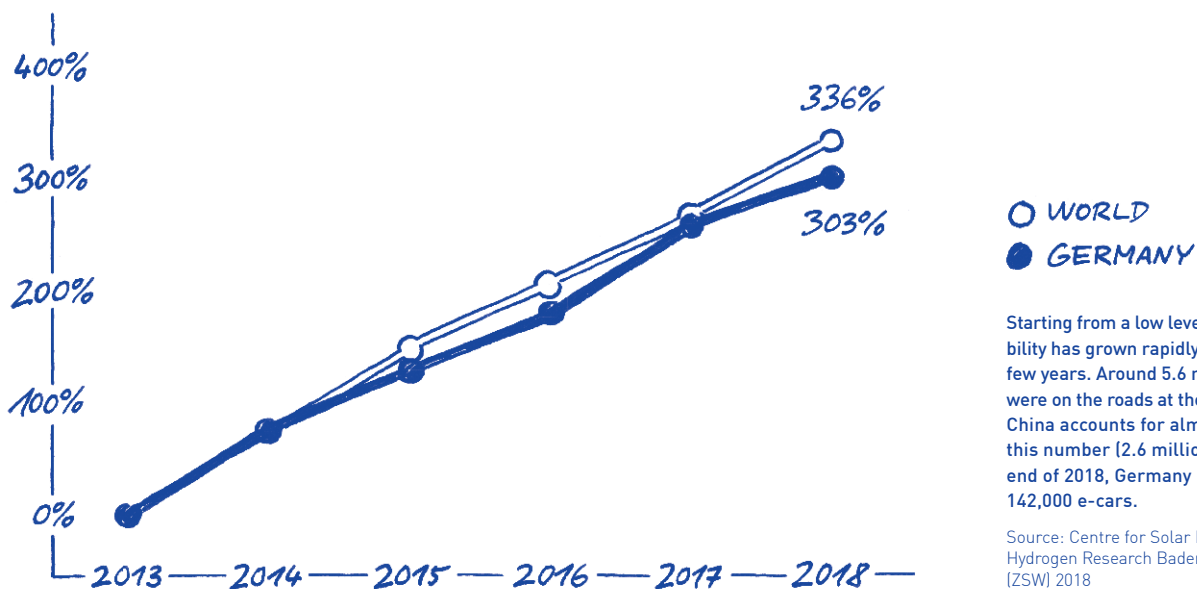
Nicolai Müller

team regularly measures the progress made in e-mobility in the 15 most important countries for this sector.

The fact is that electromobility is growing, but starting off from a low level. The global stock of electric cars had grown to 5.6 million at the end of 2018. In comparison to the previous year, this represents an increase of around 74 percent. In absolute terms, China sets the gold standard. A total of 1.2 million electric cars were sold in the country in 2018 – twice as many as in the previous year – which means that more than every second e-car in the world was registered in the Middle Kingdom. The demand for e-vehicles also increased significantly in the USA in 2018; there were 356,000 newly registered vehicles, which represented an increase of 84 percent. More than every second new e-car in the USA was registered in California. The west coast state has once again confirmed its status as a pioneer for e-mobility. The number of e-cars has also grown in Europe – although at varying rates.

An upward trend for e-cars

Growth in the number of electric cars
(Increase in percent)



Where are they being driven?

Share of newly registered vehicles accounted for by e-cars



More than half of all newly registered vehicles in Norway were electric cars in 2018. In comparison, electric vehicles only accounted for a modest 2 percent of the newly registered cars in Germany during the same period.

Source: Center of Automotive Management (CAM)



E-mobility has so far been a niche market in Germany. Yet the trend is clear: The number of e-cars is also increasing here at home.

0.5%

The share of the global vehicle stock accounted for by e-cars is still extremely small. This is set to change! [As of the end of 2018]

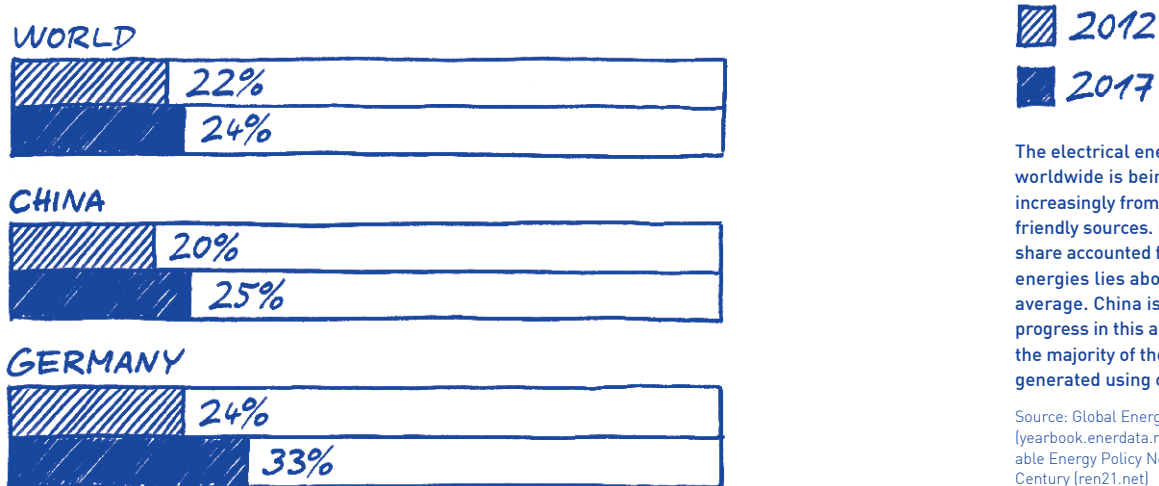
Although Germany has certainly made progress in the area of electromobility, it has been at a relatively moderate pace. Around 68,000 new e-cars were sold here in 2018. This represents growth of 26 percent compared to the previous year and makes Germany the second largest market in Europe after Norway. More than 86,000 e-cars were newly registered in the Scandinavian country in 2018 – which has a population of just 5 million people.

A quick glance at the share of the total market accounted for by e-vehicles shows how much road traffic is still dominated by cars with combustion engines. Or in other words, this highlights the huge potential offered by electromobility. The share of the global vehicle stock accounted for by electric vehicles still stood at just 0.5 percent at the end of 2018. The undisputed leader in terms of market share is Norway, where electric cars account for around 10 percent of the total number of vehicles.

The figures and the underlying framework conditions differ in each region. "Many factors vary from country to country, in some cases even from city to city: the size of the purchase subsidy, the charging infrastructure and the legal regulations all differ," explains Nicolai Müller, the expert from McKinsey.

Electricity is becoming "greener"

Share of gross electricity generation accounted for by renewable energies



The electrical energy generated worldwide is being produced increasingly from environmentally friendly sources. In Germany, the share accounted for by renewable energies lies above the global average. China is also making progress in this area, even though the majority of their energy is still generated using coal.

Source: Global Energy Statistical Yearbook (yearbook.enerdata.net), REN21 / Renewable Energy Policy Network for the 21st Century (ren21.net)

New technologies must have the right framework conditions: Targeted government funding is decisive for promoting e-mobility.

China is a good example: "China is setting the pace for e-mobility globally and is embracing this role with increasing intensity," says Prof. Dr. Stefan Bratzel, Director of the Center of Automotive Management (CAM). "Decisive factors in this strategy are industrial policies such as independence from oil imports and the targeted development of globally active car manufacturers with electrical expertise."

There is no other country in the world where e-mobility is promoted as strongly as in China, where around 40 percent of the purchase price for an e-car is subsidised. These vehicles can be registered easily, while a draw is held for permission to register standard cars with combustion engines. No wonder that the number of e-vehicles on China's streets is set to continue to rise dramatically – from the current figure of 2.6 million (end of 2018) to more than 5 million in 2020. In addition, there are plans to manufacture 5 million e-cars per year up to 2025. This would be equivalent to the current production capacities of all the German car factories combined. At the same time, considerable investment is being made into the associated infrastructure in China. There are plans to install a total of 4.8 million new charging points for e-cars in the country by 2020. China means business with electromobility and already realises that the new drive technology only

makes ecological sense if the required electricity comes from renewable sources. The country is still very dependent on coal-fired generation but invested almost 133 billion US dollars in the expansion of renewable energies in 2017 – more than every other country worldwide.

E-mobility only makes sense if the required electricity comes from renewable sources.

These dynamic developments cannot (yet) be seen in the USA, despite the special role played by California. Range is a decisive factor in the Great Plains and other flat land areas, while fossil fuels are so cheap that cars with combustion engines are clear favourites amongst purchasers. However, the proportion of e-cars is also set to grow in the USA due to the predicated fall in production costs. In addition, the US market will benefit from high investment by US automakers in new drive technologies – and from the stricter emissions standards in some federal states.

Electromobility means California in the USA. This federal state on the West Coast is also a pioneer in the expansion of renewable energies.

-40%

California wants to significantly reduce its greenhouse gas emissions by 2030.

+15%

The share of total electricity generation accounted for by renewable energies is also growing in the USA.

It comes as no surprise that California also plays a special role in this area. The west coast state aims to reduce its greenhouse gas emissions by 40 percent by 2030 and that's why it plans to rigorously expand electromobility. Subsidies are available for electrically powered vehicles across the USA as a whole. For a plug-in hybrid or a car with a battery capacity of at least 5 kilowatt hours, purchasers receive a tax credit of 2,500 US dollars. The tax credit can increase up to a maximum of 7,500 US dollars for larger battery capacities.

The charging infrastructure is very unevenly distributed regionally in the USA. The highest concentration can be found on the West Coast. The "West Coast Electric Highway" – an initiative to promote electromobility – has charging stations every 40 to 80 kilometres. Around 16,000 public and 3,000 private charging stations exist across the country. Yet this is nothing in comparison to standard filling stations: owners of vehicles with combustion engines can use around 112,000 filling stations each offering up to 30 fuel pumps. It is the car industry in particular that wants to invest billions of US dollars in the next few years to close this gap in infrastructure.

The expansion of electromobility in the USA will also go hand in hand with an increase in electricity generation from renewable energies. The share of total energy generation accounted for by renewable energies increased by 15 percent in 2017, with electricity generation from solar energy even increasing by 25 percent – thanks to California.

Tax breaks and other discounts work: Norway is an example of how the state can help electromobility achieve a breakthrough.

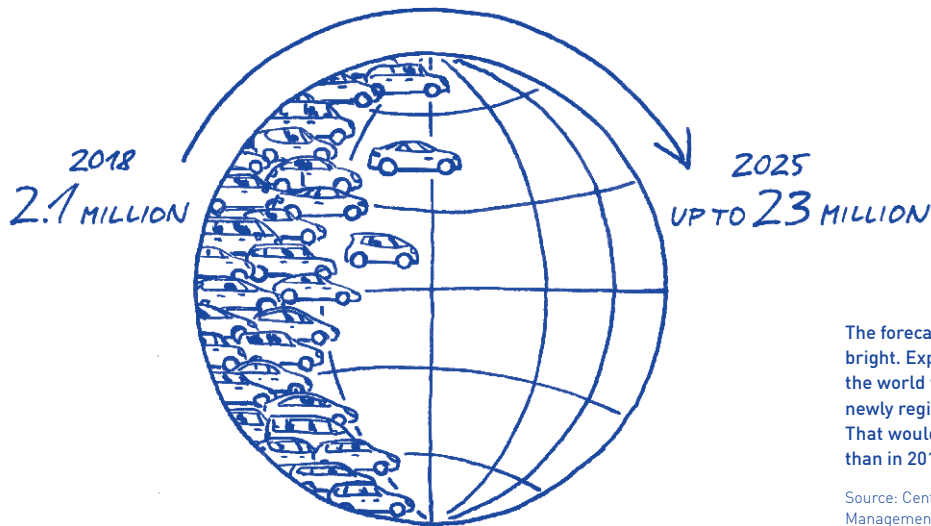
The market for electrically powered vehicles is booming in Scandinavia, especially in Norway. The main reason for this is the high state subsidies that are offered to purchasers. They neither have to pay emission taxes, which can amount to as much as 10,000 euros for a combustion engine vehicle, nor VAT. The vehicle tax for e-cars is also significantly lower than for cars with a combustion engine. In addition, users of e-cars in Norway also benefit from a series of other discounts. For example, they can take their cars on the state-run ferries free of charge and do not have to pay to use toll roads.

Furthermore, the state is also taking care of the expansion of the infrastructure. The aim is to almost double the number of charging connections in Norway from around 13,000 now to 25,000 by 2020 – and thus provide complete coverage across the country.

Hydropower dominates electricity generation in Norway. In the first Global Energy Transition Index, published by the World Economic Forum (WEF) in March 2018, four of the first five places were held by countries from northern Europe. Norway was ranked 2nd behind Sweden. In comparison, Germany was ranked in 16th place.

E-cars are conquering the world

Number of e-cars newly registered worldwide each year



The forecast for electromobility is bright. Experts predict that across the world there will be 23 million newly registered e-cars in 2025. That would be twelve times more than in 2018.

Source: Center of Automotive Management (CAM), January 2019

Ambitious targets: Germany aims to have 1 million e-vehicles on its roads by 2022 – which is ten times more than in autumn 2018.

30%

Almost a third of all cars newly registered in Germany in 2025 should be e-cars.

Germany has also made progress over the last few years with the expansion of renewable energies and generation of green energy increased by around 6 percent in 2018 in comparison to the previous year. Overall, the share of total gross electricity generation accounted for by renewable energies here at home stood at around 35 percent. Coal accounted for a similarly high share.

The increasing debate about emission limits and bans on certain vehicles have, in particular, resulted in a noticeable upturn in the market for electromobility. And yet the country is still lagging behind its own targets. As a result, the German government had to move the deadline for achieving its target of having around 1 million e-cars on the streets of Germany from 2020 to 2022 (see also the adjacent interview). Around 142,000 battery powered cars were on our roads by the end of 2018.

The German car industry has now announced that it will invest a huge amount in the expansion of electromobility and will launch numerous new e-car models on the market. In the meantime, the government has also started focusing more strongly on state subsidies so that purchasers of e-cars will now receive an environmental subsidy of at least 4,000 euros.

It will require considerable effort to install the necessary infrastructure for the 1 million e-cars now planned for the new deadline of 2022. Experts at the German National Platform for Electric Mobility (NPE) estimate that around 77,000 public charging points need to be installed by then – there were only around 16,000 by the end of 2018. EnBW recognised this a long time ago – it is not only a pioneer amongst energy suppliers for the expansion of renewable energies, but also leads the way in the construction and operation of public charging points.



"Germany is a leading international supplier of electromobility."

Prof. Dr. Henning Kagermann

Chairman of the German National Platform for Electric Mobility (NPE) and President of the German National Academy of Science and Engineering (Acatech). Prof. Dr. Henning Kagermann was the spokesperson for the Management Board of SAP AG from 2003 to 2009.

Interview with Prof. Dr. Henning Kagermann

Professor Kagermann, what contribution can electromobility make to limiting global warming?

Kagermann: Electromobility offers clear advantages for the climate, environment and life in urban areas – especially lower CO₂ emissions, zero local emissions of nitrogen oxides and particulate matter, and less noise pollution. Electric vehicles are cleaner and quieter.

Where does Germany stand with respect to electromobility compared with other countries?

Kagermann: Much has been achieved in the last few years. Germany is a leading international supplier for electromobility. Our car manufacturers have achieved a comparable market share for their electric cars as for their conventional cars in all markets, with the exception of China which is a special case. Every third patent for electromobility worldwide is held by Germany.

Yet it was nevertheless necessary to push back the deadline for achieving 1 million e-cars on the streets of Germany. What has to happen so that Germany can achieve its e-mobility targets?

Kagermann: An appropriate charging infrastructure to meet the demand, suitable framework conditions, incentives and attractive vehicles must all go hand in hand to enable e-mobility to quickly break through on a large scale. The funding packages for the expansion of the charging infrastructure are already beginning to bear fruit. Just within the scope of the funding programmes offered by the German government, it was possible to triple the number of normal charging points and achieve almost a tenfold increase in quick-charging points by the end of 2018.

What challenges still need to be overcome?

Kagermann: We need to ensure that we don't let up in our efforts so that we can maintain the highly dynamic growth of the market. Local authorities should ensure all users of e-cars are able to take advantage of the benefits offered by the Electric Mobility Act. In addition, the environmental bonus should be retained until the target of 1 million electric cars on German streets is achieved. This should be accompanied by further funding measures to expand the charging infrastructure and by reforms to tenancy law and property rights, so that the number of public and private charging points can grow in line with the number of e-cars.

What do you expect from the energy supply companies in the further expansion of e-mobility?

Kagermann: As the number of electric cars increases, they will become an important control variable for the energy sector. The demand for charging infrastructure that is fit for the future will then grow steadily. This will place new demands on the power distribution grids which can be countered by the local expansion of the energy grid and the use of smart load management. It is already necessary today to build a comprehensive, intelligently networked and controllable charging infrastructure across the country to ensure that integration into the grid remains sustainable and cost-efficient.

Electromobility by conviction

EnBW positioned itself at a very early stage so that it could actively shape the Energiewende and shift its focus, in particular, onto the opportunities that it offers. The company views itself more and more as an infrastructure supplier and is pushing forward themes relevant to the whole of society such as smart city and district development and, naturally, electromobility.

The company has had to clearly position itself in order to be ready to face the important themes of the future. "Our engagement in electromobility comes from the deepest conviction," says

"Our engagement in electromobility comes from the deepest conviction."

Dr. Frank Mastiaux

Dr. Frank Mastiaux, Chief Executive Officer of EnBW. "This sector is just as important to us as the expansion of renewable energies."

EnBW and its subsidiary Netze BW cover the most important parts of the value added chain for e-mobility: Netze BW provides the electricity grids and storage solutions, while EnBW generates electricity from renewable energy sources and is further expanding the charging infrastructure – while offering corresponding products and services to the commercial sector, local authorities and private consumers. "For example, we offer our business customers full e-mobility packages for the operation of their vehicle fleets or we can connect the photovoltaic power plant on the roof of a private customer's house with an electricity storage system and their electric car," explains Timo Sillober, Head of Sales at EnBW. This means that the customer uses their own electricity generated from solar energy to operate their car.

EnBW combines its services in the area of electromobility in the EnBW mobility+ product family. "We have brought together everything you need to be electrically mobile," explains Sillober, describing the concept behind the product family. This includes so-called wallboxes (compact charging stations for installation at home, for example in the garage), charging infrastructure while out and about and digital services such as the EnBW mobility+ app that enables users to charge at stations not operated by EnBW (see extra box on p.13).



"We offer everything that you need to be electrically mobile."

Timo Sillober

The decisive factor for achieving more widespread use of electromobility is the development and expansion of corresponding infrastructure. The task for Netze BW is to bring the charging electricity to where it is needed: on the motorway, in the city, in the countryside and at home. EnBW is in turn tasked with operating the required charging stations at these locations. This results in a clear mandate for the company that Head of Sales, Timo Sillober, expresses as follows: "We want to make our contribution to ensuring that people can set off in their electric cars without having to worry about the distance they can travel or the charging opportunities available to them. In addition, we will combine individual solutions to create new applications so that our customers will be able, for example, to use their own solar electricity generated at home to charge their e-car when they are on the road."

EnBW already assumed a pioneering role in the area of charging infrastructure many years ago. The company began installing charging stations for electric vehicles in Stuttgart in 2012 and has since supplied electricity to the largest fleet of electric vehicles in a major city. No wonder then that Stuttgart is considered the city with the best conditions for electromobility across Germany according to a study carried out by the consulting firm PricewaterhouseCoopers.

The Services Division at the subsidiary Netze BW is responsible for installing the individual charging stations for EnBW. Netze BW has a high level of expertise in the planning, installation and operation of critical infrastructure and has become an expert in charging infrastructure. "We have aligned our services to the new requirements of modern mobility and drivers of electric cars can rely on the fact that they will be able to charge their vehicles from Munich to Hamburg," explains Axel Hausen, Head of Product Management at Netze BW, Services Division.

Product development, sales and managing the development of the charging infrastructure – as well as its operation and maintenance – is, on the other hand, the responsibility of EnBW. "Our main focus is currently the expansion and operation of quick-charging stations," says Marc Burgstahler,



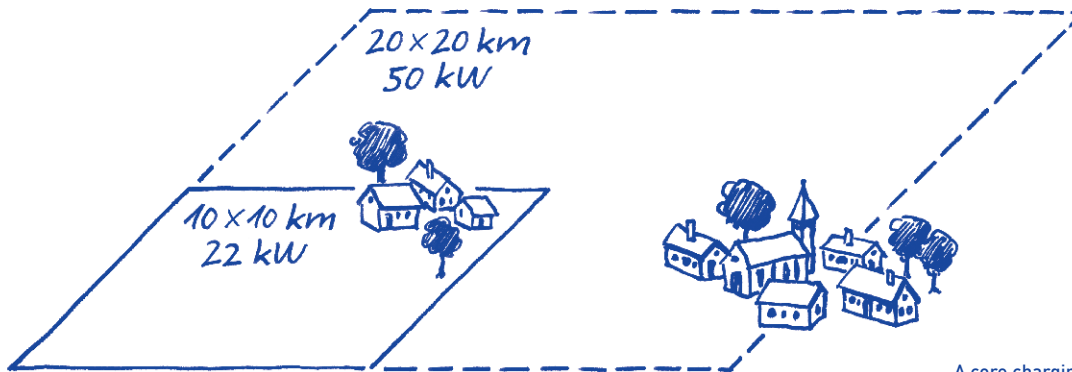
"Our main focus is currently the expansion and operation of quick-charging stations."

Marc Burgstahler

Head of Electromobility at EnBW, describing the current activities of the company in this area. In comparison to conventional AC charging stations (alternating current), DC charging stations (direct current) allow a significantly quicker charging process. This means that customers can, for example, charge their vehicle with enough electricity to cover a distance of around 100 kilometres in just 3 minutes at DC charging stations with a charging capacity of 300 kilowatts (so-called "high power chargers"). EnBW is one of the market leaders for the operation of quick-charging stations in Germany with currently more than 130 quick-charging stations, primarily at motorway service stations and in urban areas. And it has ambitious targets: "We aim to operate 1,000 quick-charging stations across Germany by the end of 2020," explains Burgstahler. EnBW is cooperating with partners such as OMV, Tank & Rast and hagebau.

Seamless coverage

Distance between charging stations in Baden-Württemberg



A core charging network: The next charging station is never far away in Baden-Württemberg, no matter whether a charging capacity of at least 22 kilowatts or at least 50 kilowatts is required.

SAFE – the electrical charging network for Baden-Württemberg – provides comprehensive infrastructure. The next charge is never more than 10 kilometres away.

The State of Baden-Württemberg – often dubbed the automobile state – believes that it has a special obligation to help electromobility make the breakthrough and thus pave the way for environmentally friendly mobility. As part of the funding programme to establish a core charging network for electric vehicles covering the whole of Baden-Württemberg (SAFE), a consortium consisting of 74 municipal utilities and regional suppliers as well as three local authorities under the leadership of EnBW has developed a closely meshed network of charging stations in the past few months.

Drivers of e-vehicles in Baden-Württemberg will already have access this year to a charging station with a charging capacity of at least 22 kilowatts in a grid with a mesh size of 10 by 10 kilometres from any location. In a grid with a mesh size of 20 by 20 kilometres, there will also be at least one quick-charging station with 50 kilowatts of charging capacity.

Netze BW is investing around 500 million euros in the expansion of its electricity distribution grid up to 2025 so that it can cope with the increased demand.

Stable electricity grids are a basic requirement for the reliable charging of e-cars. It is not the volume of electricity that is the issue but the peak loads that occur when lots of vehicles are being charged at the same time. This is because the grid can only remain stable when the same volume of electricity is being fed into it as is being extracted. Therefore, it is vital for electricity grid operators such as Netze BW to take suitable measures to adapt the supply to the requirements of electromobility early enough, so that they are

ready to anticipate peaks in demand. Against this background, Netze BW is investing around 500 million euros in the expansion of its electricity distribution grid up to 2025 so that it can cope with the increased demand. Ultimately, a stable electricity grid is worth every cent.

The networker

EnBW has not only taken on a leadership role as part of the SAFE funding programme, the company and its subsidiary Netze BW are also actively involved in a series of other initiatives for the further development of e-mobility.

As early as the summer of 2017, Netze BW was the first energy company to join the German Association of the Automotive Industry (VDA). Since the turn of the year 2018/2019, Netze BW has also been a member of the Research Association of Automotive Technology (FAT) in the VDA and contributes to the discussion from its perspective as a grid operator.

In addition, EnBW is also involved in the Strategy Dialogue for the Automotive Sector in Baden-Württemberg, which was founded by the state government in 2017 and has representatives from the worlds of politics, business, science and civil society. The Managing Director of Netze BW GmbH, Dr. Martin Konermann, is Co-Chairman of the "Energy" steering group, while Timo Sillober is a member of the Advisory Board of e-mobil BW. The State Agency for New Mobility Solutions and Automotive Baden-Württemberg is responsible for the various themes covered by the strategy dialogue.

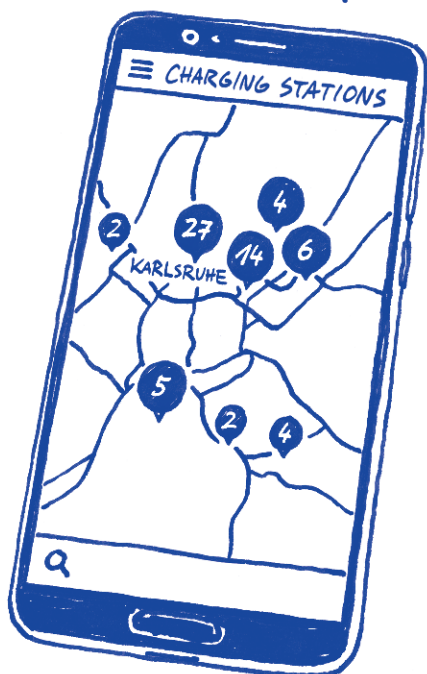
Simple. Everywhere. Reliable.

Whether electromobility is fit for everyday life is best demonstrated by how easily and intuitively it can be accessed by users. "Our EnBW mobility+ app has established itself as a kind of smart guide in this respect," says Christoph Ulusoy, Head of Product Development and Digital Solutions at EnBW. "The free app offers drivers of electric vehicles everything they need: an almost seamless overview of the available charging stations, full transparency with respect to tariffs and convenient payment functions. All of this makes the award-winning application the most downloaded app in the area of electromobility in Germany."

The app...

- > ... is linked to around 25,000 charging stations from various operators in Germany, Austria and Switzerland – currently the largest charging network (as of January 2019) – and provides an overview in map form.
- > ... indicates whether a charging station is free or occupied and guides the driver directly to the nearest place they can charge.
- > ... enables EnBW customers to charge their vehicles at more than 90 percent of all publicly accessible charging stations – the highest network coverage in Germany, Austria and Switzerland – and pay directly.
- > ... is also suitable for drivers of electric cars that are not customers of EnBW for locating free charging stations, showing them the way and checking the payment options.
- > ... offers simple, understandable tariffs. Instead of the standard time-based pricing models, EnBW wants to offer precise consumption-based billing that is independent of the model of electric car. Since 1 March 2019, the company has been billing solely on the basis of the electricity that has actually been used during charging – to the precise kilowatt hour. This means that it bills at one uniform tariff across all stations in the roaming network.
- > ... has an integrated driving simulator that can also be used by drivers of cars with a combustion engine to find out what e-car would best suit their own driving habits.

The EnBW mobility+ app is further confirmation of the pioneering role that the company is playing in the expansion of electromobility.





Is electromobility ready to be part of everyday life? In a pilot project being conducted by the EnBW subsidiary Netze BW, ten households in a residential street near Stuttgart are participating in a trial. They demonstrate that charging and driving are no problem, while the electricity grid also remains stable. We visited the residents.

Ostfildern is 20 minutes from the major city of Stuttgart. At first glance, Belchenstraße in the Ruit district looks just like many other residential streets in Germany. The single-family homes and plots are neither particularly large nor particularly small, there isn't anything flashy about the architecture and the cars are neatly parked. Yet a closer look reveals something surprising: five of the eight cars parked along the 100 metre long road are electric vehicles and two charging stations have been installed in the cul-de-sac. In fact, the inconspicuous looking Belchenstraße has been transformed into "E-Mobility Avenue" in the last few months.

Since June 2018, Netze BW has been testing the impact of electromobility on the electricity grid in a pilot project being conducted in cooperation with the City of Ostfildern. They are investigating what would happen if lots of residents on the same street, who are supplied with energy via the same electricity circuit, decide to switch over to electric cars at the same time, and how the use of battery storage systems may increase the stability of the grid.

To gain some insight into how charging patterns can be managed in a way that is customer-friendly but also has no negative impact on the grid, Netze BW has equipped ten households in Belchenstraße with e-cars and the corresponding infrastructure for charging them at home for a period of 12 months. The cost of the field test has proved worthwhile. Ultimately, the goal is to make the electricity grids fit for the age of electromobility. The location for the trial project has been well chosen. The households participating in the trial are representative of a typical residential area with owner-occupied homes, as is often found on the outskirts of cities. An area where in all

probability most electric cars will be found in future. The mix of residents is also ideal: Belchenstraße is home to families with children, young couples and retired people – people with different lifestyles and different user patterns.



"I was curious to see what it would be like to test an electric car on a daily basis over a long period of time."

Norbert Frank

One of the residents and participants in the project is Norbert Frank, who is self-employed and a family man. "I was curious to see what it would be like to test an electric car on a daily basis over a long period of time," explains Frank, describing his reason for participating in the project. "Although we already have two cars, we thought it would be a useful addition, especially for journeys of up to 40 or 50 kilometres. These are the distances covered every day by my wife in particular. She is the one that uses the E-Golf provided by Netze BW the most." What has the experience been like so far? "Extremely positive," says Frank. "Everything works fine – both driving and charging – and we haven't noticed any bottlenecks in the electricity grid."

However, the e-mobility tester has noticed that the cars consume significantly more electricity in the cold winter months. "We are only able to cover about half the distance in winter as in the summer with the same amount of charge. "When we unplug the car from the socket in the morning, it displays a range of

246 kilometres. If my wife drives to Reutlingen and back, which is around 75 kilometres, the display then only shows 92 kilometres remaining. It still showed 150 or 160 kilometres in the summer. That means we have to charge the vehicle every day in winter." The main cause of the higher energy consumption is the heating in the car, which uses a lot of energy at lower temperatures.

Yet even charging the car daily isn't a complicated process for the Frank family. A compact rectangular charging station that takes up very little room has been fitted to the wall in the garage, a so-called wallbox. This is where the e-car is recharged with electricity, generally in the evening or overnight, as Frank explains. "We usually charge the car in the evening between 7 o'clock and 10 o'clock or at night between 10 o'clock in the evening and 6 o'clock in the morning."

It takes around 3 to 5 hours until the batteries in the E-Golf are fully charged again. "Sometimes it takes a little longer, depending on the load placed on the electricity grid," says Christian Bott, who is responsible at Netze BW for the pilot project in Belchenstraße. "The challenge is to minimise peak loads while fully exploiting the capabilities of the electricity grid." Something that is necessary when several residents in Belchenstraße charge their e-cars at the same time. The charging capacity can then be reduced temporarily from 22 kilowatts to 11 kilowatts and the charging time increases accordingly. This "smart charging management system" takes into account the charging status and predicted departure time for each e-car. "The process is automatically managed overnight so that users do not notice whether their car was charging from the grid for 3, 5 or 8 hours."

The convenience of charging at home is an important reason as to why Norbert Frank is likely to continue using an e-car after the end of the trial project. "I can certainly highly recommend using an e-vehicle, especially for short journeys," confirms Frank. But the situation is a little different for longer journeys. "I often have to drive to Frankfurt or Cologne for business and that would still be a little problematic with an e-car. The infrastructure and charging capacities would still need to improve." Norbert Simianer, a neighbour from across the road, has a similar opinion on the matter. "Electromobility is perfect for short trips but everything has to be very well planned in advance for longer journeys," explains the pensioner, who was the resident in Belchenstraße who submitted the application to participate in the pilot project for Netze BW.

"I have been driving a hybrid car for some time and really wanted to know what it would be like to drive a purely electric car." The test vehicle being used by Simianer is a Renault Zoe. His verdict: "The Zoe is very suitable for everyday life. I use it just like I use my own car."

And that's why the former school principal has also used his electric car for longer journeys. "We have already taken trips to Lake Constance and Switzerland. It was necessary to search for suitable charging stations there in advance because every provider has their own system, but even this issue can be overcome." He certainly didn't find himself stranded without power. To provide Norbert Simianer with a home charging solution he can rely on at all times, Netze BW have also fitted a battery storage system next to the wallbox in his garage.

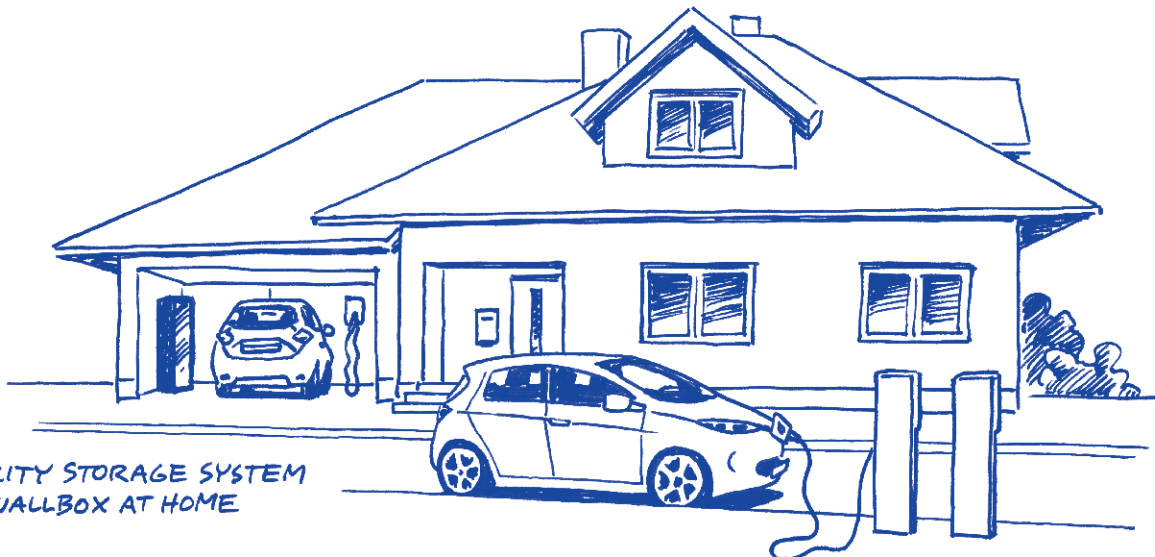
"There were some special factors that needed to be considered in this case," explains Netze BW expert Bott. "From an electricity grid perspective, Mr Simianer lives right at the end of the electricity line on Belchenstraße. He also drives an e-car with a high charging capacity of 22 kilowatts. To take these circumstances into account, we charge the Zoe from a separate battery storage system to reduce the load on the grid." And this storage system is in turn charged at times of the day when other electric cars are not connected to the electricity grid. This delicate balancing act is carried out silently in the background, unnoticed by the customer.

No wonder then that the e-pioneers Frank and Simianer don't focus too much on the electricity supplier and grid operator when they describe the challenges that need to be overcome in order for electromobility to finally make a breakthrough. "The car industry also needs to play its part," says businessman Frank. "The choice of e-cars that have a good range is still very limited." As a frequent driver, he would also like to see more charging stations and above all shorter charging times when on longer journeys. "When it takes more than 1 hour to charge my car with electricity at a service station, I end up drinking a lot of coffee." "In particular, we need uniform standards for the entire charging infrastructure", adds Simianer. "Nobody takes 20 different adapters with them when they go on a trip." And the e-pioneer wants to say something else before he jumps in his Zoe to make his next (short) trip: "The electricity used to charge the electric car should preferably be green electricity. But then EnBW does already offer the right mix."



"Electromobility is perfect for short trips but everything has to be very well planned in advance for longer journeys."

Norbert Simianer



ELECTRICITY STORAGE SYSTEM
AND WALLBOX AT HOME

CHARGING STATION FOR ALL RESIDENTS



Monika Bader,
Senior Planning Officer for Ostfildern

"Enthusiasm for electromobility is growing."

Interview with Monika Bader

Mrs Bader, you are the Senior Planning Officer for the City of Ostfildern. What significance does electromobility have for your community?

Monika Bader: Electromobility is an important element of the new mobility concept that we are currently developing. The challenge is to intelligently network all types of mobility – in terms of both private and public transport.

What insights have you gained from the "E-Mobility Avenue" pilot project in Belchenstraße?

Bader: Firstly, the project is helping to improve acceptance and enthusiasm for electromobility amongst the general public. People can see that the technology really works. They can also gain a better understanding of all the things you need, such as charging stations and additional electricity storage systems – and the fact that you might need to plan your journeys a little better than before.

As acceptance for electromobility increases, so will the demand for the corresponding public infrastructure...

Bader: Yes, and this is a real challenge because of the limited space. There is actually no space left available in public areas. The options are extremely limited, especially in existing urban districts.

However, new urban districts are a different matter altogether. How do you plan a typical district of the future?

Bader: Specific mobility concepts are already taken into account when developing the first concepts for an urban development project, even as early as the competitive tendering process. We are already thinking about future requirements – such as central intermodal hubs and parking guidance systems – and take into account the space needed for charging stations, as well as for external electricity storage systems and substations. The project in Belchenstraße has already clearly demonstrated that electromobility requires a highly efficient electricity grid.

And it is not only electromobility that requires lots of energy but also the ongoing process of digitalisation in general...

Bader: That's correct. Digitalisation means that we will have to supply many more computers with electricity. When planning urban developments that are fit for the future, we also have to consider that people's homes and places of work will move much closer together. We will need to provide the right infrastructure and this means that when we talk about the expansion of broadband, we are also talking about the expansion of the electricity grid.

What makes an ideal energy supply company and an ideal grid operator in your opinion?

Bader: The ideal companies should provide a highly efficient electricity grid that is supplied with a very high proportion of renewable energies. A grid that will be able to cope reliably with the high demands of electromobility and digitalisation at all times. EnBW and Netze BW are making really good progress in this respect, boosted by the research projects they are running in our community.

"We complement each other perfectly."



Major projects require joint effort. That is why EnBW is relying on close collaborations – such as with Tank & Rast – for the establishment and expansion of charging infrastructure for electromobility.

Jörg Hofmeister, Head of Electromobility at Germany's largest mobility and service provider on the motorways, and Amadeus Regerbis, Head of Charging Infrastructure for Electromobility at EnBW, tell us about the aims of the partnership – and about the secret to success for good cooperation.

Mr Hofmeister, Mr Regerbis, what significance does electromobility have for your companies?

Amadeus Regerbis: Electromobility is an important component of the Energiewende for EnBW and it can be found as a recurring theme throughout our company. Purely electrically powered vehicles have no local emissions and are certainly the most efficient alternative drive technology for private transport.

Jörg Hofmeister: It is extremely important to us that we make our service stations fit for the future and in doing so adapt to the latest developments in mobility. Electromobility – which is growing in significance all the time – is an important theme for us. In close cooperation with the Federal Ministry for Transport and strong partners such as EnBW, we already began to establish the necessary infrastructure some time ago. Our common aim is to make a significant contribution to the breakthrough of electromobility.

How long have EnBW and Tank & Rast been working together and how did this cooperation come about?

Regerbis: It developed from the “SLAM” (fast-charging network for axes and metropolises) project run by the Federal Ministry for Economic Affairs and Energy. All the well-known German car manufacturers plus EnBW – as the sole major energy supply company – were involved in the project. However, we didn’t just want to be a project partner but also an invest-

or, and so we got in contact with Tank & Rast to develop the infrastructure where it made sense the most for long journeys, namely the motorways. We then quickly agreed the first 34 sites in Baden-Württemberg with Tank & Rast.

Hofmeister: This fitted in nicely with our plans because we had already decided to develop a network of charging stations offering the best possible coverage at the end of 2014. EnBW was, and remains, the ideal partner for this task because the company has extensive experience and expertise in the development, operation and maintenance of charging infrastructure.

Regerbis: ... and Tank & Rast has now become our partner of choice for achieving nationwide coverage. Electromobility requires a functioning network of charging stations that can be seen and experienced as part of

everyday life. It is only in this way that acceptance for this new technology will grow amongst the general public. And the best place to achieve this for long journeys is on the motorways.

Hofmeister: We are united by the common goal of making long-distance e-mobility a reality. And both companies are following this goal with great enthusiasm.

“We are united by the common goal of making long-distance e-mobility a reality. And both companies are following this goal with great enthusiasm.”

Jörg Hofmeister

What form does the cooperation take in practice? Who does what?

Hofmeister: There is a clear division of responsibilities. We jointly plan the network of charging stations and select the sites. Tank & Rast then makes the necessary space available at the selected sites and EnBW handles the actual installation and operation of the charging stations.

Regerbis: Our colleagues at Tank & Rast know their sites like the back of their hands and understand precisely which locations are best suited for the installation of charging stations. In addition, the company has lots of experience across the entire process – from submitting applications and dealing with the responsible authorities through to ensuring that the requirements with respect to traffic routes, underground construction and logistics are taken into account. This broad range of expertise impressed us from the very beginning and we benefit from it enormously.

So the cooperation up to now has been a positive experience?

Regerbis: Absolutely. We have achieved a lot together and further expanded our partnership. The first 34 charging locations in Baden-Württemberg have now grown into 125 across the whole of Germany. The cooperation between us simply works, we can rely on each other and complement each other perfectly.

There are a lot of legal requirements to be observed in this area. How long does it take to install a new charging station?

Hofmeister: The process now runs like clockwork. As a rule of thumb, we require about 6 months from the planning stage until installation. Considering the level of complexity involved in construction projects in Germany, it must be said that the authorities are very open to the expansion of electromobility.

Is there an ideal location for charging stations at a motorway service station?

Hofmeister: The best location is close to the standard refuelling stations. And the ultimate aim for the recharging process is of course to mimic the refuelling process as closely as possible. That means shortening the charging times even further so that drivers can simply pull up to recharge their cars rather than park up.

What is the current status with respect to the construction of the infrastructure and what are the next steps that you want to take as part of this partnership?

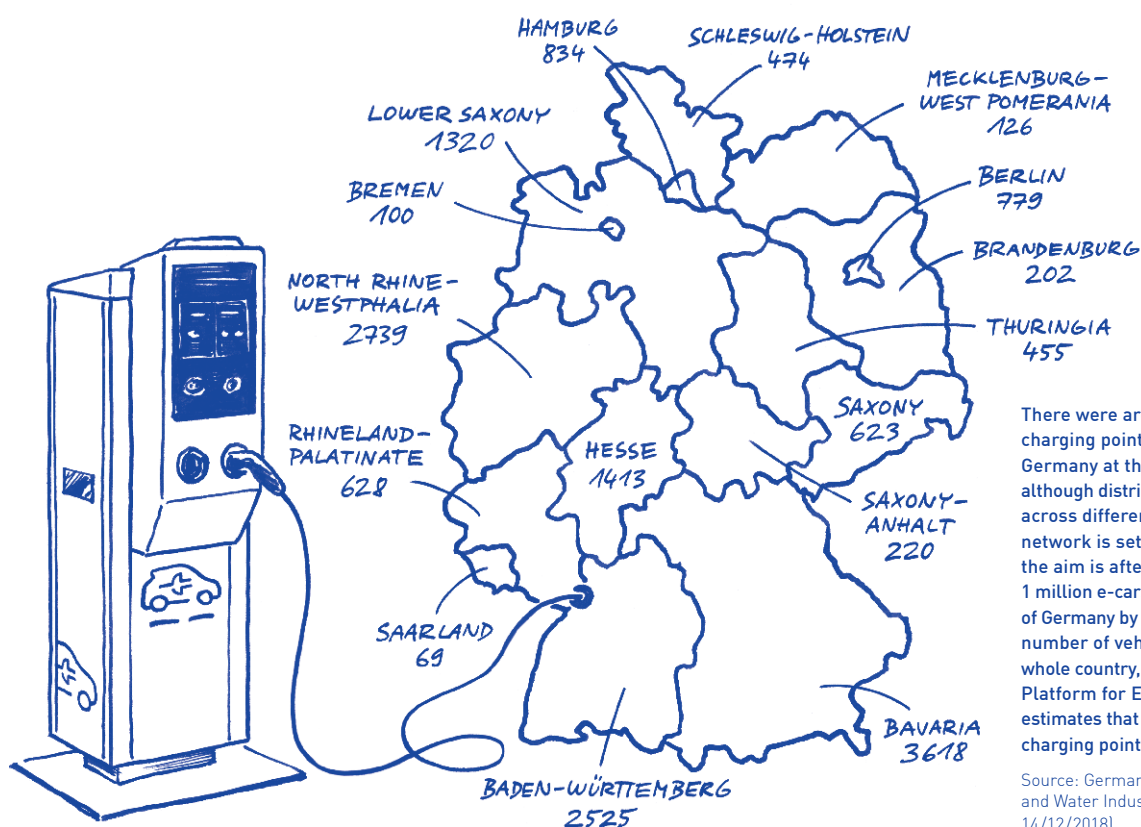
Hofmeister: We have now been able to install more than 300 charging stations at our motorway service stations, a large proportion of which are provided by EnBW. This means that we have established a good, basic infrastructure for long journeys so that drivers can comfortably cover long distances on the motorways in their e-cars. In addition, the infrastructure is also already equipped to handle the increasing number of e-cars in the future. The next step is, in particular, to upgrade the existing charging stations. This will enable us to condense our network even further.

What does that mean specifically?

Regerbis: The aim is to increase the capacity of the charging stations. Our goal is to ensure that at least one quick-charging point with a capacity of 150 kilowatts is available at every EnBW charging station that we have installed at the Tank & Rast motorway service stations by the end of 2019.

The south is one step ahead

Number of public charging stations for e-cars by federal state
[As of the end of 2018]



There were around 16,000 public charging points for e-cars in Germany at the end of 2018 – although distributed very unevenly across different regions. Yet the network is set to become denser, the aim is after all for around 1 million e-cars to be on the streets of Germany by 2022. To supply this number of vehicles across the whole country, the German National Platform for Electric Mobility estimates that around 77,000 public charging points will be required.

Source: German Association of Energy and Water Industries (BDEW, as of 14/12/2018)



Jörg Hofmeister



Amadeus Regerbis

How long does the charging process take at this type of station? And what is the range?

Hofmeister: This is highly dependent on the size of the battery and the charging capacity of the model of electric car...

Regerbis: ...as a rule of thumb, 30 minutes of charging at a 150 kilowatt charging station is sufficient for 300 to 400 kilometres.

What is the current level of demand placed on the existing charging stations?

Hofmeister: It is important to say first of all that the roll-out of electromobility infrastructure for long-distance journeys was carried out very quickly. Germany was not any slower than other countries in this respect. However, the infrastructure is far from being used to full capacity because the number of e-cars is still too low. The car industry now needs to do its homework and launch long-range e-cars on the market at reasonable prices.

"The car industry now needs to do its homework and launch long-range e-cars on the market at reasonable prices."

Jörg Hofmeister

Regerbis: However, the situation could change very quickly, especially as the car industry is currently under pressure and has announced huge investment. To ensure that we can respond flexibly when it comes to charging infrastructure, we have designed our charging stations so that they can be quickly scaled up. This applies to both the number of charging points and also the charging capacity.

Assuming that there is an increase in demand – what are the biggest hurdles to the further expansion of the infrastructure in Germany?

Regerbis: If I could ask for anything, it would be the quicker realisation of the grid connections. Yet there is also a bottleneck in terms of construction. The service providers in the area of underground construction are fully booked months in advance.

Hofmeister: Another important issue is the availability of the required hardware, by which I mean quick-charging points with a capacity of 150 kilowatts and more.

If we look into the future, can you imagine other areas of cooperation between EnBW and Tank & Rast beyond that of charging stations – especially with respect to the increasing level of digitalisation?

Hofmeister: Definitely. I only have to think about things like automated driving or shared and connected mobility and I can see many common themes where closer cooperation would be beneficial.

Regerbis: Our cooperation is geared towards the long term and characterised by reliability, commitment and trust. The ideal requirements, in our opinion, for being able to offer our customers real added value both now and in the future.

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Navigation

The integrated management of EnBW comprises financial and non-financial goals in the dimensions:



TOP Our key performance indicators are labelled with this symbol.

The cross-references take you to further information within this report or to the definition of terms in the glossary in the service section at the end of the report. You will also find the financial terms here.

Note

We have also published an online version of the Integrated Annual Report 2018 at www.enbw.com/report2018.

The full set of financial statements of the EnBW Group 2018 including the notes to the consolidated financial statements and the declaration of corporate management 2018 of the EnBW Group and EnBW AG including the corporate governance report 2018 are not included in this Integrated Annual Report 2018. Together with the unqualified auditor's report, they form part of the Integrated Annual Report 2018 – Extended Version, which is available exclusively in PDF format on our website at www.enbw.com/report2018-downloads. All financial publications for the 2018 financial year can be found there.

The cross-references do not form part of the audited management report.

Interview with the Board of Management



Dr. Hans-Josef Zimmer

born 1958 in Merzig

- › Member of the Board of Management
- › Chief Technical Officer since 1 January 2012
- › appointed until 31 May 2021
- › lives in Steinfeld (Pfalz)

Thomas Kusterer

born 1968 in Pforzheim

- › Member of the Board of Management
- › Chief Financial Officer since 1 April 2011
- › appointed until 31 March 2024
- › lives in Ettlingen

Dr. Frank Mastiaux

born 1964 in Essen

- › Chairman of the Board of Management
- › Chief Executive Officer since 1 October 2012
- › appointed until 30 September 2022
- › lives in Stuttgart


Colette Rückert-Hennen

born 1961 in

Leverkusen-Opladen

- › Member of the Board of Management since 1 March 2019
- › Chief Personnel Officer
- › appointed until 28 February 2022
- › lives in Bonn

Dr. Bernhard Beck LL.M.

born 1954 in Tuttlingen

- › Member of the Board of Management and Director of Personnel
- › Chief Personnel Officer since 1 October 2002
- › appointed until 30 June 2019
- › lives in Stuttgart

The interview with the members of the Board of Management was held by Uwe Wolfinger.

As of 7 March 2019



EnBW is evolving yet also remaining true to itself. In an interview with the whole Board of Management, the members explain how the company will utilise its core expertise and a clear strategy to successfully shape the energy world of the future and areas beyond it.

Dr. Mastiaux, how did EnBW perform in the 2018 financial year?

Dr. Frank Mastiaux: The result achieved by our company last year was in line with our forecast. This shows that we are still on track with the implementation of our strategy and the realignment of our company. We are now increasingly positioning ourselves as a competent infrastructure partner beyond the energy sector.

"We are now increasingly positioning ourselves as a competent infrastructure partner beyond the energy sector."

Dr. Frank Mastiaux

Can you explain the repositioning process in a little more detail?

Dr. Frank Mastiaux: Well, it is in the DNA of our company to supply and operate things reliably and safely, such as power plants, regional and supra-regional electricity grids or even large wind farms. We are now increasingly transferring this core expertise from the energy sector to new, high-growth business fields with a promising future, such as the expansion of broadband, electromobility or the sustainable development of urban districts. This means we are combining our traditional strengths with important themes for the future. We also believe that it is just as important to pay attention to social aspects that are closely connected to some of these new activities as it is to simply provide good technology. In district development, for example, this means that we want to play our part in developing areas in which people really want to live. These smart districts not only require childcare facilities and meeting places for citizens, but also a butcher and a baker.

But this type of strategic evolution can only succeed if it is supported by the whole organisation ...

Dr. Frank Mastiaux: That's correct, which is why our overarching initiative "next level EnBW" is so important. The aim of the initiative is to make our entire company fit for the future. We want to improve in everything that we do, whether it means getting things done more quickly or promoting innovative strength. We don't just want to take small steps but aim to achieve significant leaps in quality across the entire organisation, with a clear focus on customer orientation, internationalisation, new business and internal cooperation. We don't think of it as a programme, but rather as a movement that involves everyone in the Group and gives people greater courage and skills to face new challenges.

Mr Kusterer, what does "next level EnBW" mean for the finance department?

Thomas Kusterer: Nothing less than taking the entire finance organisation of our company to a completely new level. Digitalisation will also play an important role. We will utilise the new

"We are taking the entire finance organisation of our company to a completely new level."

Thomas Kusterer

technical possibilities offered by analytics, robotics and artificial intelligence to speed up our processes and procedures even further. We want to provide information in real time as far as possible and provide our business units with even more targeted and appropriate support – so that they can operate on the market as successfully as possible.

Did you make specific progress in this area in the past year?

Thomas Kusterer: Yes, an increasing level of automation has certainly made us more efficient but we can still do better. We have, for example, installed a robot to help with incoming invoices and we are currently working to achieve further leaps in quality in financial accounting with the aid of artificial intelligence. However, the most important thing is maintaining close, personal contact with our business areas. We can only make a valuable contribution when we know what data and information each individual business unit requires and in what form. Close contacts and good communication with one another are absolutely essential.

Dr. Hans-Josef Zimmer: I can only underline what has just been said. That's why for me "next level" also means networking the various skills that we have at our company even more closely – and very importantly – across departments so that we can find solutions by working together.



Dr. Zimmer, an important element of the EnBW strategy is further expanding the share of electricity generation accounted for by renewable energies...

Dr. Hans-Josef Zimmer: ...and this is why we are planning, for example, to also construct Germany's largest solar park in Brandenburg. We want to grow further in the area of renewable energies, particularly as wind power and hydropower did not perform very well – mainly because of the weather – in 2018.

Photovoltaics were not a main focus at EnBW up to now. What has changed?

Dr. Hans-Josef Zimmer: The prices for solar panels have fallen by 90 percent in the last 10 years. This has made solar parks with an output of 50 to 60 megawatts or more an interesting prospect from an economic standpoint, even without government funding. This is just one of the reasons as to why we are now investing in solar energy and establishing a third pillar of business in the area of renewable energies alongside wind power and hydropower. As part of our internationalisation activities, we could also imagine constructing solar parks outside of Germany.

"As part of our internationalisation activities, we could also imagine constructing solar parks outside of Germany."

Dr. Hans-Josef Zimmer

Against the background of the Energiewende, how important is it that EnBW is not just an energy generator and supplier but also a grid operator?

Dr. Hans-Josef Zimmer: Extremely important because ultimately the grid forms the backbone of the Energiewende. Energy that is generated in the north of Germany also needs to be transported to the south of the republic. This requires highly efficient transmission grids. It is also important not to forget the distribution grid, which we will also strengthen. After all, this is where the energy that is produced in lots of small, private units is collected. The fact that we are also grid operators – not just for electricity, but also for gas by the way – gives us a competitive advantage. It allows us to offer our customers solutions across the entire value added chain. A good example is electromobility, because for this we need renewable energies, we have to integrate the charging infrastructure into the grid and we also need to offer attractive products to customers.

Evolution, repositioning and "next level EnBW" – all of these themes are reliant on committed employees. Where do you see the biggest challenges in this area?

Dr. Bernhard Beck: We want to achieve significant leaps forward in every respect. Therefore, it is necessary for us to have competent employees on board in all areas both now and in the future. In this context, we are relying on targeted employee development activities and also on securing





additional skills from outside the company. The market for skilled workers is currently very competitive. We are working closely together with the business units to identify suitable candidates for each position and secure them for our company. Continuous cultural change is one of the things that we will need to take us to the "next level".

Where do you currently stand with respect to this "cultural change" in early 2019?

Dr. Bernhard Beck: We are making good progress and it will enable us to cooperate on an inter-departmental basis to an even greater extent in the future. How can I help you and how can you help me? How can we achieve things even more quickly? These are the questions that we need to ask ourselves across the company so that together we can successfully position ourselves to tackle

new business fields such as electromobility or district development. And whether we are able to identify the opportunities offered by digitalisation is ultimately a question of attitude. After all, cultural change begins in the mind.

"Cultural change begins in the mind, it is a question of attitude."

Dr. Bernhard Beck

Mrs Rückert-Hennen, where are you going to provide impetus as the new member of the Board of Management team?

Colette Rückert-Hennen: I am delighted to be able to continue the successful work carried out by Dr. Beck over many years and believe that there are primarily three main tasks: developing expertise that is fit for the future in all of our employees, an unconditional focus on our customers and diversity – and I don't just mean gender diversity. It will mean that EnBW continues to be the EnBW we all know but also becomes more open at the same time.

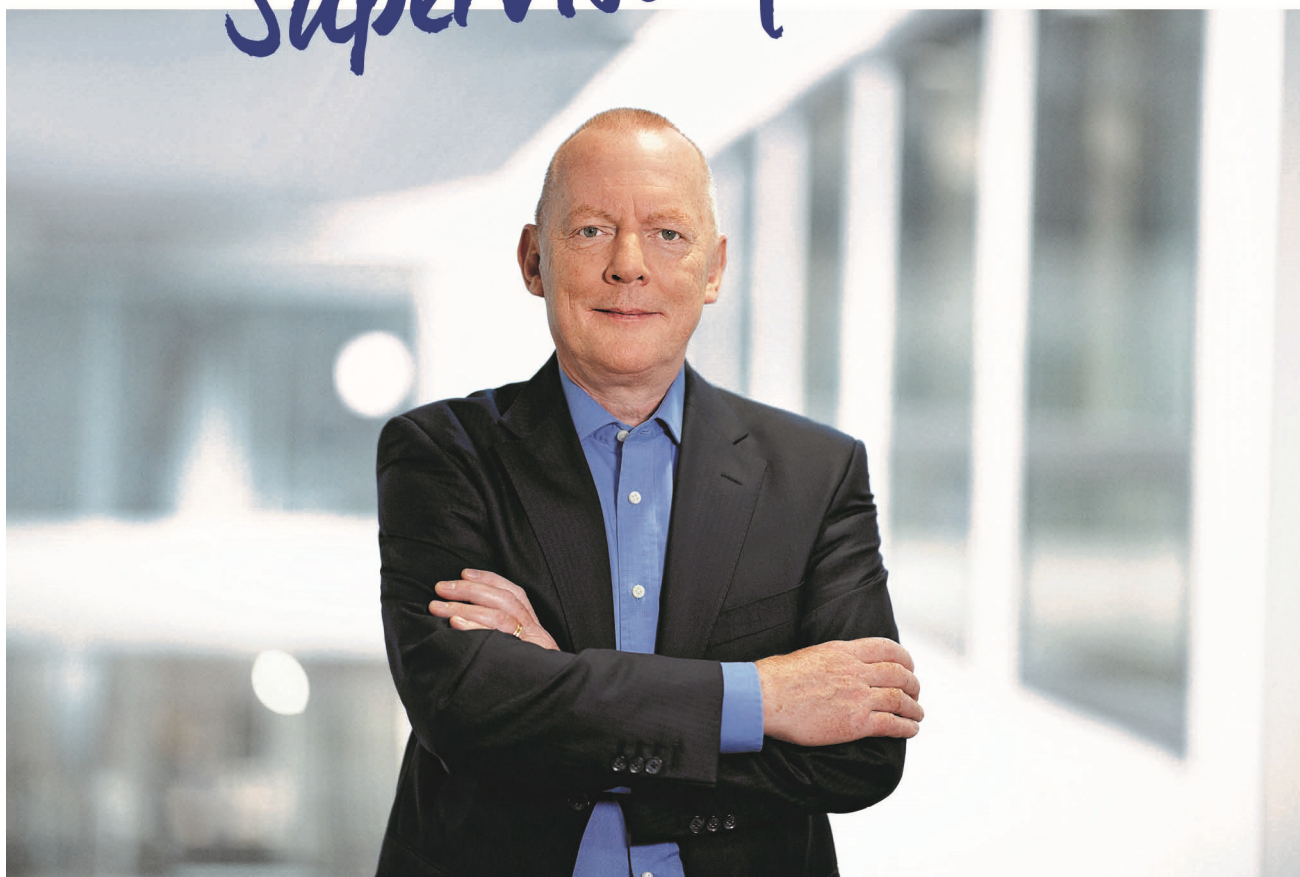
You mean viewing diversity as a strength in other words?

Colette Rückert-Hennen: Yes! Heterogeneous teams comprising young talent, experienced employees and international colleagues have the potential for great strength – for one, united company.

Dr. Mastiaux, EnBW is preserving its own identity but, at the same time, shaping the energy and infrastructure world of tomorrow – would this be a good description of how things will be in 2025?

Dr. Frank Mastiaux: Yes, this is the direction in which we are heading. We will still be an energy company in 2025 but we will also be an infrastructure supplier beyond the traditional energy sector. We will be a partner that not only offers purely technical expertise, but that also has a good understanding of the importance of social interaction and people's needs. In this sense, we will to some extent be returning back to the roots of our company because EnBW was always seen as a "caring company" in the past. In some ways, "back to the future" is an appropriate motto.

Report of the Supervisory Board



Lutz Feldmann
Chairman of the Supervisory Board

The Supervisory Board dutifully and comprehensively performed all of the tasks incumbent on it in the 2018 financial year as required by law and the Articles of Association. It regularly advised the Board of Management on its management of the company and continuously accompanied and monitored all important management measures for the Group. In the process, the Supervisory Board was involved in all decisions of fundamental importance to the company and the Group.

The Board of Management regularly, comprehensively and promptly informed the Supervisory Board about all relevant aspects of intended business policies and other fundamental issues relating to business planning and also provided reasons for any discrepancies between the actual development of business

and the plans and targets reported at an earlier date. In addition, the Board of Management informed the Supervisory Board about the economic position of the company and the Group including, amongst other things, the profitability of the company (especially the equity), the development of business (especially the revenue and earnings, the net assets, financial position and results of operations, as well as HR development at the company) and those business transactions that could be of significant importance for the profitability or liquidity of the company. Furthermore, the Board of Management informed the Supervisory Board about the risk situation of the Group and of individual areas of the Group, corporate strategy and planning, risk management, the internal control system and compliance.

Key topics of the discussions at the plenary meetings of the Supervisory Board

In the 2018 financial year, the Supervisory Board dealt extensively with verbal and written reports and proposals for resolutions issued by the Board of Management at its six ordinary meetings on 16 February, 20 March, 7 May, 12 July, 27 September and 5 December. In addition, it requested reports and information from the Board of Management on individual topics, which were promptly and comprehensively provided in each case. The key topics of the discussions and resolutions in the plenary meetings beyond the themes mentioned above were:

- In-depth consultations and discussions with the Board of Management about long-term strategic planning (with a focus on conventional generation, offshore and onshore wind power, the Turkish business, critical system infrastructure and selective internationalisation within the Renewable Energies business segment)
- Approval for the submission of a bid in order to participate in an offshore wind auction as part of an internationalisation project
- Approval for the submission of a bid as part of the EU tender process "Special technical equipment for grids"
- Regular reporting on the operation, safety and, where relevant, dismantling of the nuclear power plants
- Consultation on the results and the technical and commercial impact of the inspection of Block 2 at the Neckarwestheim power plant
- Approval for the decommissioning of the steam section of Block E at the Lausward site
- Consultation on the grid construction project "SuedLink" of TransnetBW GmbH
- Regular reporting on major investment projects, as well as other projects that form part of the generation strategy (renewable and conventional generation)
- Approval of the sale of VNG Norge AS and its subsidiary VNG Danmark ApS by VNG AG
- Approval for the conclusion of a gas procurement contract with OOO Gazprom Export by VNG Handel & Vertrieb GmbH
- Approval of measures to finance the joint venture Borusan EnBW Enerji yatirimlari ve Üretim A.S. and of the proportionate financing of the expansion of the Kiyiköy wind farm by the joint venture as well as consultations on the effects of the political events and developments in Turkey on the Turkish business of EnBW AG
- Approval of the budget for the 2019 financial year and acknowledgement of the medium-term planning for the period 2020 to 2021 consisting of the Group earnings, finance, investment and personnel plans, as well as the result (HGB) and liquidity plans of EnBW AG
- Defining the level of the short-term variable remuneration for the Board of Management for 2017 and the long-term variable remuneration for the Board of Management for 2015 (performance period 2015 to 2017)
- Examining the appropriateness and adjustments to the remuneration for the Board of Management
- Defining the targets for the short and long-term variable remuneration for the Board of Management for 2019
- Consultation on the legal and economic effects in relation to the suspected irregularities in the business relationships with companies in the Bykov Group
- Reappointment of the Chief Financial Officer Thomas Kusterer for a further period of five years
- Appointment of Colette Rückert-Hennen to take over responsibility for the personnel remit on the Board of Management starting in 2019
- Consultation on the current advertising and image campaign of EnBW AG
- Consultation on the annual compliance and data protection report and the agenda for the following period
- Reporting on the progress and results of the collective remuneration negotiations
- Reporting on the status of information security
- Regular reporting on the development of market prices for electricity, fuels and CO₂
- Regular reporting on the key indicators for occupational safety and health protection and exceptional events in the EnBW Group
- Consultation on investment management of the fully consolidated Group companies and how minority shareholdings held by local authorities are managed
- Approval of the proposal made at the Annual General Meeting on the appointment of the auditor for the 2018 financial year
- Completion of a selection process in accordance with EU Regulation 537/2014 and passing a resolution on the future auditor for the 2019 financial year onwards
- Regular consultation on the development of the financial ratings of EnBW AG
- Approval for the issuing of a so-called "green bond" with a volume of €500 million
- Consultation on the digital transformation of EnBW AG and the EnBW Group
- Appointment of replacement members to and rearrangement of the committees of the Supervisory Board due to members stepping down from the Supervisory Board as part of revising and updating the rules of procedure for the Supervisory Board, setting up a new digitalisation committee (from 2019)

Aside from the meetings, the Supervisory Board was informed in writing by the Board of Management about all business transactions of particular importance for the company or the Group. In addition, there was ongoing communication between the Chairman of the Supervisory Board and the Board of Management, particularly with the Chairman of the Board of Management, in order to discuss issues relating to the strategic positioning, planning, business development, risk situation, risk management, compliance, important individual transactions and currently pending decisions.

There was a consistently very high attendance rate at the individual meetings of the Supervisory Board. The majority of the members of the Supervisory Board attended all meetings of the Supervisory Board. No member of the Supervisory Board participated in less than half of the meetings.

Work of the committees

In order for the Supervisory Board to perform its functions efficiently, the committees it set up once again met regularly in the past financial year. The respective members of the committees are listed on p. 146 of the Integrated Annual Report 2018. The Chairpersons of the committees regularly reported comprehensively on the work of the committees at each subsequent plenary meeting of the Supervisory Board.

Corporate governance

The Supervisory Board also paid close attention to the various issues relating to corporate governance in the 2018 financial year. These issues are described in detail in the corporate governance report. The corporate governance report is part of the (Group) declaration of corporate management, which the company has published on its website (www.enbw.com/corporate-governance) in accordance with section 289f (1) sentence 2 and section 315d sentence 2 of the German Commercial Code (HGB).

Audit of the annual and consolidated financial statements

Following a thorough examination by the audit committee, the Supervisory Board undertook a detailed review of the annual financial statements and consolidated financial statements as of 31 December 2018 that were audited and issued with an unqualified audit opinion by KPMG AG Wirtschaftsprüfungsgesellschaft, and of the combined management report including the non-financial declaration for the 2018 financial year. The final results of its own reviews did not lead to any reservations

on behalf of the Supervisory Board. It approved the audit results of the independent auditor and endorsed the annual financial statements prepared by the Board of Management as of 31 December 2018 – which have thus been ratified – and the consolidated financial statements as of 31 December 2018, as well as the combined management report including the non-financial declaration for the 2018 financial year.

Reference to the complete version of the report of the Supervisory Board

Further details on the topics “Work of the committees”, “Corporate governance”, “Audit of the annual and consolidated financial statements” and “Personnel changes at the level of the Board of Management and Supervisory Board” can be found in the full version of the Report of the Supervisory Board made available to the public on the company’s website at www.enbw.com/corporate-governance.

Karlsruhe, 27 March 2019

The Supervisory Board



Lutz Feldmann
Chairman

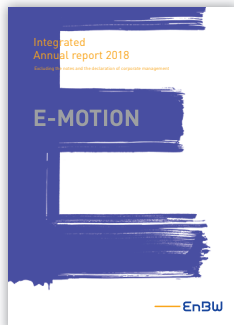
About this report

Integrated reporting

In this Integrated Annual Report – as in previous years – EnBW also takes ecological and social aspects of the company's activities into account as well as economic aspects. We have published an Integrated Annual Report based on the recommendations of the International Integrated Reporting Council (IIRC) since the 2014 financial year, with the aim of achieving a holistic representation of the performance of the company. EnBW has been an active supporter of integrated reporting and the IIRC from the very beginning. We participate in the ongoing development of integrated reporting in various bodies such as the IIRC Business Network and IIRC Framework Panel. Thomas Kusterer, member of the Board of Management of EnBW, represents EnBW as a member of the IIRC and has also been a member of the EU Technical Expert Group on Sustain-

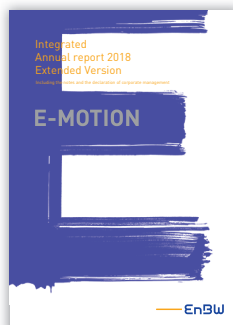
able Finance (TEG) (Glossary, p. 155) since July 2018. Using the EnBW 2020 strategy as a basis, EnBW applies the concepts behind integrated reporting to strive for the comprehensive integrated management of the company. By presenting financial and non-financial corporate goals – the achievement of which is measured using key performance indicators – we are seeking to promote integrated thinking within the company and underline the importance of being comprehensively oriented towards performance and our stakeholders. The corporate performance of EnBW is thus not only measured by financial results, as the short to long-term success of the company is also dependent on the decisions EnBW takes in response to the constantly changing economic, ecological and social conditions. More about integrated reporting at EnBW can be found at www.enbw.com/integrated-reporting.

Financial publications 2018



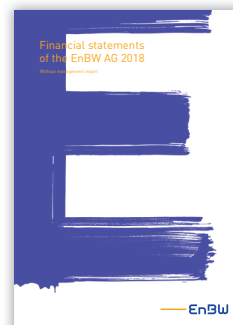
Integrated Annual Report 2018

This report is published in print and in PDF format. It contains the combined management report of the EnBW Group and EnBW AG, as well as the condensed version of the consolidated financial statements without the notes to the financial statements. Selected content from this report and additional information on aspects of sustainability can be found in the online report at www.enbw.com/report2018.



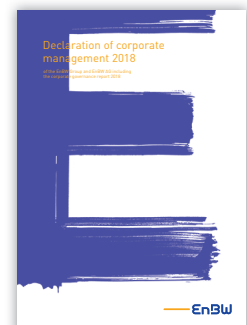
Integrated Annual Report 2018 Extended Version

The extended version of the Integrated Annual Report 2018 contains the complete annual financial statements of the EnBW Group, including the notes as well as the declaration of corporate management. This document is only available as PDF in German and English.



Financial statements of the EnBW AG 2018

This document is published in PDF format and contains the consolidated financial statements.



Declaration of corporate management 2018

of the EnBW Group and EnBW AG including the corporate governance report 2018. This document is contained in the Integrated Annual Report 2018 – extended version, but is also available as a PDF file in German and English.

All documents relating to the financial statements for the 2018 financial year can be found at www.enbw.com/report2018-downloads. We publish the quarterly statements and the six-monthly financial report at www.enbw.com/financial-publications.

Together with existing legal requirements for strengthening non-financial reporting by companies in their management reports and Group management reports (CSR Directive Implementation Act), the IIRC reporting principles and elements create the foundations for integrated reporting. Some of the recommendations found in the IIRC reporting principles cannot be fully implemented because the different regulations are not compatible with each other. The Integrated Annual Report 2018 of EnBW contains the combined management report of the EnBW Group and EnBW AG in accordance with the regulations found in commercial law. The full consolidated financial statements including the notes to the consolidated financial statements and the (Group) declaration of corporate management 2018 including the corporate governance report 2018 are not included in this report. However, they are available to download at www.enbw.com/report2018-downloads.

The contents of this Integrated Annual Report exclusively serve to provide information and do not constitute an offer or an investment recommendation. Please take this into consideration and also refer to the other important notes on p. 160.

Continued development of integrated reporting

We have made our reporting more concise and transparent over the last few years to meet the increased needs of stakeholders for more information. In the Integrated Annual Report 2018, we have continued this development further and stabilised the process. Following substantial changes in the previous year due to the implementation of the legal requirements for

strengthening non-financial reporting by companies in their management reports and Group management reports (CSR Directive Implementation Act) and the associated preparation of a non-financial declaration, another main focus this year was stabilising the internal processes with respect to reporting and to continuity in external reporting.

Through the participation of the EnBW Chief Financial Officer on the international Task Force on Climate-related Financial Disclosures (TCFD) (Glossary, p. 155), EnBW actively supports the strengthening of climate-related risk reporting by companies (www.enbw.com/responsibility). In this Integrated Annual Report, we have taken into account the recommendations published by the TCFD in June 2017. The aim is to present how EnBW handles climate-related risks in a clearer and more understandable way. Alongside an overview of the EnBW scenario analysis to present the robustness of our business model in relation to climate protection (p. 39), a further development in the 2018 financial year was the adjustment of the investment guidelines for the EnBW Group. The influence that significant investment projects will have on the environment and thus on the climate protection targets and figures will, in future also be presented. This will act as the basis for approval by the investment committee of the Board of Management. An overview of the contents for this complex range of topics can be found in the index of TCFD recommendations on p. 136.

We will also strive in future years to continuously improve our integrated reporting. Our plans for 2019 thus include the continuous further development of the content in this report in accordance with the requirements for a non-financial declaration and the disclosures recommended by the TCFD.

Main elements of the further development of the Integrated Annual Report 2018 of EnBW

Topic	Further development	Page reference
Materiality analysis	<ul style="list-style-type: none"> › The materiality analysis process was updated in the 2018 financial year › Closely linked to the process for developing the company's strategy 	page 59 f.
TCFD recommendations	<ul style="list-style-type: none"> › Stricter governance (anchoring climate protection targets in the investment process) 	page 88, page 136 (Index)
Interdependencies	<ul style="list-style-type: none"> › Continuation and stabilisation of already implemented presentation 	page 53 ff.
Non-financial declaration	<ul style="list-style-type: none"> › Establishment and stabilisation of internal processes › Further development of content in accordance with the requirements of the CSR Directive Implementation Act 	page 135 (Index)
Report on opportunities and risks	<ul style="list-style-type: none"> › Continuation of the already implemented presentation of the non-financial opportunities and risks with respect to the non-financial declaration and the TCFD recommendations 	page 114 ff.

Basis for the presentation of the report

The information about the net assets, financial position and results of operations of the EnBW Group is based on the requirements of the International Financial Reporting Standards (IFRS), and, where applicable, German commercial law and German accounting standards (GAS). In this context, sections 289b and 315b HGB "Obligation to provide a non-financial (Group) declaration" must be applied from the 2017 financial year. As in the previous year, we have fully integrated the non-financial declaration into the combined management report based on our integrated reporting. Internal control mechanisms ensure the reliability of the information presented in this report. Furthermore, this Integrated Annual Report is based on the recommendations for reporting principles and reporting elements contained within the IIRC framework.

The selection of topics and the level of detail given to them in this Integrated Annual Report is based, as in previous years, on their materiality. The process pays particular attention to the key themes discussed internally in the management bodies and addressed in the external communication (p. 59 f.) and was continuously incorporated into the strategy in the 2018 financial year.

The reporting of sustainability issues has been based since the 2017 financial year on the GRI standards, including the Electric Utilities Sector Supplement. Further information on the GRI Content Index can be found at www.enbw.com/gri-index. Further information on the fulfilment of other sustainability standards is available on our website at www.enbw.com/performance-indicators. Our sustainability reporting also complies with the Communication on Progress requirements for the UN Global Compact and is based to an increasing extent on the UN Sustainability Goals (www.enbw.com/green-bond). These two framework standards, as well as the UN 2030 Agenda for Sustainable Development, have been used as the basis for the non-financial declaration.

All data and calculation methods used for this Integrated Annual Report are based on German and international standards for financial and sustainability reporting. The responsible specialist units applied representative methods in each case for the collection of all data and information for the reporting period.

The reporting period comprises the 2018 financial year. We took into account all relevant information up to 7 March 2019. Along with EnBW AG, with its headquarters in Karlsruhe, Germany, the group of consolidated companies of EnBW for financial reporting also includes all of its key subsidiaries. The reporting limits for the non-financial performance indicators correspond to the scope of consolidation for financial reporting, unless otherwise stated. In addition, we have also taken other issues into account in various chapters of this Integrated Annual Report, especially against the background of the legal requirement for a non-financial declaration, in order to provide a holistic representation of the performance of the company. The index for the non-financial declaration of the EnBW Group and EnBW AG is presented on p. 135.

Independent auditing and evaluation

The condensed financial statements for the 2018 financial year that form part of the Integrated Annual Report do not include the notes to the consolidated financial statements and the (Group) declaration of corporate management 2018, including the corporate governance report 2018. The full set of consolidated financial statements – including the notes to the consolidated financial statements – and the management report for the company and the Group are included in the extended version of the Integrated Annual Report 2018. They were audited for the 2018 financial year by KPMG AG Wirtschaftsprüfungsgesellschaft as the auditor and Group auditor elected by the Annual General Meeting of EnBW Energie Baden-Württemberg AG on 8 May 2018. Following an extension of the auditing mandate by the Supervisory Board, KPMG AG Wirtschaftsprüfungsgesellschaft also audited the non-financial declaration with reasonable assurance. The high level of integration in the whole reporting process is underlined by this audit of the complete Integrated Annual Report with reasonable assurance. KPMG AG Wirtschaftsprüfungsgesellschaft arrived at the overall conclusion that the entire audit did not lead to any reservations and issued an unqualified audit opinion. This includes the non-financial declaration. The full set of consolidated financial statements and the combined management report for the company and the Group for the 2018 financial year, as well as the unqualified audit opinion issued by the auditor, are accessible to the public on the website of EnBW Energie Baden-Württemberg AG at www.enbw.com/report2018-downloads.

Combined management report

of the EnBW Group and EnBW AG

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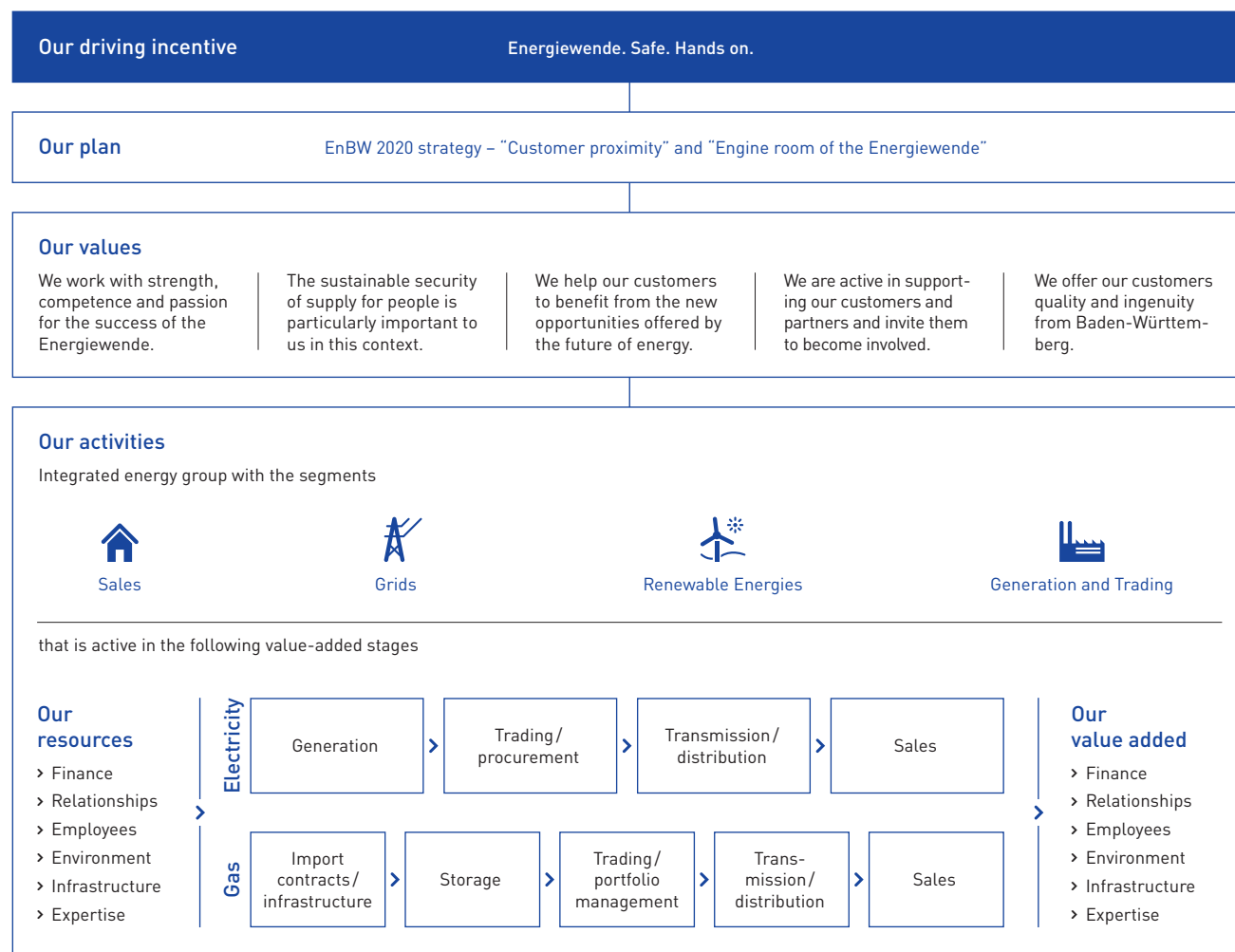
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Fundamentals of the Group

Business model

Business principles

Business model



As an integrated energy company, EnBW operates along the entire energy industry value chain in four segments: Sales, Grids, Renewable Energies, and Generation and Trading. We draw on a variety of resources – from finances through to expertise – for our corporate activities. As a result of the efficient application of these resources, we create value for ourselves and our stakeholders. EnBW has a **diversified business portfolio** with a once again increasingly favourable risk-return profile. Following our realignment as part of the Energiewende, the overall share of adjusted EBITDA accounted for by the regulated grid business and the share accounted for by renewable energies are both increasing.

We have closely analysed future revenue sources in the energy industry to **further develop our business portfolio**. According to our estimations, revenue flows in the energy industry will shift considerably. Renewable energies, grids and the decentralised solution business are growing in importance (p. 48). On this basis, we have developed the EnBW 2020 strategy guided by the principle “Energiewende. Safe. Hands on.”, which charts the course for the future development of our business model and strengthens the future viability of the company. The two complementary operating models of “Customer proximity” and the “Engine room of the Energiewende” lie at the core of the EnBW 2020 strategy (p. 49).

In the **development of the EnBW strategy post 2020**, we want to increasingly place our focus on the aspect of infrastructure within existing business fields and also exploit new growth opportunities above and beyond the energy sector (p. 50).

With strength, competence and passion, EnBW is committed to the **success of the Energiewende** and guarantees a sustainable and reliable supply of energy. We invite our customers and partners to join us in shaping the future energy landscape and benefit from new opportunities. We convince our customers through quality and creativity, and are acutely aware of our responsibility towards our employees. We are active along the entire electricity and gas value chain. Thanks to our comprehensive and profound system competence, we remain excellently positioned despite the fundamentally changed framework conditions resulting from the Energiewende. Due to the increasing decentralisation of the energy system, we have firmly anchored customer orientation and joint business development with partners into our company. Our current activities are governed more than ever by the fostering of dialogue, a solution-based approach and the sense of partnership.

Digitalisation is having a greater and greater influence on the way we think and act in our company. EnBW has been rigorously pushing forward its own digitalisation transformation since 2015 and we are now working on more than 180 individual projects – the so-called digitalisation initiatives. We are focussing here on three main areas: **products and processes**, **technologies** and **people and organisations**. Products and processes deals, on the one hand, with optimising processes in the company with the aid of digital technologies or completely rethinking them. This includes, for example, not only the digital interaction with customers but also the digitalisation of our core business processes such as our accounting and billing. On the other hand, the development of digital business models and digital products, as well as making better use of existing data, are important goals (p. 94 ff.). Technologies act as the foundation for digitalisation. The use of sensors for gathering data even from older power plants is just as important for EnBW as artificial intelligence and the Internet of Things (p. 64 ff.). We are also looking in-depth at the fast-developing blockchain technology that promises great potential for change. In order to verify that this is the case, we are investing in the development of specific applications in this area. The third area of people and organisations deals with the question of what skills our employees require to work in a digital environment and how they can best cooperate with each other. EnBW is introducing new working methods such as agile project management methods and training some of its employees and managers so that they can identify and exploit the opportunities offered by digitalisation in their own working environments (p. 96 ff.). The graphic on p. 55 shows the interdependencies between key performance indicators using digitalisation initiatives as an example.

Assessment of the robustness of our business model in terms of climate protection

EnBW has analysed the robustness of its business model based on the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) (Glossary, p. 155). The EnBW strategy takes into account the demands of the Energiewende and climate protection. Accordingly, an evaluation of the way the Energiewende could possibly develop over the coming years, including the opportunities and risks for the business of EnBW, constitutes a decisive component of our market analyses (p. 119).

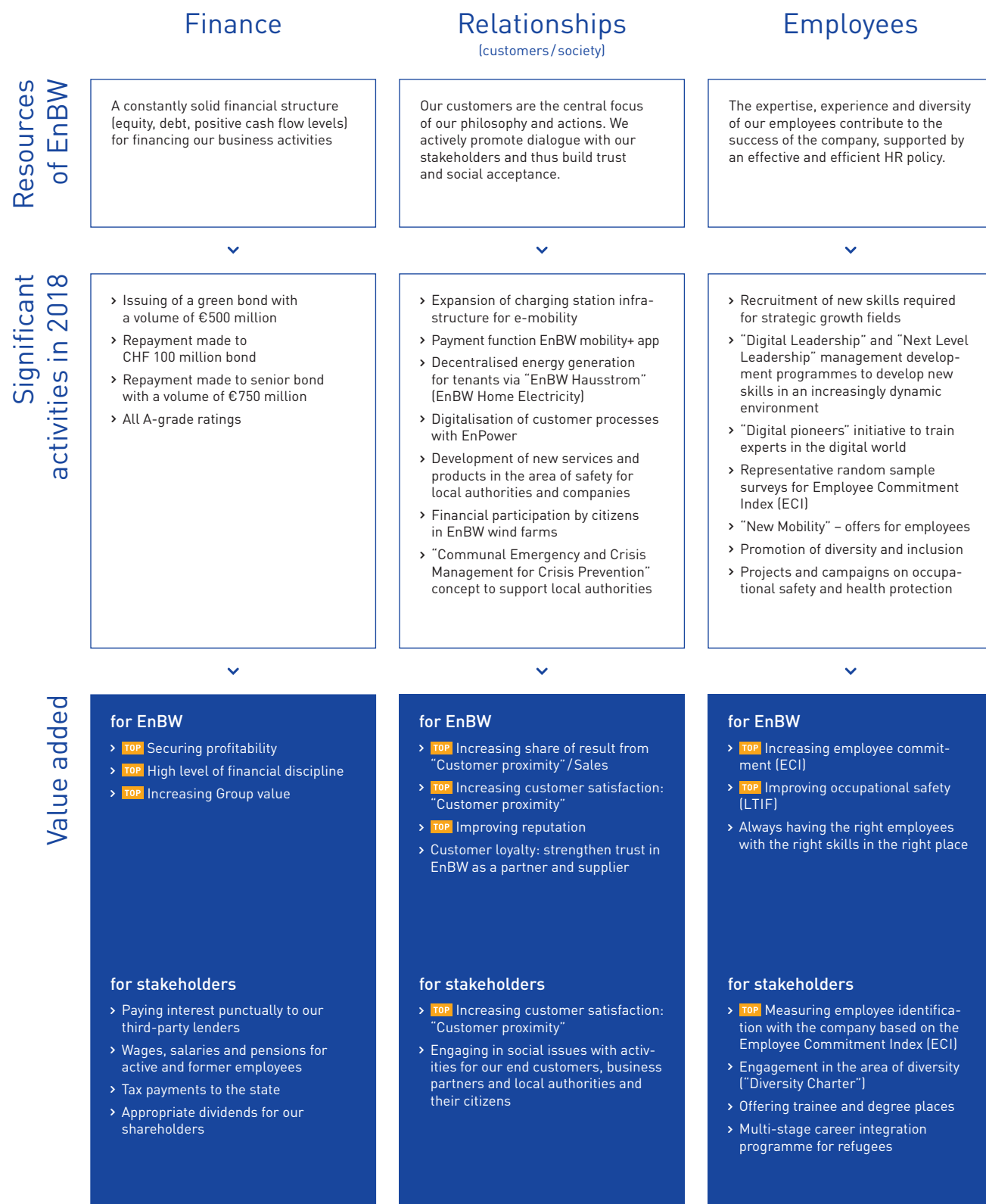
The future development of the German and European electricity markets is particularly important in this context. As part of the analysis, we initially create scenarios for the main input parameters – such as the development of demand, changes to the power plant portfolio or assumptions about price-relevant fuels. Using these as a basis, possible paths for the long-term development of electricity prices – one of the most important market factors for the business of EnBW – can be derived. The scenarios are geared towards achieving the international climate protection targets (such as limiting greenhouse gas concentrations to 450 ppm [parts per million]) and the resulting targets and measures derived by the German government (a reduction of at least 80% in CO₂ emissions by 2050 in comparison to 1990). The results obtained from applying this model not only provide information on electricity prices but also on other relevant market trends in areas such as renewable energies or electromobility. Overall, these results enable us to assess the robustness of our strategic planning with consideration to developments caused by climate change.

In order to evaluate the robustness of our business model against the backdrop of social efforts to limit climate change and achieve the two-degree target, the **following scenarios** are used:

- > The Energiewende continues to progress on its current path with a focus on the expansion of renewable energies in the electricity sector
- > Rigorous alignment towards climate protection in the context of the efforts being made worldwide to achieve the ambitious climate protection targets
- > Slower reorganisation of the energy system against the background of weaker economic growth below the long-term potential
- > The Energiewende is confined in an international environment that is oriented toward strong economic growth, also in conventional industrial sectors

Value added

Value added for EnBW and its stakeholders



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Key performance indicators, page 51 ff.
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Value added for EnBW and its stakeholders

The aim of the corporate activities of EnBW is to add value in the short, medium and long term. This reflects corporate success, as well as competitiveness and future viability, and does not only depend on the company itself but also on the business environment, relationships with stakeholders (p. 59 ff.) and the application of a variety of different resources. As a result of the efficient use of these resources within the scope of our activities, we create value for ourselves and our stakeholders. We associate the concept of sustainable economic development with our aspiration to conduct all of our business activities in a responsible way. This is closely associated with our reputation, that is the public opinion our stakeholder groups hold about EnBW (p. 94). Information on the interdependencies between the key performance indicators can be found on p. 53 ff.

Value added statement

The value added statement indicates the degree to which EnBW contributes to the prosperity of society (stakeholders) and to further economic development, particularly in Germany and

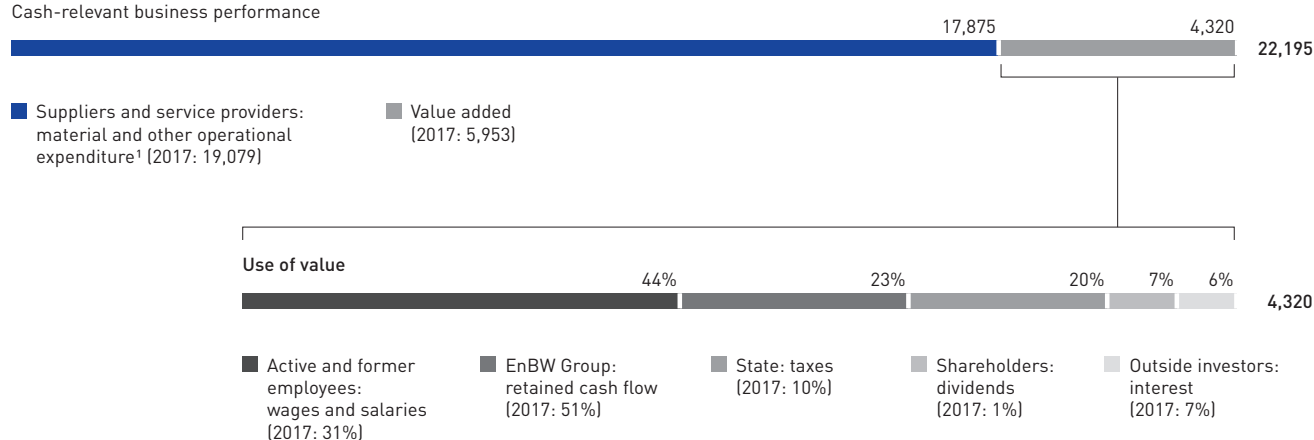
Baden-Württemberg, using its financial resources. Further information on the dialogue with our stakeholders is summarised in the chapter “In dialogue with our stakeholders” (p. 59 ff.).

We define value added as the cash-relevant business performance of EnBW in the past financial year minus cash-relevant expenses. The value added is derived from the cash flow statement and corrected based on the use of funds. Value added created in the EnBW Group amounted to 19.5% in the reporting year (previous year: 23.8%). As well as being used in the form of wages, salaries and pension payments for active and former employees, a further share is dedicated to payments to the state in the form of income taxes and electricity and energy taxes. After consideration of all stakeholder groups, the retained cash flow of the EnBW Group is available to the company for future investments without the need to raise additional debt (p. 88). Due to the reimbursement of the nuclear fuel rod tax (Glossary, p. 154), retained cash flow was significantly higher in the previous year. The reimbursement will be used by EnBW for the debt repayment in 2018 and also for investment in the period from 2018 to 2020.

Value added of the EnBW Group in € million

Creation of value

Cash-relevant business performance



¹ Includes interest and dividends received, as well as the dedicated financial assets contribution. | As of 31/12/2018

Group structure and business radius

EnBW is organised according to the model of an integrated company. EnBW AG is managed through business units and functional units: Core operating activities along the entire energy industry value chain are concentrated in the business units. The functional units carry out Group-wide support and governance tasks. The EnBW Group consists of EnBW AG as the parent company and 171 fully consolidated companies, 23 companies accounted for using the equity method and three

joint operations. Further information on the organisational structure can be found in the chapter “Corporate governance” under “Management and supervision” on p. 56 f.

Baden-Württemberg

EnBW has its roots in Baden-Württemberg. We are active here along the entire energy industry value chain and are positioned as a market leader. In the process, we are supported by a series of key subsidiaries.

Germany and Europe

We also operate throughout Germany and in Europe. Our entry onto the Swedish market via our Swedish subsidiary EnBW Sverige and initial activities in France, Taiwan and the USA demonstrate our focus on **selective internationalisation** in the area of renewable energies. We have already been represented in Denmark and Sweden by our subsidiary Connected Wind Services since 2016. In Turkey, we are active in the renewable energies sector with our Turkish partner Borusan.

The **most important participating interests** of EnBW in relation to the value added chain and their contribution to the result of the EnBW Group include the following groups of companies:

Energiedienst Holding (ED), based in Laufenberg, Switzerland, has around 900 employees and is an ecologically oriented German-Swiss listed company with various subsidiaries that is active in South Baden and Switzerland. ED exclusively generates green electricity primarily using hydropower. Alongside the supply of electricity, this group of companies offers its customers smart, networked products and services, including photovoltaic plants, heat pumps, electricity storage systems, electromobility and e-car sharing.

Pražská energetika (PRE), based in Prague, Czech Republic, has just over 1,500 employees and its core business activities include the sale of electricity and gas, the distribution of electricity in Prague, the generation of electricity from renewable energies and the provision of energy services. PRE is the third largest electricity supplier in the Czech Republic and the operator of a high-quality and reliable distribution grid. As part of its activities, PRE promotes the use of modern technological solutions and advises on the implementation of innovative technologies and achieving energy savings.

Stadtwerke Düsseldorf (SWD) is one of the largest municipal energy supply companies in Germany. It has over 3,140 employees and supplies SWD customers in Düsseldorf and the surrounding region with electricity, natural gas, district heating and drinking water, as well as providing waste disposal and street cleaning services in its city. In addition, the company's focus is placed on the needs-based development of networked urban infrastructures in the areas of energy, mobility and property.

VNG is based in Leipzig and has around 1,120 employees. It is a horizontally and vertically integrated corporate group in the European gas industry with more than 20 companies in six countries. It concentrates on its business areas of Gas Trading & Service, Gas Transport and Gas Storage. Using this core expertise as a basis, VNG is increasingly placing its focus on new business fields. These include, amongst others, biogas, digital infrastructure and district solutions. Through its independent transmission system operator ONTRAS Gastransport GmbH, the company operates the second largest German gas transmission grid.

Customers and sales brands

EnBW supplies **around 5.5 million customers** with energy and provides them with energy solutions and energy industry services. EnBW is one of the leading providers of energy and environmental services in Germany. Another focus is placed on the development of our cooperation with municipal utilities and local authorities. The supply of district heating and drinking water is also part of the range of services offered by EnBW.

EnBW and its subsidiaries differentiate between two customer groups: The **B2C** customer group includes retail customers, small commercial enterprises, the housing industry and agriculture. The **B2B** customer group encompasses major commercial enterprises and industrial customers, as well as redistributors, municipal utilities, local authorities and public entities.

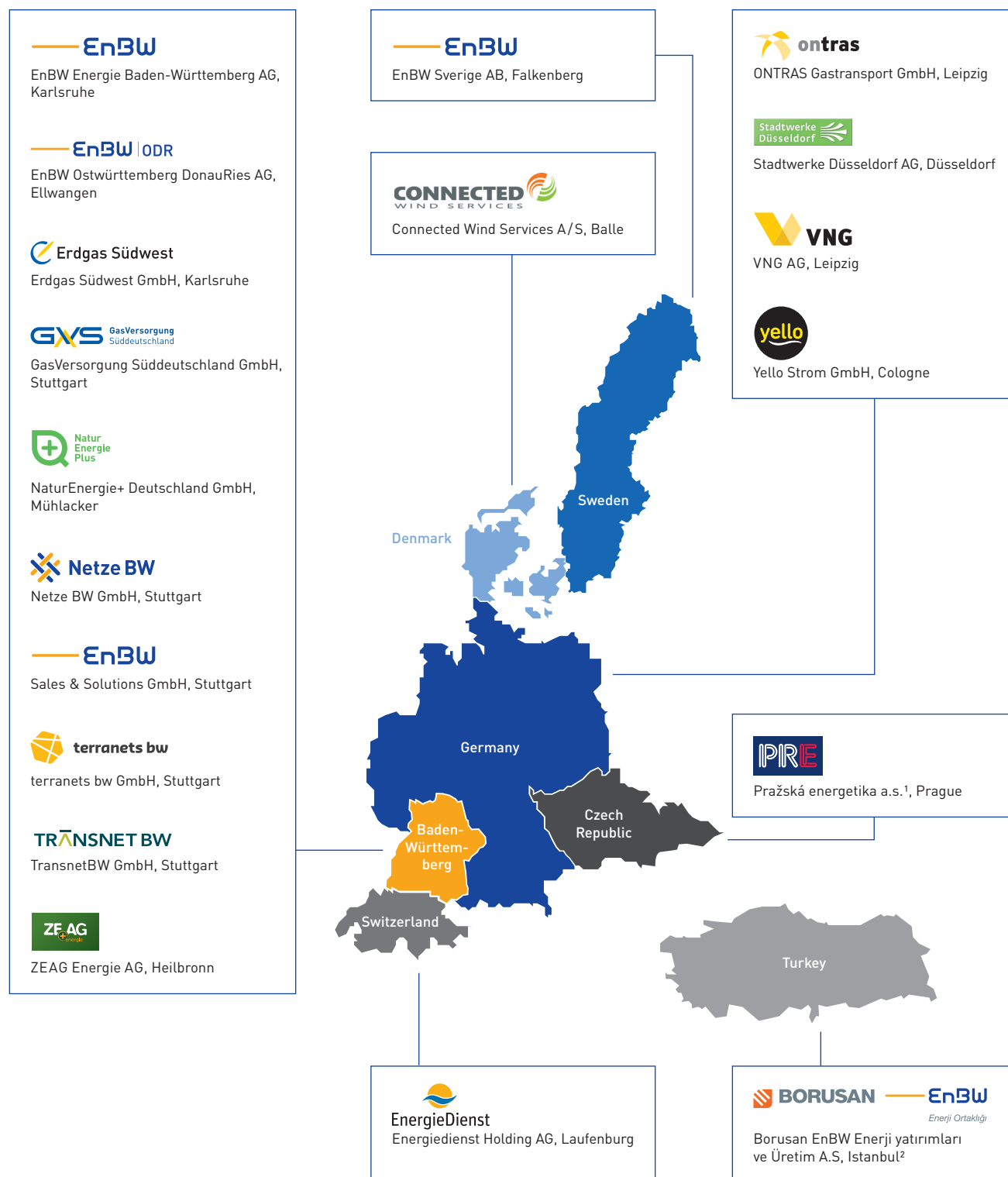
With its strong sales brands, EnBW is close to its customers and is consistently oriented to their needs. As an active partner for the energy system of the future, EnBW sells electricity, gas, district heating, energy industry services, energy solutions and drinking water in the B2C sector under the **EnBW brand** (www.enbw.com). These products and services focus on Baden-Württemberg. EnBW primarily sells electricity and gas, as well as solutions and digital services related to energy, to retail and commercial customers throughout Germany through the **Yello brand** (www.yello.de). The needs of ecologically oriented customers are addressed across Germany through the **NaturEnergiePlus brand** (www.naturenergieplus.de).

In addition, EnBW subsidiaries are active in the B2B sector under the **GVS brand** and in the B2C and B2B sectors under the **Erdgas Südwest, ODR and ZEAG brands**.

Under the **NaturEnergie brand** (www.naturenergie.de), ED sells green electricity and gas to retail customers in South Baden. It caters for business customers across Germany and in Switzerland. PRE sells electricity, gas, energy services and mobile communication services to retail and commercial customers in Prague and the surrounding region under the **PRE brand** (www.pre.cz). PRE also supplies electricity, gas and energy services to industrial customers across the Czech Republic under the PRE brand. Electricity and gas are sold in the Czech Republic under the **Yello brand** (www.yello.cz), primarily via online channels to households and commercial customers. SWD supplies retail and commercial customers in the B2C sector, as well as customers in the agricultural sector, with electricity, gas, heating and drinking water under the **Stadtwerke Düsseldorf brand** (www.swd-ag.de). In the B2B sector, the range of services is directed at business and industrial customers and marketed across Germany, with a focus on North Rhine-Westphalia. VNG supplies gas to municipal utilities, regional supply companies and industrial and commercial companies in Germany and Europe – from full-service provision through to highly flexible products – under the **VNG brand** (www.vng.de). The company goldgas GmbH, a subsidiary of VNG, sells gas and electricity – especially to private households, commercial customers and property management companies in Germany – under the **goldgas brand** (www.goldgas.de).

Selected companies

Selected EnBW companies in Baden-Württemberg, Germany and Europe



1 Directly and indirectly held shares.
2 Not fully consolidated, accounted for using the equity method.

The full list of shareholdings can be found in the notes to the consolidated financial statements under (36) "Additional disclosures". The full set of consolidated financial statements is published at www.enbw.com/report2018-downloads. Further information: www.enbw.com/shareholdings.

Our operating segments

Sales segment

The Sales segment encompasses sales of electricity and gas, as well as the provision of energy industry services such as billing services, energy supply and energy saving contracting (Glossary, p. 153) and new energy solutions. In this area, we exploit our broad energy industry and process-based expertise, as well as our existing relationships with our customers. Against the background of advancing digitalisation, we are optimising, amongst other things, our customer processes and expanding our digital range of products (p. 94 ff.).

Grids segment

The Grids segment encompasses the transmission and distribution of electricity and gas, the provision of grid-related services, e.g. the operation of grids for third parties, and the supply of water. Value added in the Grids segment is based on the existing infrastructure and the process know-how necessary to operate and expand this infrastructure efficiently. Furthermore, value added is anchored in the numerous close relationships with local authorities and citizens. The grid business will be expanded further at all voltage levels in the course of the Energiewende and will thus contribute to supply reliability. For example, our subsidiary TransnetBW, together with partners, is currently involved in planning two high-performance north-south connections using high-voltage DC transmission technology (HVDC) (Glossary, p. 153). Partnerships will also play a more important role in the distribution grid in future as we efficiently manage our customers' grid installations and infrastructures and prepare them to meet the new requirements.

Renewable Energies segment

The company's activities in the area of power generation from renewable energy sources – where we utilise the natural resources of water, wind and sun – are combined under the Renewable Energies segment. We are expanding renewable energies, above all in the areas of onshore and offshore wind energy and photovoltaics, and broadening our activities along the value chain (p. 102). The principle of partnership plays a central role in this context and we offer potential investors such as local authorities and private citizens, whom we attract with the aid of targeted models, the chance to participate in renewable energy projects. The value we add in this segment encompasses project development, construction and efficient operation, as well as the repowering (Glossary, p. 154) of the plants in the future.

Generation and Trading segment

The Generation and Trading segment encompasses electricity generation, the storage of gas, the trading of gas and electricity, the gas midstream business, the provision of system services (Glossary, p. 154) for the operators of transmission grids, the operation of reserve power plants, district heating, environmental services and the dismantling of power plants. This business is primarily based on the generation of electricity and heat from our coal, gas, pumped storage and nuclear power plants and our operational and optimisation expertise. While wholesale market prices have recovered, spreads (Glossary, p. 154) have remained at a low level (p. 78 f.). Our fossil fuel power plants will thus also remain under pressure in the future. The power plants operating on the market, as well as those power plants transferred to the grid reserve, make a significant contribution to the security of supply in Germany. As equal partners, we support our customers in the integration of their power plants into the market using our services and expertise – such as in the area of direct distribution.

Overview of the segments



Sales

Tasks

Sale of electricity, gas, energy industry services and energy solutions; energy supply and energy-saving contracting; cooperation with local authorities; collaboration with municipal utilities

Significant events in 2018

- > Expansion of electromobility: Further expansion of the charging infrastructure, also together with national and international cooperation partners, expansion of the product portfolio, EnBW mobility+ app with 22,000 charging stations across different countries, simplification of the pricing system when charging with the "Full with E" campaign
- > Contracting: Modernisation and expansion of the combined heat and power plant at the Walsrode energy park, winning the Contracting Award, numerous concepts for the development of public properties
- > Further acquisition of large customers in area of energy industry billing services
- > Further digitalisation of customer processes and digital interaction with customers (e.g. via EnPower)
- > Further intensification of the cooperative partnership models with municipal utilities and local authorities, such as in the SAFE project (core charging network for electric vehicles for electric cars in Baden-Württemberg)
- > Expansion of services for local authorities in the area of urban planning and digital infrastructures



Grids

Tasks

Transmission and distribution of electricity and gas as well as expansion of HVDC connections; provision of grid-related services; water supply; guaranteeing the security of supply and system stability

Significant events in 2018

- > ULTRANET HVDC project: further preparations for the construction of the converter at the site in Philippsburg by TransnetBW in cooperation with EnBW Kernkraft
- > SuedLink HVDC-project: plans adapted to meet the political guidelines (priority to underground cables) and other preparations for the construction of the converter at the site in Leingarten by TransnetBW
- > Investment by ONTRAS in the EUGAL European pipeline project as part of ongoing construction
- > Publication of the new expansion plan for the 110 kV high-voltage grid by Netze BW
- > Netze BW was the first metering point operator to install a certified smart metering system for a customer
- > #NETZlive: First transmission of forecasting data via the automated data exchange process between Netze BW and TransnetBW
- > Grid integration for the expansion of charging infrastructure for electromobility; "E-Mobility Avenue" pilot project by Netze BW to examine charging behaviour and the effects on the electricity grid
- > Upgrading the grids and connecting renewable energy power plants

Sales in 2018

56.3 billion kWh
gas (B2C/B2B)



36.4 billion kWh
electricity (B2C/B2B)

Number of B2C and B2B customers

Around 5.5 million

Key figures in 2018

3,657 employees
(as of 31/12/2018)

€270.6 million
adjusted EBITDA in 2018

€132.4 million
investment in 2018

12.5%
share of adjusted EBITDA in 2018

Development of adjusted EBITDA (in € billion)



Grid lengths in 2018

151,000 km
Electricity transmission and distribution grid

24,000 km
Gas transmission and distribution grid

Transmission volumes in 2018

64.3 billion kWh
electricity

33.3 billion kWh
gas

Key figures in 2018

8,920 employees
(as of 31/12/2018)

€1,176.9 million
adjusted EBITDA in 2018

€967.4 million
investment in 2018

54.5%
share of adjusted EBITDA in 2018

Development of adjusted EBITDA (in € billion)





Renewable Energies

Tasks

Project development and management; construction and operation of renewable energy power plants

Significant events in 2018

- › Continued construction of the offshore wind farms EnBW Hohe See and EnBW Albatros with total capacity of 609 MW
- › Selective internationalisation with entry onto the Swedish market and initial activities in France, Taiwan and the USA
- › Further expansion of the onshore portfolio: Through the acquisition and construction of 14 wind farms with total output of 178 MW in Germany and Sweden, EnBW has expanded the total output from onshore wind power to 718 MW
- › Decision to invest and start of construction of first onshore wind farm in Sweden
- › Opportunity for citizens to participate in seven newly built EnBW wind farms
- › After the construction of 15 photovoltaic plants with an output of 22 MW, EnBW has a total photovoltaics portfolio of 99 MW

Generation portfolio in 2018¹

7,203 GWh
generation

1,955 MW
installed output

Key figures in 2018

1,144 employees
(as of 31/12/2018)

€297.7 million
adjusted EBITDA in 2018

€476.0 million
investment in 2018

13.8%
share of adjusted EBITDA in 2018

Development of adjusted EBITDA (in € billion)



Generation and Trading

Tasks

Advisory services, construction, operation and dismantling of thermal power plants; storage of gas; trading of electricity and gas, provision of system services; operation of reserve power plants; gas midstream business, district heating; waste management/environmental services; direct distribution of renewable energy power plants

Significant events in 2018

- › Completion of the gas-fired CHP power plant in Stuttgart-Gaisburg with a heating capacity of up to 210 MW
- › Extension of the inspection of Block 2 of the Neckarwestheim nuclear power plant to complete an extensive inspection programme
- › Dismantling of nuclear power plants: Final dismantling approval for Obrigheim received, transfer of residual volumes of electricity from Block 1 to Block 2 of the Philippsburg nuclear power plant
- › Construction of waste material processing centres at the sites in Neckarwestheim and Philippsburg
- › Sale of VNG Norge AS and its subsidiary VNG Danmark ApS

Generation portfolio in 2018¹

46,079 GWh
generation

11,383 MW
installed output

Key figures in 2018

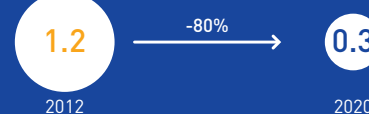
5,419 employees
(as of 31/12/2018)

€428.6 million
adjusted EBITDA in 2018

€166.5 million
investment in 2018

19.9%
share of adjusted EBITDA in 2018

Development of adjusted EBITDA (in € billion)



¹ The sums stated for the generation and installed output in the Renewable Energies and Generation and Trading segments are not identical to the totals for the EnBW Group. Some of the generation plants are assigned to other segments. The total generation of the EnBW Group is 53,492 GWh, of which 8,414 GWh or 15.7% is generated from renewable energy sources. The total installed output of the EnBW Group is 13,399 MW, of which 3,738 MW or 27.9% is from renewable energy power plants. The totals for generation and installed output for the Group are illustrated in detail on p. 102.

Strategy, goals and performance management system

Strategy

Market conditions and structures

The energy sector in Germany has been experiencing profound change since 2012 due to the Energiewende. The share of electricity generation accounted for by renewable energies is increasing, driven by regulatory funding mechanisms, the trend towards decentralisation and technological advances. Nuclear electricity generation will cease by 2022. The use of fossil fuels, above all brown coal and hard coal, continues to be the subject of intense political debate. Another driver of change in the energy sector are new patterns of demand amongst customers (local authorities, households, trade and industry) due to an increasing desire for autonomy and sustainability, as well as falling energy consumption due to improved energy efficiency (p. 72 ff.). The business models followed by energy supply companies are changing as a result.

Strategy process

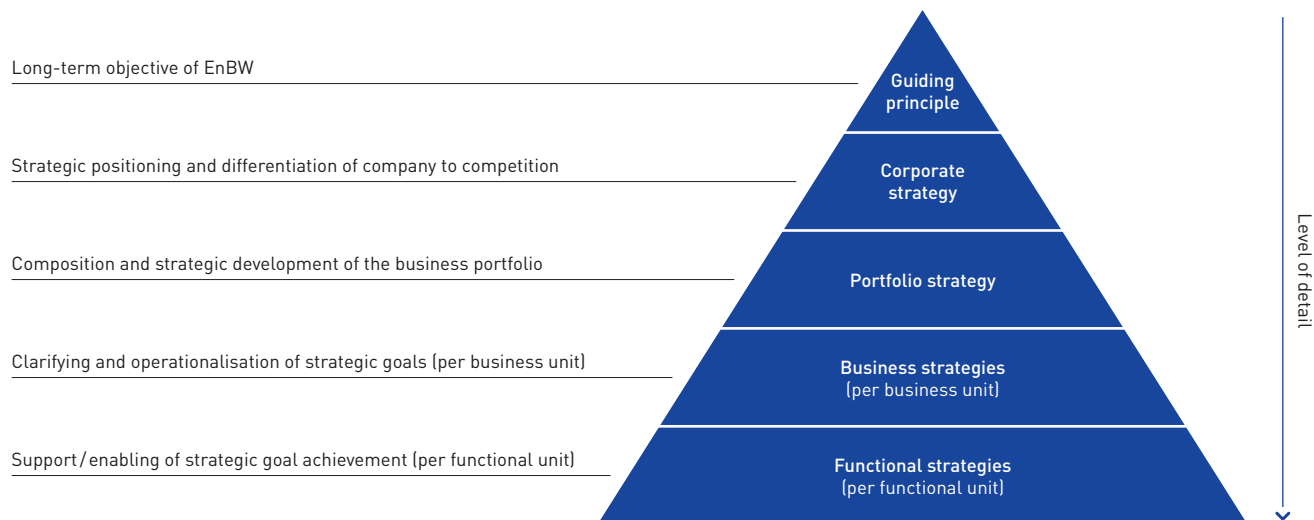
The development of strategy at EnBW is governed by a uniform and structured process. This begins with our vision which is guided by the principle "Energiewende. Safe. Hands on." The Group strategy describes our positioning and how we differ-

entiate ourselves from our competitors. Sustainability is an integral component of our Group strategy so that we can guarantee the creation of economic, ecological and social value for our stakeholders. We associate the concept of sustainable economic development with our aspiration to conduct our business activities in a responsible way.

The sustainability concept is aligned with the strategic guiding principles of EnBW and defines areas of action, targets and measures. Areas of action include, amongst others, the expansion of renewable energies, increasing employee commitment and guaranteeing a reliable supply (p. 52 f.). The concept takes into account external demands for sustainable corporate activities, derived from leading sustainability standards and ratings, as well as the integration of ecological and social aspects into the operating business (p. 60).

We shape the composition and strategic development of our business portfolio through our portfolio strategy. Our strategic goals are then defined and operationalised in a final step through the design of our business, investment and functional strategies.

Process for strategic goal achievement



Guiding principle and Group strategy

The EnBW Group strategy developed in accordance with our guiding principle encompasses two operating models that complement each other:

Customer proximity: The EnBW 2020 strategy places the focus on customers to an even greater degree. Targeted innovation management and short development times for new products and services will become key components. Cooperation with municipal utilities and local authorities will be expanded, primarily on the basis of partnership cooperation models. EnBW aims to gain an advantage over its competitors through the development of system and complete solutions for specific customer segments and a strong brand portfolio. An Innovation Campus supports the rapid development of forward-looking products. It is characterised by its focus on market proximity, bringing together the necessary expertise from the areas of research and development right through to sales and also by its entrepreneurial thinking. In the area of energy-related services, in particular, selective company acquisitions will complement existing expertise and round off the range of products and services offered [p. 64 ff.].

Engine room of the Energiewende: Safety, simplicity and flexibility are crucial when it comes to operating system-relevant infrastructure. EnBW relies on operational excellence and a strict focus on efficiency and cost-orientation to achieve defined standards and levels of quality. Partnerships formed in the area of technological development serve to minimise costs and risks. In addition, EnBW offers comprehensive active cooperation opportunities at all value added stages. In the “Engine room of the Energiewende”, EnBW uses its expertise to guarantee a reliable supply of energy – which also needs to be ensured during the transformation of the energy landscape.

Portfolio strategy

Repositioning the business portfolio

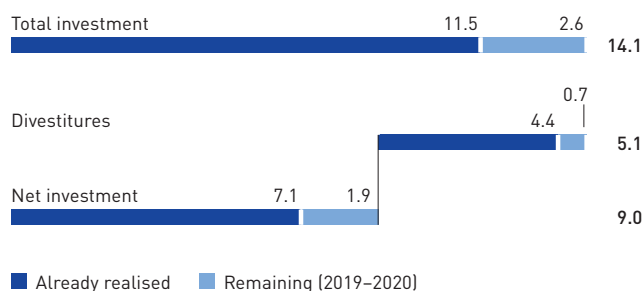
EnBW aims to more than double the share of its generation capacity accounted for by renewable energies from 19% (based on the reference year of 2012) to more than 40% in 2020. The capacities of our onshore wind farms will be increased significantly in Germany and selected foreign markets. Offshore wind power represents a further opportunity for growth. By investing extensively in grid expansion, we will be making a substantial contribution to the infrastructure required by the energy system and thus to the security of supply.

Innovative products and services will form another important pillar of the company's business. By 2020, a significant share of our earnings – the target value for adjusted EBITDA is between €2.3 and €2.5 billion – is to be generated through strategic initiatives. At the same time, the overall share of adjusted EBITDA accounted for by the regulated grid business and renewable energies will increase from around 40% (based on the reference year of 2012) to at least 70% in 2020. This will improve the risk-return profile of EnBW.

Extensive investments and divestitures

EnBW intends to invest €14.1 billion in total by 2020 (based on the reference year of 2012). In this context, the focus will be placed on expanding renewable energies on an industrial scale. Moreover, we will also concentrate on the expansion and upgrading of our transmission and distribution grids right through to so-called smart grids (Glossary, p. 154). In order to obtain the financial headroom required for such extensive investments, we have significantly extended our divestiture programme – involving divestitures, cash inflow from participation models, the disposal of assets and subsidies – with our EnBW 2020 strategy to around €5.1 billion (based on the reference year of 2012). Investment of €11.5 billion (around 80% of the target) had already been made and divestitures of €4.4 billion (around 85% of the target) were already completed by the end of 2018. On the basis of our current plans, we expect to exceed the targets for both strategic investment and divestitures by 2020. You can find further information on this subject in the “Forecast” on p. 110.

Investments and divestitures as part of the transformation of the portfolio in € billion



EnBW 2020 strategy is on the home straight

As an integrated energy supply company, EnBW is rigorously and confidently implementing its 2020 strategy. It is clear as the end of the strategy period approaches that the improvements in efficiency and the growth initiatives designed to place the company on new foundations ready for the future have largely been implemented or are on the home straight. As a result of the full consolidation of VNG in 2017, EnBW has become the number 2 in the gas transport sector and the third largest German gas supplier. Another good example of the success of the repositioning of the portfolio is the area of wind energy. In the offshore wind sector, two further major projects EnBW Hohe See and EnBW Albatros in the North Sea are following on from EnBW Baltic 1 and EnBW Baltic 2. Another offshore wind farm – EnBW He Dreiht – is at the planning stage. EnBW He Dreiht is the first offshore wind farm project that does not require EEG subsidies. In the onshore sector, EnBW has now become one of the top project developers and operators of wind farms in Germany. EnBW gave another indication of its aim to tap into selected international growth markets in the area of renewable energies in 2018 with its entry onto the Swedish market and initial activities in France, Taiwan and the USA. If there is no new and unexpected massive deterioration in the general conditions, EnBW will achieve its earnings targets for 2020 at both a Group and also segment level and thus reach one of the most important milestones in the history of the company.

Strategic development post 2020

Next phase of the Energiewende

The first phase of the Energiewende in Germany was mainly driven by energy policy and regulation. A second phase of the Energiewende is now rapidly starting to take shape, the full impact of which will be seen in the period after 2020 as the market, customers and technology lead the way. There are six key trends that are most relevant to the further development of the EnBW strategy:

- The goal of decarbonising the economy, which is shared by almost all countries in the world, is setting the political and regulatory agenda.
- New competitors and technological advances are fundamentally changing the value added chain – every business is increasingly dependent on its own success factors.
- Renewable energies and smart grids continue to be the focus of future decentralised energy systems.
- The cross-sector networking of electricity generation and digitalisation are shaping industrial development. As a result, energy and infrastructure themes are converging across sector boundaries.
- The demand for smart and reliable infrastructure is increasing due to factors such as demographic trends and urbanisation. The infrastructure market in Germany will grow from a volume of €100 billion in 2015 to an anticipated €150 billion in 2025 (source: PwC/Oxford Economics, own calculations).
- Individualisation, digitalisation and networking are massively changing customer behaviour and making it more difficult to predict.

Sustainable and innovative infrastructure partner

The further development of the EnBW strategy post 2020 will focus on the key trends defining the second phase of the Energiewende. We want to increasingly place the strategic focus of our company on the aspect of infrastructure within our existing business fields and also use the core expertise of EnBW to exploit new growth opportunities above and beyond the energy sector. The core expertise of EnBW – what we do well and do better than many others – lies in the safe and reliable operation and management of critical infrastructures in the energy sector. This distinctive expertise can be transferred to other infrastructure sectors – the first themes have already been identified and work is in progress – for example in the broadband business [Glossary, p. 152], district development in cities [Glossary, p. 153] or the expansion of charging infrastructure [Glossary, p. 153] as the basis for electromobility. The aim is to develop a balanced business portfolio that has diverse potential for growth, a high proportion of stable regulated business and an attractive risk-return profile.

EnBW is transforming itself into a sustainable and innovative infrastructure partner with an emphasis on three central themes:

- Sustainable generation infrastructure will be achieved through the further expansion of low-carbon electricity generation, the phasing out of nuclear energy and the

intended phasing out of coal-based conventional generation (decarbonisation).

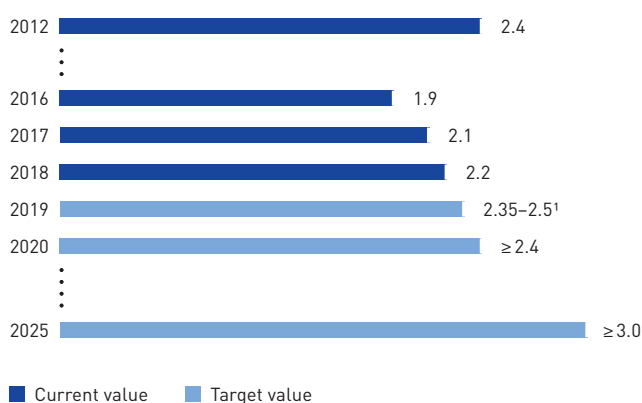
- System critical infrastructure comprises the expansion and operation of the transmission grids and the upgrading of distribution grids, as well as grid-related services provided by our grid subsidiaries.
- Smart infrastructure for customers involves us developing new, digital business models and launching them onto the market where we will then scale them up.

EnBW is focussing on growth and innovation for the markets of the future. An integral part and driver of this corporate economic development is the digital transformation of EnBW. Digitalisation permeates into all business areas, opening up new growth opportunities and earnings potential.

From repositioning to growth

Development of adjusted EBITDA

in € billion



1 Based on the 2019 forecast.

EnBW will generate – if our forecasts are fulfilled – an adjusted EBITDA of around €2.4 billion in 2020 and once again achieve the same level of earnings as in 2012, although based on a drastically changed business portfolio. From 2020, EnBW will switch from a phase of “repositioning” to a phase of “growth” with the aims of asserting its competitive position, offering our employees an attractive place to work with good prospects and achieving dividends for our shareholders that are in line with the market. The further development of the EnBW strategy post 2020 will provide the necessary foundations.

An important driver of growth is the expansion of generation from renewable energies. As well as doubling installed output from onshore and offshore wind power to over 3.5 GW, a third pillar will be formed by the development of a portfolio of large photovoltaic projects. Photovoltaics is the fastest growing generation technology worldwide due to its cost benefits. EnBW is aiming to become the pioneer in Germany for open-field photovoltaic power plants without state funding. In order to further safeguard its growth ambitions, EnBW is following a strategy of selective internationalisation in the area of renewable energies. The aim is a dual diversification of risk – in terms

of generation types and regional markets – and to exploit scaling effects. At the same time, EnBW is focussing on a sharp expansion of transmission grids, profitable growth of the distribution grids and the further development of sales into a customer infrastructure business, for example in the area of electromobility.

The expansion of the sustainable generation and utilisation of energy will be supported by innovative financing instruments. In October 2018, EnBW successfully issued its first green bond [Glossary, p. 153] with a volume of €500 million. The proceeds will be exclusively used to fund climate-friendly projects (p. 85 f.).

EnBW has set itself the target of increasing the adjusted EBITDA for the Group to at least €3 billion by 2025. Even in the growth phase post 2020, EnBW will maintain its financial discipline and intends to control its credit standing using the debt repayment potential (ratio of the retained cash flow to net debt). A target value of at least 16% should safeguard the good credit standing of EnBW and enable the implementation of the investment programme to achieve the goals in 2025 at the same time.

Goals and performance management system

We will safeguard the implementation of our 2020 strategy by means of a holistic goal and performance management system. This system reflects the overall performance of the company and strengthens integrated thinking within EnBW. At the same time, it underpins the comprehensive and transparent focus on performance and stakeholders within our company.

Performance management system

Since 2013, corporate management has been continually expanded through the addition of non-financial and strategic goals, so that it encompasses the dimensions of strategy, customers and society, employees and environment. The centrepiece of this integrated corporate management is the performance management system (PMS). As of 2015, the PMS incorporates all tools used in strategic and operational management. The financial and non-financial Group goals have been broken down into target agreements at all management levels since 2015, insofar as they are considered a sensible performance indicator for the relevant area. The quarterly performance reviews conducted at a Board of Management level introduced in 2013 were revised in 2015 and have since included operating performance indicators that will promote the achievement of targets for the financial and non-financial key performance indicators. In 2016, this concept was fully implemented. In terms of external communication, the PMS feeds into the integrated reporting of the financial and non-financial performance of EnBW based on the reporting framework of the International Integrated Reporting Council (IIRC). This Integrated Annual Report 2018 of EnBW incorporates the financial and non-financial aspects of our business activities.

TOP Definition and target values for the key performance indicators

The key performance indicators enable us to measure the degree to which goals are achieved and to manage our company. The key performance indicators are the same as in the previous year.


The financial and strategic key performance indicators within the PMS are the adjusted EBITDA, the shares of the adjusted EBITDA accounted for by the segments, the internal financing capability and ROCE.

The **adjusted EBITDA** is the earnings before the investment and financial results, income taxes and amortisation and adjusted for non-operating effects. Adjusted EBITDA is a key performance indicator for the finance goal dimension, and the key performance indicators for the strategy goal dimension, which describe the shares of adjusted EBITDA accounted for by the segments, are derived directly from it (p. 82 and 111). The key performance indicator **internal financing capability** describes the adjusted retained cash flow in relation to the cash-relevant net investment and is the most significant performance indicator for the Group's ability to finance its activities internally (p. 89 and 112). After covering ongoing costs and dividend payments, the adjusted retained cash flow is available to the company for net investment without the need to raise additional debt. Since the 2017 financial year, we have adjusted the retained cash flow to take account of the extraordinary effect of the reimbursement of the nuclear fuel rod tax [Glossary, p. 154] (adjusted retained cash flow). The retained cash flow was reduced by the amount reimbursed to EnBW of €1,520.8 million in 2017. In the 2018 financial year, the reimbursement was used for a debt repayment of around €835.8 million and also for strategic investments of €200.0 million. We plan to distribute the remaining amount on a straight line basis in the period 2019 to 2020, also for the purpose of strategic investment. Accordingly, this will lead to an increase in the adjusted retained cash flow over the period 2018 to 2020. **ROCE** (return on capital employed) is the ratio of adjusted EBIT including the adjusted investment result to the average capital employed and forms the basis for determining the value added, reflecting the development of the company's value from a financial point of view (p. 92 f. and 112).


In addition to the financial key performance indicators, the PMS also includes non-financial key performance indicators.

The customers and society goal dimension comprises the Reputation Index, the Customer Satisfaction Index and the SAIDI (System Average Interruption Duration Index). In order to calculate the **Reputation Index**, a total of around 5,000 people – from the stakeholder groups relevant for the EnBW brand of customers, the wider public, industrial companies, opinion leaders and investors – are asked about their impressions of the EnBW brand by an external market research institute.

TOP Financial and non-financial key performance indicators and targets

Goal dimension	Goal	Key performance indicator	2018	Target in 2020	
 Finance	Secure profitability	Adjusted EBITDA in € billion	2.2	2.3–2.5	The operating result is to return to the average level achieved before the Energiewende. The total regulated business (Grids and Renewable Energies segments) together contributes around 70% to this result.
	High level of financial discipline	Internal financing capability in %	93.2	≥ 100	The level of net financial debt is controlled by limiting net investment to the level of adjusted retained cash flow. The Group can thus finance its own repositioning internally.
	Increasing Group value	ROCE in %	6.5	8.5–11	Return on capital employed (ROCE) is higher than the cost of capital. EnBW is creating value for its stakeholders.

Finance and strategy goal dimension, page 80 ff. | Expected trends, page 110 ff. | Report on opportunities and risks, page 114 ff.




 Strategy ¹	Share of result accounted for by "Customer proximity" / Sales	Share of overall adjusted EBITDA in € billion/in %	0.3/12.5	0.4/15.0	The operating result for the Sales segment doubles from €0.2 billion (reference year: 2012) to €0.4 billion in 2020 and represents around 15% of the Group operating result. Innovations make this possible.
	Share of result accounted for by Grids	Share of overall adjusted EBITDA in € billion/in %	1.2/54.5	1.0/40.0	The operating result for the Grids segment increases by 25% from €0.8 billion (reference year: 2012) to €1.0 billion in 2020 and represents around 40% of the Group operating result. The share accounted for by stable regulated business is expanding.
	Share of result accounted for by Renewable Energies	Share of overall adjusted EBITDA in € billion/in %	0.3/13.8	0.7/30.0	The operating result for the Renewable Energies segment increases by 250% from €0.2 billion (reference year: 2012) to €0.7 billion in 2020 and represents around 30% of the Group operating result. EnBW becomes more sustainable.
	Share of result accounted for by Generation and Trading	Share of overall adjusted EBITDA in € billion/in %	0.4/19.9	0.3/15.0	The operating result for the Generation and Trading segment falls by 80% from €1.2 billion (reference year: 2012) to €0.3 billion in 2020 due to changed framework conditions and only represents around 15% of the Group operating result.

Finance and strategy goal dimension, page 82 f. | Expected trends, page 111 | Report on opportunities and risks, page 114 ff.

Results were collected for each stakeholder group about the distinctiveness of the brand and the assessment of the competence of and emotional attitude towards the EnBW brand. These are merged together to form a Reputation Index. The individual reputation indices for each stakeholder group are weighted equally to form a consolidated and reported Reputation Index (p. 94 and 112). The key performance indicator **Customer Satisfaction Index** comprises an integrated analysis of the average satisfaction of private end consumers of electricity over the year, which is directly linked to customer loyalty. It is compiled from customer surveys carried out by an external provider (p. 94 f. and 112). This key indicator is compiled for the two brands of EnBW and Yello. **SAIDI** serves as the key performance indicator of supply reliability. It expresses the average length of supply interruption in the electricity distribution grid experienced annually by each connected customer. SAIDI includes all unscheduled interruptions to

supply that last more than three minutes for the end consumer. The definition and calculation of this performance indicator is based on the guidelines issued by the Network Technology/Network Operation Forum (FNN) of the VDE (German Association for Electrical, Electronic & Information Technologies) (p. 96 and 112).

The Employee Commitment Index (ECI) and LTIF (Lost Time Injury Frequency) are utilised as performance indicators in the employees goal dimension. The **ECI** expresses the degree to which employees identify with EnBW. It is compiled using employee surveys and is based on standardised questions that address the degree to which employees identify with their company, including satisfaction with their employer-employee relationship, attractiveness of the employer, identification with the company, motivational climate, competitiveness and future viability. The ECI is compiled every two to three years for those

Goal dimension	Goal	Key performance indicator	2018	Target in 2020	
 Customers and society	Reputation	Reputation Index	51.3	55.4	In parallel with repositioning its business model, EnBW aims to continuously improve its reputation.
	Customer proximity	EnBW/Yello Customer Satisfaction Index	120/152	> 136/ > 159	EnBW and Yello customers are satisfied customers with a high level of customer loyalty. EnBW and Yello are organisations strongly oriented towards customers and meet the needs and wishes of their customers through tailored solutions and products.
	Supply reliability	SAIDI (electricity) in min./year	17	< 25	Maintaining the quality of supply to its customers is of central importance to EnBW in the further development of the grids of its grid subsidiaries. The high degree of supply reliability in the grid area operated by EnBW is based on comprehensive investment in grids and plants and our abundant system expertise.
Customers and society goal dimension, page 94 ff. Expected trends, page 112 Report on opportunities and risks, page 114 ff.					
 Employees	Employee commitment	Employee Commitment Index (ECI) ²	62	65	The commitment of our employees to EnBW is very strong and there is faith in the future viability of the company.
	Occupational safety	LTIF ³	2.3	≤ previous year	The number of accidents at work and the resulting days of absence remains stable or is falling.
Employees goal dimension, page 96 ff. Expected trends, page 113 Report on opportunities and risks, page 114 ff.					
 Environment	Expand renewable energies (RE)	Installed output of RE in GW and the share of the generation capacity accounted for by RE in %	3.7/27.9	5.0/> 40	The share of the generation capacity accounted for by renewable energies has doubled compared with 2012. Onshore and offshore wind power and hydropower are at the forefront of this development.
	Climate protection	CO ₂ intensity in g/kWh	553	-15% to -20%	EnBW actively contributes to climate protection by successively reducing the CO ₂ intensity of its own generation of electricity (excluding nuclear power) by 15% to 20% by 2020 compared to 606 g/kWh in the reference year 2015.
Environment goal dimension, page 101 ff. Expected trends, page 113 Report on opportunities and risks, page 114 ff.					

1 Other/Consolidation accounts for €-0.02 billion/-0.7% of the overall adjusted EBITDA.

2 Variations in the group of consolidated companies (consideration of companies controlled by the Group [without ITOs]).

3 Variations in the group of consolidated companies (consideration of all employees at those companies controlled by the Group, except external agency workers and contractors).

companies controlled by the Group (except ITOs) (Glossary, p. 154) as part of a full employee survey. Representative random sample surveys are completed in the periods between the full surveys – as was also the case in 2018 (p. 96 and 113). **LTIF** is calculated on the basis of LTI (Lost Time Injuries) which denotes the number of accidents during working hours which have occurred exclusively because of a work assignment from the company and result in at least one day of absence. LTIF indicates how many LTI occurred per one million working hours performed. This key indicator takes all employees at those companies controlled by the Group into account, except external agency workers and contractors (p. 100 f. and 113).

The key performance indicators in the environment goal dimension are the **installed output of renewable energies (RE)** and the **share of the generation capacity accounted for by RE** and **CO₂ intensity** (Glossary, p. 152). The first are measures of the expansion of renewable energies and refer to the installed output of the power plants and not to their weather-dependent contribution to electricity generation (p. 102 and 113). The

emissions of CO₂ from own generation of electricity for the Group, as well as the volume of electricity generated by the Group without the contribution made by the nuclear power plants, form the basis for the calculation of the key performance indicator CO₂ intensity. This performance indicator is calculated as the ratio between the emissions and the generated volume of electricity and thus specifically describes the amount of CO₂ released per kilowatt hour. By discounting the electricity generated by nuclear power plants, the performance indicator will not be influenced by the phasing out of nuclear energy in the coming years (p. 103 and 113).

TOP Interdependencies between the key performance indicators

We are convinced that in order to give a comprehensive portrayal of the company, it is not only necessary to describe the economic, ecological and social context but also to illustrate and provide an analysis of interdependencies in this report. Linking together the various goal dimensions is an important

element of integrated reporting. At the same time, this type of reporting encourages a holistic corporate management approach within EnBW. In order to illustrate these interdependencies, the key performance indicators for the goal and performance management system are used. The basic assumption for illustrating interdependencies is that a change in one key performance indicator can also lead, in many cases, to changes in one or more other key performance indicators. Reciprocal relationships thus exist between the key performance indicators – in the most extreme case, all of the key performance indicators can even influence each other. In this context, the investment guidelines have been adapted in the 2018 financial year: Non-financial aspects such as environmental and climate protection goals will be taken into account to a greater extent for investment projects (p. 88).

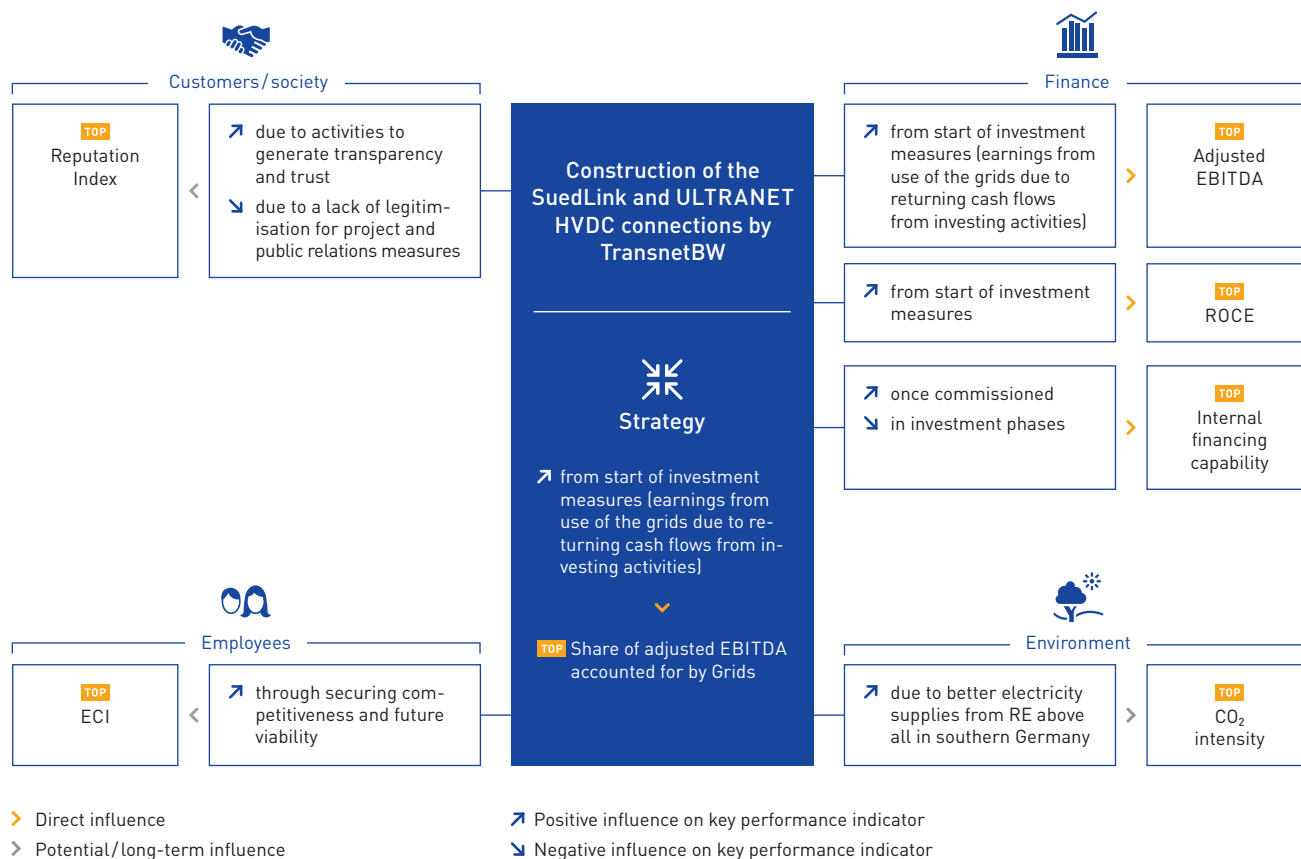
We have illustrated these interdependencies since 2015 using concrete examples that were important for the company in the past financial year or will be in the future and can thus also be found in other sections of the report. As part of an internal coordination process, various examples were examined by several specialist areas and selected based on the respective feedback.

In order to illustrate the interdependencies in 2018, we have selected two areas in which EnBW was already engaged in the past financial year but which will become even more important in the future. The **expansion of the HVDC connections as part of**

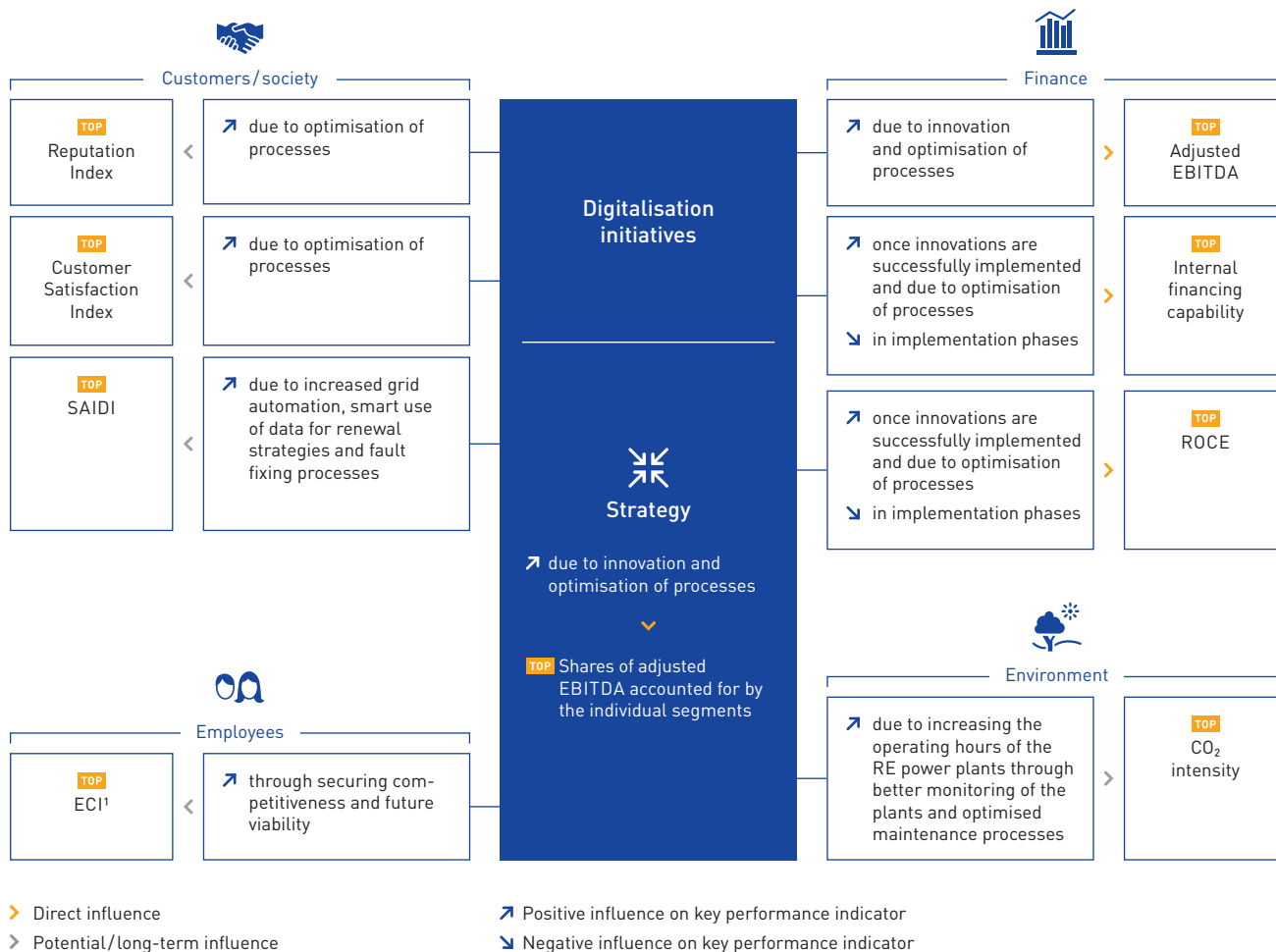
the SuedLink and ULTRANET projects will accompany us over the next few years. New, powerful transmission grids will form the backbone of the Energiewende, especially for transporting energy that has been sustainably generated in northern Germany to the main consumption areas in southern Germany (p. 62). We anticipate that there will be a direct or potential influence on many key performance indicators. **Digitalisation initiatives** are another example. EnBW is focussing on three main areas in its digital transformation: products and processes, technologies, and people and organisations (p. 39). Due to the diverse range of impending changes, we anticipate that there will be a direct or potential influence on many key performance indicators.

The key performance indicators that are directly influenced are positioned in the centre of the diagram and should essentially be directly measurable. The interdependencies between the financial and strategy key performance indicators are also essentially directly measurable and are represented in the example diagrams by orange arrows. The interdependencies with the other non-financial key performance indicators are difficult to measure and generally tend to be potential or long term in nature. They are represented by grey arrows. In the 2018 financial year, these interdependencies were not measured individually. They are presented based on internal discussions with the relevant specialist areas and those responsible for the performance indicators. The upward pointing arrows show a positive influence on the key performance indicator, while the downward pointing arrows show a negative influence.

Interdependencies between key performance indicators using the construction of HVDC connections as an example



Interdependencies between key performance indicators using digitalisation initiatives as an example



¹ We also anticipate a potential negative influence on the Employee Commitment Index due to the digital transformation in the Group. However, this type of risk will be compensated for by integrating employees into the change process.

Corporate governance

Corporate management

Good corporate governance is an essential part of the corporate culture at EnBW. We are convinced that responsible and transparent corporate governance strengthens the trust and confidence that customers, capital providers, employees and the general public place in the company, thereby contributing to its long-term success. The Board of Management and Supervisory Board have the responsibility of managing and supervising the company above and beyond merely fulfilling statutory requirements, but to do it in accordance with recognised benchmarks for good corporate governance and in harmony with the principles of a social market economy, guaranteeing the continued existence of the company and ensuring a sustainable increase in its added value. Therefore, EnBW also meets all the recommendations of the German Corporate Governance Code (www.enbw.com/corporate-governance).

As in previous years, Dr. Bernhard Beck, the member of the Board of Management responsible for corporate governance, monitored conformity with the Code at EnBW and reported extensively to the Board of Management and Supervisory Board on all current themes pertaining to corporate governance. Both boards acknowledged his report and addressed the recommendations and suggestions in the Code. They subsequently approved the company's

annual declaration of compliance pursuant to section 161 German Stock Corporations Act (AktG) on 5 December 2018. The current declaration of compliance and the declarations from previous years are published at www.enbw.com/declaration-of-compliance.

The remuneration report is contained in the management report on p. 124 ff. of this report.

Management and supervision

Board of Management

The Board of Management is jointly responsible for managing Group business. In addition to the role of CEO, the tasks performed by the Board of Management are split into the remits of "finance", "personnel, law and compliance, auditing" and "technology". As of 31 December 2018, the Board of Management of EnBW AG consisted of four members. Colette Rückert-Hennen joined the Board of Management as the replacement for Dr. Bernhard Beck on 1 March 2019 and took over responsibility for the areas of personnel, executive management and health management. Dr. Bernhard Beck will remain in office until 30 June 2019 and will still be responsible for the other areas under his remit in the allocation of responsibilities up until this date.

Allocation of responsibilities at Board of Management level (as of 31/12/2018)

Dr. Frank Mastiaux CEO	Thomas Kusterer Finance	Dr. Bernhard Beck Personnel, law and compliance, auditing	Dr. Hans-Josef Zimmer Technology
<ul style="list-style-type: none"> > Corporate development/sustainability > Strategy/energy industry > Communication/policy > Transformation/IT/procurement/infrastructure > Innovation management > Sales, marketing and operations > Gas value chain > Escalation: risk management and trading 	<ul style="list-style-type: none"> > Accounting > Tax > Controlling > Finance > Investor Relations > Mergers and acquisitions > Risk management/ICS > Trade 	<ul style="list-style-type: none"> > Personnel and executive management > Law > Auditing > Compliance management/data protection > Regulatory management > Boards/shareholder relationships > Equity investment management > Health management 	<ul style="list-style-type: none"> > Generation (renewable, conventional, nuclear) > Waste management/environmental services > Electricity and gas transmission grids > Distribution grids (electricity and gas) > Grid technology > Research and development > Occupational safety/environmental protection/crisis management

www.enbw.com/board-of-management

Supervisory Board

The Supervisory Board of EnBW AG consists of 20 members in accordance with section 8 (1) of the Articles of Association. In

accordance with the German Co-determination Act (MitbestG), an equal number of members represent shareholders and employees. Three employee representatives are nominated by the ver.di trade union. The Supervisory Board appoints the

members of the Board of Management and advises them on their management of the company. It discusses business performance, planning and strategy of the company together with the Board of Management at regular intervals and ratifies the annual financial statements. The Supervisory Board is always involved in decisions of fundamental importance to the company. Legal transactions and measures subject to the approval of the Supervisory Board are defined in its rules of procedure. In order for the Supervisory Board to optimally perform its functions, it has formed the following standing committees: a personnel committee, a finance and investment committee, an audit committee, a nomination committee and a mediation committee in accordance with section 27 (3) MitbestG, a digitalisation committee and an ad-hoc committee.

Further information on the Board of Management and Supervisory Board can be found in this report under the section on "Corporate bodies" (p. 145 ff.) as well as in the Declaration of Corporate Management 2018 of the EnBW Group and EnBW AG including the Corporate Governance Report 2018 and the Report of the Supervisory Board (www.enbw.com/corporate-governance).

Annual General Meeting

Shareholders exercise their rights with regard to company matters at the Annual General Meeting. The Annual General Meeting passes resolutions on the discharge of Board of Management and Supervisory Board members, the appropriation of earnings and selection of the auditor. Resolutions of the Annual General Meeting only require a simple majority of votes in most cases. Each bearer share is equivalent to one vote. Further information on the Annual General Meeting is available at <http://hv.enbw.com>.

Shares of EnBW AG are listed on the General Standard segment of the Frankfurt Stock Exchange. A stake of 46.75% of the share capital in EnBW AG is owned by each of both the Federal State of Baden-Württemberg – via its wholly owned subsidiary NECKARPRI GmbH and, in turn, via its wholly owned subsidiary NECKARPRI-Beteiligungsgesellschaft mbH – and by Zweckverband Oberschwäbische Elektrizitätswerke (Zweckverband OEW) via its wholly owned subsidiary OEW Energie-Beteiligungs GmbH.

Overall, the shareholder structure is unchanged as of 31 December 2018 when compared to the previous year.

Shareholders of EnBW

Shares in % ¹	
OEW Energie-Beteiligungs GmbH	46.75
NECKARPRI-Beteiligungsgesellschaft mbH	46.75
Badische Energieaktionärs-Vereinigung	2.45
Gemeindeelektrizitätsverband Schwarzwald-Donau	0.97
Neckar-Elektrizitätsverband	0.63
EnBW Energie Baden-Württemberg AG	2.08
Other shareholders	0.39

¹ The figures do not add up to 100% due to rounding differences.

Compliance

Compliance management systems

Natural compliance with the relevant legal regulations and internal company rules forms the basis for the business activities of EnBW and is part of our corporate culture. The compliance management systems (CMS) and functions of EnBW are individually designed: They are based on company and sector-specific priorities and risks, the size of the company and other factors. They are designed to support each company – and thus the whole Group – in avoiding risks, liability claims and damage to reputation.

Depending on the type of corporate control over a company, the compliance-relevant companies with employees are either directly or indirectly integrated into the compliance management system of EnBW.

The CMS at EnBW is continuously examined and updated internally as part of the audit or by the compliance organisation itself. It covers the directly controlled companies. The CMS focuses on the prevention, detection and sanctioning of corruption, the prevention of violations against competition and antitrust laws, the prevention of money laundering and data protection – which falls within the scope of compliance at EnBW. In the reporting year, there were 27 companies directly integrated into the CMS at EnBW. New companies are integrated into the CMS using a risk-based approach.

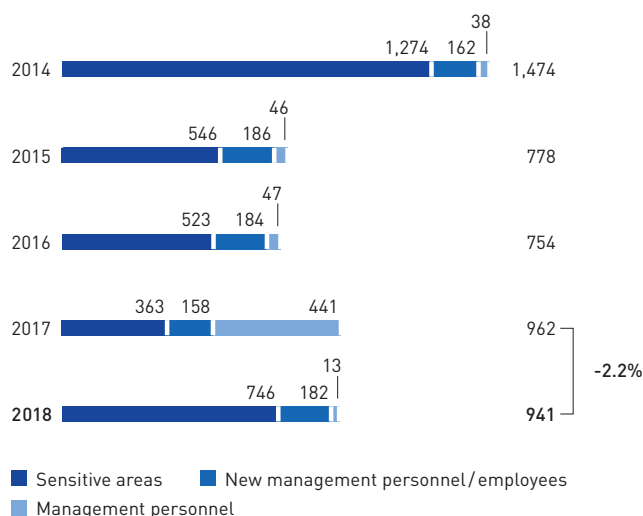
Companies indirectly integrated into the CMS of EnBW have their own CMS. Relevant participating interests held by these companies are also integrated into their CMS. Three companies in the ED Group were integrated into the CMS for Energiedienst Holding (ED), while two subsidiaries have independent control over compliance. Seven companies with employees were integrated into the CMS at Pražská energetika (PRE), three at Stadtwerke Düsseldorf (SWD) and 18 at the VNG Group.

In order to safeguard the commercial success of the company against compliance risks – especially to fight corruption and bribery – preventative risk assessment methods, advisory services and training concepts have been set up at EnBW, the compliance-relevant companies and the ITOs (Independent Transmission Operator) (Glossary, p. 154).

Activities this year

At the **compliance training courses** in 2018, there was a special focus in the face-to-face training sessions on purchasing and construction coordination with respect to the CMS at EnBW. In addition, a number of antitrust training events were held for sensitive areas of the company. The completion of an e-learning course or participation in face-to-face introductory training courses is obligatory for new EnBW employees.

Number of participants in compliance training events¹



¹ At EnBW AG and directly integrated companies.

EnBW holds a **compliance day** every year. The event was held on 22 October 2018 in Karlsruhe and provided the around 115 participants with a varied programme that covered themes such as data compliance and the risks posed by cyber attacks and how to avoid them.

Extensive Group regulations can pose a challenge to young, innovative companies that are active in highly competitive and volatile markets. Therefore, the compliance and data protection department and the EnBW Innovation Campus developed a set of **Basic Rules** together in 2018. These rules describe the minimum requirements for innovation projects, micro business units and start-ups. This streamlined set of rules is designed to help those responsible in the Innovation Campus guarantee compliance. The core principles followed when defining the Basic Rules were, amongst other things: guaranteeing competitiveness by using a risk management approach, passing on greater responsibility to managers, protecting the interests of EnBW and a focus on short and concise rules [p. 67].

All of the indirectly integrated companies held training courses to increase awareness amongst employees. The companies were able to choose whether to use either **face-to-face or online training courses**.

The annual **compliance risk assessments** at EnBW investigate the corruption, antitrust, fraud and data protection risks and form the basis for the compliance and data protection programme, as well as for decentralised preventative activities. In 2018, they were carried out at those companies directly integrated into the CMS. The in-depth approach for assessing and raising awareness for risks using face-to-face training events for sensitive areas was followed again in 2018 and will be continued in 2019. The summary of the material compliance risks is contained in the "Report on opportunities and risks" [p. 118 and 121]. Risks are also systematically identified in the indirectly integrated companies and the ITOs.

The **advisory services** offered by the EnBW compliance department, which form another key element of prevention, were also utilised in 2018 to the same high degree as in previous years. The compliance hotline, which is reachable by e-mail or telephone and deals with matters on a personal level, received around 1,000 enquiries relating to the key issues of gifts, donations and sponsoring, as well as to further topics such as conflicts of interest and the auditing of business partners. The advisory services dealing with compliance themes have also grown at the indirectly integrated companies.

Compliance breaches

EnBW and the directly integrated companies have established reporting channels via which internal, and in isolated cases also external, whistle-blowers can report suspected cases. Whistle-blowers always have a right to the confidential and prompt handling of any suspected cases they report and can always contact the relevant compliance department or external bodies under the guarantee of complete anonymity with respect to the company (at EnBW, ED, PRE, SWD and TransnetBW). In the reporting year, there were ten compliance breaches, one of which was material. There was no evidence for cases of corruption.

There was one compliance breach at terranets bw in the reporting year, while two suspected cases at VNG proved to be wellfounded. There were also four compliance breaches at PRE.

The EnBW Group faced neither antitrust law penalty procedures nor third-party antitrust lawsuits in the 2018 financial year. Law enforcement agency investigations of individual employees and former members of corporate bodies relating to the so-called Russian business deals and the so-called sales tax carousel in CO₂ allowance (Glossary, p. 152) trading were also ongoing in 2018. It is not possible to say at the present time when these proceedings will end.

Data protection

An important theme in 2018 was the EU General Data Protection Regulation (GDPR) that came into force on 25 May. Any adjustments that were necessary as a consequence were identified and subsequently implemented as part of a project led by the compliance and data protection department that also included representatives from all different functions and departments. In the project, working groups networked throughout the Group were established, for example, to examine themes related to the GDPR and define and establish conceptual standards.

A newly introduced and obligatory e-learning course and numerous face-to-face events in particularly affected areas ensure that there is sufficient awareness for the subject of data protection within the Group. Furthermore, the advancing digitalisation of both internal processes and sales projects means that the requirements stipulated by data protection law must be dealt with intensively. The compliance and data protection department provides the specialist departments with advice and support in this context. Especially after the rights of the data subject were strengthened in the GDPR, there were a large number of requests for information in 2018.

In dialogue with our stakeholders

Our stakeholders

Continuous and systematic dialogue with our internal and external stakeholders is an important element for determining key issues as part of our business activities. The most important stakeholder groups include shareholders and the capital market, employees, customers, local authorities and municipal utilities, society and environment, suppliers, business partners, the political community and the media. A fundamental aspect of our dialogue with stakeholders is the identification and prioritisation of stakeholder groups relevant to strategically significant and current issues, particularly with regards to the Energiewende.

This dialogue is conducted using a variety of communication channels ranging from conferences to social media platforms. In direct dialogue with our stakeholders, we listen to their interests and their expectations of EnBW and take these into account in the strategic positioning of our company and in our business decisions. At the same time, we inform all important stakeholders about the company's needs and the prerequisites for providing an efficient, reliable and sustainable supply of energy. As part of this dialogue, it is also important for us to listen to critical opinions such as those expressed at events held by our Energy & Climate Protection Foundation. In this context, the phasing out of coal power and brown coal extraction in Germany were, for example, the focus of heated debate in blog posts and at events in 2018. Mutual understanding, social acceptance and trust are increased further through this purposeful exchange of insights and perspectives. In addition, it also helps us to identify central developments and key topics at an early stage.

Materiality analysis

Based on the systematic materiality analysis that was carried out for the first time in 2013, EnBW has continuously expanded its processes over the last few years for identifying material topics and linking them simultaneously with the development of the company's strategy. Material aspects are determined via the framework provided by the International Integrated Reporting Council (IIRC), as well as in accordance with the GRI standards for sustainability reporting issued by the Global Reporting Initiative (GRI). Other current developments flow into the determination of future key issues, such as the work of the Task Force on Climate-related Financial Disclosures (TCFD) [Glossary, p. 155] on climate-related risk reporting.

On the one hand, topics are considered material if they have a significant influence on long-term value added and thus the performance and future viability of EnBW. Contributions to the

strategic orientation as a sustainable and innovative infrastructure partner are of particular importance in this context. On the other hand, aspects reflecting any important economic, environmental and social impacts the organisation may have and that significantly influence the perception of stakeholders are also taken into account.

Material themes are continuously implemented in the functional and business units, as well as in the individual companies of EnBW. In addition, the findings from the materiality analysis flow into, for example, the strategy process and stakeholder management.

The materiality analysis process was updated in the 2018 financial year. It comprises three steps: the creation of an overview of the themes relevant to strategy and communication, the development of a list of themes relevant from the perspective of sustainability and the derivation of material themes from the reputation analysis. During each step of the process, the themes identified were continuously compared to the key themes that were dealt with by the Supervisory Board in 2018. Every step leads to a distinct prioritisation of themes and ultimately to a final list of the top themes that can be allocated to the categories of transformation of the portfolio, growth and sustainability.

The **transformation of the portfolio** in the various segments is shaped by the following themes:

- > **Sales segment**
 - > **Smart products:** The storage of privately generated solar energy is becoming increasingly important. Our customers can benefit from our smart energy generation and storage solutions [p. 94 f.].
 - > **Digitalisation:** The reorganisation of customer processes and the expansion of the digital product range continue to be a main focus for EnBW [p. 39 and p. 94 ff.].
 - > **Electromobility:** EnBW is further expanding its product portfolio with individual solutions for private households and local authorities [p. 94 f.].
- > **Grids segment**
 - > **Expansion of the distribution grid:** The development of a smart distribution grid for the integration of renewable energies using innovative equipment is a key aspect for the success of the Energiewende for EnBW and its grid subsidiaries [p. 49 f.].
 - > **Expansion of the transmission grid:** TransnetBW is constructing HVDC lines [Glossary, p. 153] for transporting electricity over long distances so that excess electricity that is already generated to some extent today in the north of Germany can be transported to the south [p. 55].

> Renewable Energies segment

- > **Offshore wind:** The rigorous expansion of offshore wind is being pushed forward through the construction of the EnBW Hohe See and EnBW Albatros wind farms. Wind generation at sea is an important component of the EnBW portfolio which comprises an increasing proportion of renewable energies [p. 49 f.].

> Generation and Trading segment

- > **Dismantling of nuclear power plants:** Significant progress has been made with the environmentally friendly dismantling of the nuclear power plants and construction of waste material processing centres in Philippsburg and Neckarwestheim [p. 45].

The following themes are material for the **growth** category:

- > **Expansion of renewable energies:** Alongside offshore and onshore wind power, photovoltaics will be expanded to become another main pillar of the EnBW renewable energy business in Germany [p. 50].
- > **Further internationalisation:** EnBW entered the Swedish market in 2018 and also carried out its initial activities in France, Taiwan and the USA. We want to expand renewable energies in these markets in the future [p. 43].
- > **Supply reliability:** The supply quality will be guaranteed by the expansion of the transmission and distribution grids for electricity and gas by our grid subsidiaries as part of the Energiewende [p. 96].
- > **Infrastructure provider:** EnBW is one of the largest infrastructure providers in the area of electromobility in Baden-Württemberg [p. 95]. We aim to become a sustainable and innovative infrastructure partner and also exploit new opportunities for growth outside of the energy sector [p. 50].

At the same time, EnBW has revised its sustainability concept and integrated it into the corporate strategy. This will ensure that it is interlinked with the core business to an even greater extent. This process is oriented towards the **strategic principles with respect to sustainability**:

- > **Sustainable economic development:** We endeavour to conduct all of our activities in a sustainable way, from the responsible procurement of raw materials [p. 70 f.] through to the provision of smart energy solutions for our customers [p. 94 f.]. In addition, we are actively involved in the area of sustainable finance, which is exemplified by, amongst other things, the membership of the EnBW Chief Financial Officer, Thomas Kusterer, on the Technical Expert Group on Sustainable Finance (TEG) [Glossary, p. 155] that was newly founded in June 2018 and on the Task Force on Climate-related Financial Disclosures (TCFD) [Glossary, p. 155] [p. 73 and p. 86]. As part of his work in the climate protection initiatives named above, he regularly reported to internal bodies on the climate-related opportunities and risks.
- > **Climate and environmental protection:** EnBW advocates the introduction of a minimum price for CO₂. We make a contribution to climate protection by investing in climate-friendly projects and business models [p. 73 and 85 f.].

> Commitment to our stakeholders and willingness to engage

- > **in dialogue:** We are actively integrating our stakeholders into the energy world of the future – by providing comprehensive information and opportunities for dialogue, such as the Energy & Climate Protection Foundation [p. 63].
- > **Customer proximity:** In order to fulfil the needs of our customers to an even better extent, we develop innovative products such as in the area of electricity storage [p. 94 f.] or for the supply of biogas [p. 65].
- > **Commitment to our employees:** We provide our employees with attractive offers, for example, in the areas of healthcare, pension provision and climate-friendly mobility [p. 96 ff.].
- > **Regional roots:** Our roots lie in Baden-Württemberg and we recognise our special responsibility to this region – by investing in existing infrastructure [p. 87 f.] and also through our voluntary and charitable work [p. 61 f.].

Development of sustainability ratings

EnBW maintains close contacts with leading sustainability rating agencies and takes their analyses and evaluations of the corporate strategy, the company situation and its business prospects into account in its decision-making process. In the selection of agencies, the main focus is placed on, amongst other things, transparent and plausible evaluations and efficient working processes between the rating agencies, companies, investors and sustainability analysts. EnBW strives to continuously improve its ratings from recognised agencies in the area of sustainability. It thus aims to strengthen its position as a responsible and sustainable company and also wants to be seen as an attractive investment opportunity for financial investors whose investment decisions are based wholly or partially on sustainability criteria. In 2018, EnBW was able to solidify its leading position in terms of important sustainability ratings for the energy sector:

- > In the **ISS-oekom** rating, EnBW has maintained its good rating of B- (on a twelve point rating scale from D- to A+). It thus achieved “Prime Status” and belongs to the leading group of supply companies evaluated by ISS-oekom (ranked 3rd out of 39 companies, as of October 2018). The agency evaluates the performance of the company based on social, governance and environmental aspects using more than 100 sector-specific criteria.
- > In the **Sustainalytics** rating – which evaluates environmental, social and governance aspects – EnBW received a rating of 73 on a scale from 0 to 100. EnBW was thus classified as an “Outperformer” and holds a leading position in comparison to other companies in the supply sector.
- > In the **Carbon Disclosure Project (CDP)** climate-protection rating, EnBW received the rating B/Management for its climate reporting in 2018, after the CDP had once again made the requirements more stringent. This rating means that EnBW continues to hold a leading position in the energy sector within the German-speaking DACH region. In 2018, more than 7,000 companies worldwide participated in the questionnaire issued by the CDP.

Further information on the sustainability ratings is available at www.enbw.com/sustainability. Further details on non-financial performance indicators are presented on p. 94 ff., while information on the financial ratings from the rating agencies Moody's, Standard & Poor's and Fitch can be found on p. 86 f.

Social engagement

EnBW is acutely aware of its responsibility towards society. Its commitment to addressing the concerns and interests of society focuses on the target groups of end customers, business partners and local authorities within its primary business sphere of influence in Baden-Württemberg. Support for superordinate social issues is concentrated on the **core areas** of popular sport, education, social issues, the environment, art and culture.

The Group guidelines on corporate sponsoring, memberships, donations and involvement with universities govern the goals, responsibilities, standards, principles and processes for all companies in which EnBW AG either holds a majority of the shares or voting rights. The **donations** made by EnBW are documented on a yearly basis in the donation report that is presented to the Board of Management. In 2018, the donations made by the EnBW Group came to €2.2 million, following €1.0 million in the previous year. Donations worth €604,000 (2017: €383,000) were attributable to EnBW AG. This increase at both a Group and AG level came primarily from the increase in support provided to the Group's own foundations. The EnBW Board of Management decided a number of years ago not to send Christmas gifts to business partners but instead to make charitable donations in Baden-Württemberg. As part of the **Christmas donations** in 2018, a total of €32,000 was given to eight charitable campaigns or campaigns initiated by readers of regional newspapers in Baden-Württemberg. The subsidiary Netze BW also made donations in 2018 to social causes run by charitable organisations in Baden-Württemberg.

In 2018, **Pražská energetika (PRE)** supported the Charta 77 Foundation – Barriers Account – and the Jedlička Institute, which provides apprenticeships and social services for physically handicapped young people. **Stadtwerke Düsseldorf (SWD)** has helped schools with the task of guiding young people towards a career for many years. In addition, it participates in interschool competitions such as the "Düsseldorf School Prize" for outstanding school projects focussing on social, health or cultural topics. SWD makes a Christmas donation to four charitable associations in Düsseldorf that are selected each year. **VNG** has supported the "Network of Warmth" since 2001, which promotes and funds charitable work in Germany. In addition, its subsidiary ONTRAS supports individual charitable projects from associations and initiatives via its "ONTRAS.Stadtbekannt" funding programme and participated in the "Foundation for volunteering and civic involvement in Mecklenburg-Vorpommern".

As part of the "We're making it happen" project (www.enbw.com/wir-machen-das-schon), EnBW also supported social or charitable projects with the **Making it happen bus** in 2018.

Associations and charitable organisations could apply for assistance with their projects. The winners were each provided with support from the EnBW team of up to ten employees in the form of manpower, motivation and materials worth up to €5,000. A total of 17 projects have been successfully realised up to now. Further information on this subject can be found at www.enbw.com/macherbus.

EnBW regularly offers young artists space in its buildings for their **exhibitions**: "MaterialGestalten" (MaterialForms) was the third exhibition in the series called "Design now!" that could be seen in June and July 2018 in EnBW City. The "Insights into artist's workshops" (Ateliereinblicke) exhibition featuring work from Marie Lienhard was promoted by EnBW from November 2018 to the end of February 2019.

EnBW provides manpower and financial support to the **Energy & Climate Protection Foundation**. The foundation holds numerous events dealing with questions about the energy industry, as well as on the themes of climate change and innovation. At the Urban Climate Talks on 14 June 2018, the focus was placed, for example, on the contribution that can be made by each individual person to climate protection. Other topics covered were storage technologies, the phasing out of coal power and financing the Energiewende (www.energie-klimaschutz.de).

At the beginning of 2018, occupational medicine and health management at EnBW held a second **donor recruitment campaign for the German Bone Marrow Donor Registry (DKMS)**. Some 600 employees registered for the campaign, after 1,000 employees had already registered for the first DKMS donor recruitment campaign in 2011. The DKMS works to identify possible stem cell donors so that people suffering from leukaemia can be given the chance of recovery.

The influx of refugees into Germany remains a major social, political and economic challenge. EnBW is engaged here on multiple levels: EnBW already developed a training concept for refugees in 2015 with the goal of providing sustainable support with an eye to the future for the people affected and their countries of origin. A multi-stage **career integration programme** has been run by EnBW in Karlsruhe and its subsidiary Netze BW in Stuttgart since 2016. Since the beginning of 2018, 150 participants have been introduced to technical careers in introductory days and work placements during the first stage. A total of 37 participants then took part in the second stage to obtain an introductory qualification from September 2018. In the third stage, 17 participants from last year's programme have been learning an IHK-certified technical profession in dual vocational training at EnBW or Netze BW since September 2018. EnBW is also supporting employees who are providing **assistance to refugees** on a voluntary basis. Numerous small aid projects are promoted that mainly focus on language training, sport and meaningful leisure activities. Around 45% of the donation pot established by EnBW for this purpose in December 2015 had been utilised by the end of 2018.

EnBW has participated in the employers' initiative **"Right to stay through work"** since January 2018. The aim of the initiative is to make a contribution to the success of integration through work. In addition, EnBW has been a member of the **"We stand together – German industry integration initiatives"** network since September 2018. The joint platform www.wir-zusammen.de gives examples of already successfully established projects, promotes transparency and offers guidance.

We also refer you to the details provided in the "Report on opportunities and risks" (p. 118).

Dialogue with citizens

The **expansion of renewable energies** is an important goal that EnBW is pursuing with great commitment. We plan, construct and operate wind farms and photovoltaic power plants in direct partnership with or with the participation of local authorities and citizens. At various sites, we offer free tours for visitors and visitor groups throughout the year.

The **expansion of the grids** for the purpose of connecting up renewable energies is gaining more and more attention in the media and amongst the general public. At the very forefront of this work are the central infrastructure projects forming part of the Energiewende to expand the transmission grids with the two north-south connections SuedLink and ULTRANET by our subsidiary TransnetBW. In the SuedLink project, each stage is accompanied by public events in all six federal states and 36 districts affected by the plans. In addition, the WebGIS online

planning tool provides an opportunity to submit ideas at any time for optimising the area covered by the grid connection. There are also extensive opportunities for citizens to participate in the planning and implementation of ULTRANET, both in advance of and during the public law proceedings.

The EnBW subsidiary Netze BW informed citizens about the grid expansion plans for the 110 kV high-voltage grid in numerous dialogue events in 2018. Citizens were also informed by EnBW in April about the expansion plans for the pump storage power plant in Forbach. A public information event was held in Marbach am Neckar in November about the special technical equipment for grids that EnBW plans to construct at its existing power plant site and which will form part of its bid for the invitation to tender issued by TransnetBW.

Alongside economic and technical aspects, the Energiewende and the associated phasing out of nuclear energy also encompass elements of social responsibility. EnBW unequivocally assumes responsibility for the safe **dismantling** of the nuclear power plants it operates. Dialogue with the local population includes, for example, the annual information days on the dismantling work – an established platform that EnBW used for the sixth time in 2018. Any interested citizens were invited to attend the events held at the sites in Philippsburg, Neckarwestheim and Obrigheim. In addition, those responsible for the dismantling work were available to answer questions at public meetings of the municipal councils, public hearings and information events. There was also dialogue with many citizens and functionaries who took part in the visitor tours at the nuclear power plants in 2018.

In dialogue with our stakeholders

Selected activities in dialogue with our stakeholders

Stakeholder	Opportunity for dialogue	Main themes	Further information
 Shareholders/ capital market	Financial reports	Financial and non-financial performance of the company	www.enbw.com/financial-publications
	Annual General Meeting	Dialogue with shareholders	http://hv.enbw.com
	Telephone conferences/discussions with analysts and investors	Corporate economic development, positioning on capital market	www.enbw.com/conferencecall www.enbw.com/investor-update
	Bankers' Day and Capital Market Day	Latest developments at EnBW and in the energy sector	www.enbw.com/bankersday www.enbw.com/capital-markets-day
	Green bond roadshow	Presentation of the EnBW Green Financing Framework and the projects selected for it	www.enbw.com/green-bond page 85 f.
 Employees	EnBW aktuell	Two events providing current insights into the themes of digitalisation and the grids business	
	Strategy dialogue 2018	A total of 1,300 participants discuss the implementation of the 2025 strategy in workshops	page 96
	Leadership Forum 2018	Group-wide meeting for the management team and other employees in leadership positions with 700 colleagues	page 97
	Diversity campaigns	Participation of EnBW in Christopher Street Day in Stuttgart; careers information day "Girl power for the electricity grid" by Netze BW	www.csd-stuttgart.de page 97 f.
 Customers	Trade fairs and congresses	For example: "Aktionstag Elektromobilität", "Strategiedialog Automobilwirtschaft", Hannover Messe and "Handelsblatt Jahrestagung Gas"	
	Platforms for dialogue and discussion with customers	For example: customer parliament, Energy Strategy Days or EnBW Property Developer Energy Day	
	Customer magazine, customer blog, social media channels, newsletter and local presence	Information on latest news, products, services and events	www.twitter.com/enbw www.facebook.com/enbw www.enbw.com/blog
 Local authorities/ public utilities	Energy Day for local authorities	Presentation of products and innovations to around 1,000 representatives from cities and local authorities	www.enbw.com/kommunaler-energietag
	Energy Team Baden-Württemberg	Joint dialogue platform for municipal utilities, regional suppliers and EnBW	
 Society/ environment	"Making it happen" bus campaign	EnBW employees support social and charitable projects	www.enbw.com/macherbus page 61
	"Energy on Tour"	New educational project on the energy supply of the future for high schools	www.enbw.com/energie-auf-tour
	Tours and open days	More than 30,000 visitors to EnBW info centres and events at power plants	www.enbw.com/besichtigungen
	Biodiversity: funding programme: "Stimuli for Diversity"	Eight protective measures for amphibians and reptiles will be supported in the 2018 funding year	www.enbw.com/biodiversitaet page 104
	Sustainability Week 2018	6th Sustainability Week by NaturEnergie+ on the theme of upcycling	www.naturenergieplus.de
 Suppliers/ business partners	Dialogue on handling coal procurement responsibly	EnBW delegation visits governmental and non-governmental organisations in Colombia, discussions with NGOs in Russia	www.enbw.com/kohlebeschaffung page 71
	Urban Innovation – solutions for the city of tomorrow	Presentation of innovations from EnBW and its participating interests to external partners from business, politics and the start-up scene	www.urbaninnovation-event.de page 68
 Politics/ media	Project to promote young talent	For example: "Energy Campus", "Green Innovation and Investment Forum" or "Energy Reporter"	www.energie-klimaschutz.de
	Discussion events on energy industry and climate protection topics	Urban Climate Talks 2018, five debate evenings, cooperation events: "Mobility in my city", "WELT" energy summit, etc.	www.energie-klimaschutz.de
	EnBW Energy and Business Club (EWC)	Events on the themes of sector coupling – the transport transition meets the distribution grid, electromobility and climate protection	
	Foundation 2°	EnBW becomes one of the sponsors of Foundation 2° – German Businesses for Climate Protection	www.stiftung2grad.de page 73
	Active and transparent communication via the media	Major articles in daily newspapers and magazines such as "Süddeutsche Zeitung", "Manager Magazin", WAZ; Events with "Tagesspiegel" or "Die Welt"	www.enbw.com www.twitter.com/enbw www.facebook.com/enbw

Research, development and innovation

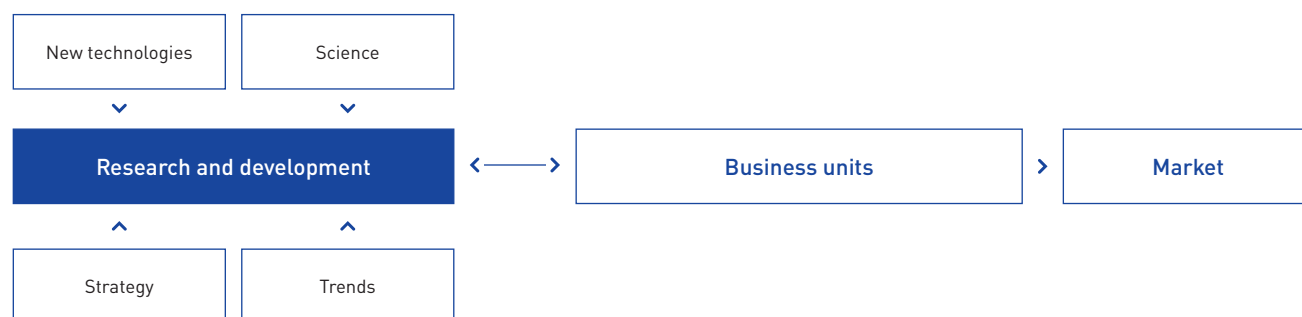
Research and development: Goals, guidelines and processes

The goal of research and development at EnBW is to identify important trends and technological developments at an early stage and to develop new skills for future business activities in pilot and demonstration projects. For this purpose, research projects are carried out in collaboration with the operational units at EnBW or with customers – directly at the site of their subsequent application. They form a project portfolio that is

centrally coordinated for all EnBW units. This ensures that successful research projects deliver innovations for EnBW. The research and development activities are integrated into an external and internal network of partners.

Research, development and innovation also leads in many cases to inventions and patents. The portfolio of patents grew by 25 patents (previous year: nine) in 2018; the EnBW Group held 208 patents (previous year: 183) at the end of the year. The patents held by EnBW focus mainly on the areas of generation and grids.

The research process at EnBW



Research and development: Key points and selected results

Research and development at EnBW focuses on renewable energies, green gases and storage systems for the smart digital energy world.

Renewable Energies

Wind energy: Offshore wind power plants with fixed foundations are limited to shallow waters. Floating platforms could be used to exploit the wind power potential in deeper waters. In cooperation with partners, EnBW is investigating various different concepts for **floating offshore wind farm projects** that would be suitable for opening up new international offshore wind energy regions. In the reporting year, negotiations about an investment in a Danish floating platform concept did not result in an agreement. Alternatives will now be investigated.

In addition, EnBW is a member of a consortium headed by the manufacturer Senvion that aims to design a **prototype for an offshore power plant with an output of more than 10 MW** and construct it as a pilot plant with funding from the EU. Larger wind turbines are a prerequisite for further reducing the cost of

generating electricity in offshore wind farms. In expectation of these developments, bids were already submitted in the latest auctions that forgo funding via guaranteed feed-in remuneration. The competitiveness of offshore wind energy on the electricity market has thus increased further. The project began in 2018 with the design of the prototype and will run until 2021.

Artificial intelligence (AI) is a key technology of the future and is concerned with the automation of intelligent behaviour. It uses self-learning algorithms that adapt their behaviour based on experience gained during earlier computations and so learn to independently solve problems. EnBW is developing AI expertise along the whole value added chain with the aim of exploiting the significant competitive advantages on offer. For example, EnBW has developed **ADAZ (Application for Diagnosis, Analysis and Status Monitoring)** for the early identification of technical damage to wind power plants and to help avoid any subsequent damage. The system evaluates data at sampling rates of up to 50,000 pieces of data per second. It is thus possible to identify damage early and reduce repair costs. Wind power plants with a total output of 720 MW were already monitored by ADAZ in 2018. Savings of several millions of euros were achieved as a result. The services provided by ADAZ have already been marketed externally. In addition, a pilot project is being completed for a large, potential customer.

Photovoltaics: The University of Stuttgart has developed a laser process that enables the inexpensive production of non-toxic silicon solar cells with a high level of efficiency. These cells achieve higher efficiency because the electrical connections are all made at the rear of the cell and there are no contacts on the front which could shade some of the incident light. EnBW has been cooperating in this government-funded research project since August 2017. An efficiency of more than 22% was achieved using 16 inch cells for the first time in 2018. The EnBW subsidiary EnPV – founded in December 2017 – has started work on marketing the patented process.

Geothermal energy: The partners Électricité de Strasbourg and EnBW jointly operate the Soultz-sous-Forêts geothermal power plant in the Alsace region that uses a well-researched geothermal reservoir at a depth of 5,000 metres. The gross electrical output of the power plant is 1.7 MW. In 2018, the power plant generated 7.7 GWh of electricity as in the previous year with an availability of 96% (8,400 operating hours, previous year: 90%, corresponds to 7,900 operating hours). In cooperation with the company Stadtwerke Bruchsal GmbH, EnBW has been operating the Bruchsal geothermal power station since 2009. The demonstration plant generates electricity with a nominal output of 0.5 MW using 120 degree hot thermal water pumped from a depth of 2,500 metres. The power plant not only generates electricity but also district heating from geothermal energy for a public facility. The heating circuit was constructed in 2018 and will be placed into operation at the beginning of 2019. EnBW is thus expanding its geothermal expertise to include the supply of heating to customers.

Green gases

We also want to provide our customers with carbon-neutral gaseous energy sources in the long term. EnBW started a Group project in 2018 to identify the necessary steps towards a gas supply that will reduce CO₂ emissions from fossil fuels by 2030 and assess the technological possibilities for the period afterwards. The experience gained from various pilot and demonstration projects will help us achieve this. With the aid of government and state funding, EnBW carried out research into the fuelling infrastructure required for quick fuelling at a pressure of up to 700 bar and that incorporates flexible hydrogen electrolysis, most recently for buses in Stuttgart, at **hydrogen filling stations** in Karlsruhe and Stuttgart from 2011 to 2018. Since the beginning of 2019, the EnBW subsidiary ZEAG has been generating **green hydrogen** with the aid of state funding. It is using a 1 MW PEM electrolyser (PEM = proton exchange membrane) that converts green electricity from the “Harthäuser Wald” wind farm into green hydrogen. The green hydrogen is used in mobility initiatives in Baden-Württemberg, for generating heat at combined heat and power plants and at the rocket test rig at the German Aerospace Center (DLR) in nearby Lampoldshausen. Energiedienst Holding (ED) already opened an alkaline **hydrogen electrolysis plant** with an electrical output of 1 MW in Wyhlen in November 2018 – operated with green hydropower. The target market is the transport sector.

In the Biohybrid project, the EnBW subsidiary Erdgas Südwest has developed a concept to make biogas with the quality of natural gas available anywhere where customers may require

electricity and heating without CO₂ emissions from fossil fuels. The key concept behind Biohybrid is to store biomethane in liquid form and feed it back into the gas grid as required. As a liquid fuel, Bio-LNG (LNG = liquefied natural gas) is also suitable for use in the transport sector. A market exists for Bio-LNG due to the current situation regarding CO₂ emissions. The company is currently looking for suitable sites in Baden-Württemberg for the first **Biohybrid plant**. The EnBW subsidiary bmp greengas is already handling the marketing of biogas products. A pilot project to examine the opportunities offered by carbon-neutral liquid energy sources will be carried out by ED and is currently at the detailed planning stage. In cooperation with its partners, the aim is to produce synthetic diesel and paraffin using CO₂ and hydrogen in Laufenburg. The approval for construction was given in 2018.

Storage systems for the smart digital energy world

Load management for electromobility: Our subsidiary Netze BW started the NETZlabor “E-Mobility Avenue” in Ostfildern near Stuttgart in 2018. Customers in the same street with eleven electric cars, a home storage system and a grid battery are helping us simulate a future centred on electromobility and enabling us to analyse user behaviour and the state of the grid. We can use this information to develop concepts for the efficient operation of the grid and to better exploit the mobile and fixed storage systems for smart electricity grids.

New technologies for the charging infrastructure: The EnBW Group is also investigating alternatives for electrifying transport: A test track for electrical **HGV goods traffic with overhead power lines** will be developed in the district of Rastatt between Gernsbach-Obertsrot and Kuppenheim by the end of 2019. Our grid subsidiary Netze BW is a strategic partner in the “eWayBW” project which will be run by the Transport Ministry of Baden-Württemberg until 2022. At the same time, EnBW is also working on **induction systems**. A feasibility study conducted together with the Karlsruhe Institute of Technology (KIT) concluded in 2018 that alternative operating strategies could make contactless charging via the road as the vehicle drives along it an attractive proposition. The research into these new possibilities is being continued.

Storage systems for commercial customers: EnBW cooperated in a demonstration project with the storage system supplier ads-tec, the solar experts from Pohlen Solar and the retail company Aldi Süd until 2018 to find out how the discount store could use even more self-generated solar electricity in their branches. The project has now been successfully concluded and has demonstrated that the shops can increase their own solar consumption even further using battery storage systems. The challenge is to guarantee the economic efficiency of the system against today's prices for storage systems and energy. In this practical test, EnBW was able to demonstrate the great potential offered by solar power plants in combination with storage systems depending on the control algorithms used.

Storage systems for household customers: In autumn 2016, three household customers were fitted with storage systems in order to develop a smart control system that can adapt to the availability of electricity on the grid and postpone the times

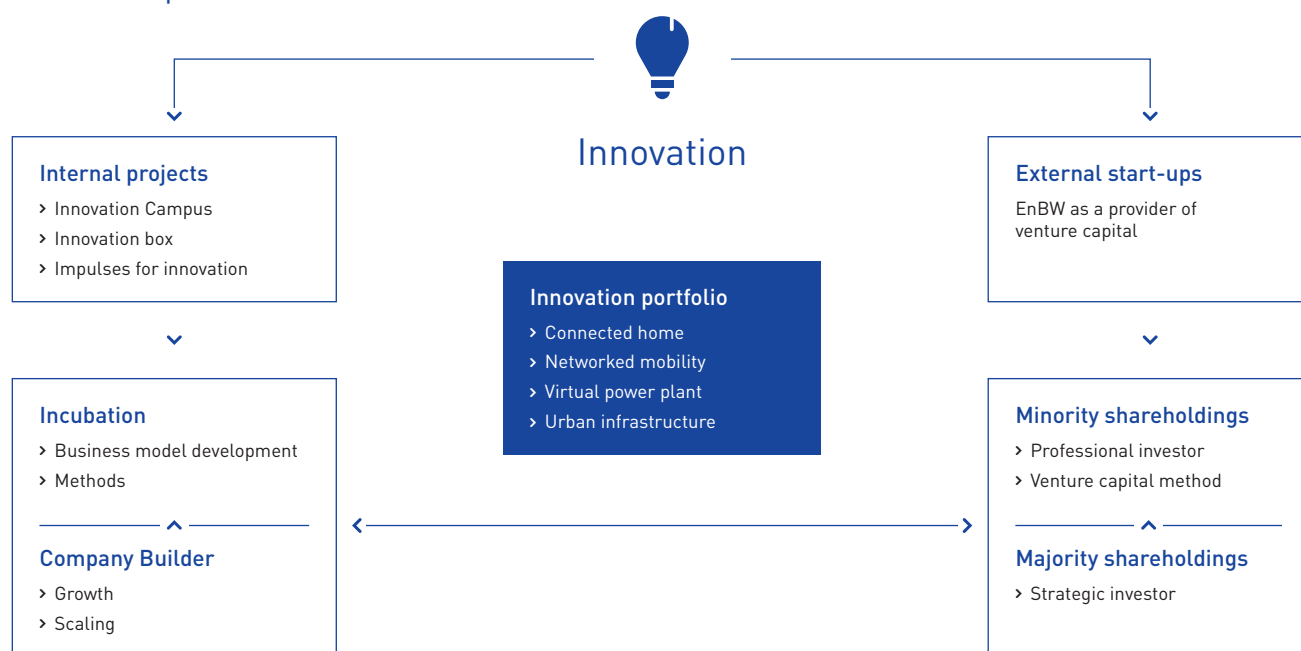
electricity is drawn from the grid without any loss in comfort. The project ended in June 2018 after running for two years. It has demonstrated that by using good battery management many households could significantly shift the times at which they draw electricity. The results from these storage projects with customers will also flow into the development of commercial products from our subsidiary SENEK, which EnBW acquired in 2018.

Power plant storage systems: Cross-sector considerations on how storage systems can provide added value led to a co-operation with Bosch to develop battery solutions for the energy market. The large 5 MW battery installed at the Heilbronn coal power plant was inaugurated in April 2018. It enables the power plant to respond even better to fluctuating decentralised feed-ins. EnBW is responsible for the marketing of the stored energy in this joint venture.

Beyond the main focal areas of renewable energies, green gases and storage systems, EnBW is also pursuing interesting individual projects such as **phosphate recycling**: In cooperation with its subsidiary MSE Mobile Schlammwässerungs GmbH, EnBW has developed a process to recover phosphorous in mobile units at sewage treatment plants before the dewatered sludge is incinerated in power plants. Phosphorous is essential for plant growth but is in scarce supply in Germany. Following successful tests at seven sewage treatment plants, MSE concluded contracts for the recovery of phosphorous with two local authorities in Baden-Württemberg and North Rhine-Westphalia in 2018. Customers are thus offered resource-conserving recycling of sludge in accordance with the revised German Sewage Sludge Ordinance. The magnesium ammonium phosphate recovered in the process is a valuable plant fertiliser (www.mse-mobile.de).

Innovation management: Goals, guidelines and processes

The innovation process at EnBW



EnBW develops new business models outside of its core business through central innovation management in order to quickly identify new sources of revenue for the Group and bring them to the market. The innovation strategy focuses on two main approaches: the internal generation and scaling up of new business models in internal projects and investments in external start-ups by EnBW New Ventures GmbH. Following the successful development of new business models, the EnBW start-up teams then face new challenges in the growth and scaling up phase. In order to efficiently support teams during this phase, innovation management has established the Company Builder: It provides start-ups with additional skills in the form of controlling, sales and marketing experts so that the start-ups can optimise their products and position them on the market. For the refinement of existing sales channels or the development of

new ones, support is also given in the areas of process automation and cost optimisation.

EnBW New Ventures invests in start-ups that are driving the converging markets for energy, mobility and urban living. It focuses on companies who realise value added through scalable business models and new technologies. The aim is to use the total available investment volume of €100 million to secure minority shareholdings of between 10% and 30% in up to 20 start-ups. EnBW New Ventures plays the role of an active investor, supports the start-ups as a business coach or kind of “sparring partner” and is represented on their boards. Via EnBW New Ventures, the start-ups receive access to professional investor expertise and to a customer and supplier network on the energy market. In addition, commercial cooperation with

the operating units at EnBW is also possible. In order to target substantial growth, EnBW will in future, beyond the activities of EnBW New Ventures, also invest in start-ups which already have a tested business model and a successfully launched range of products/services.

Innovation: Key points and selected results

Virtual power plant (Glossary, p. 155): The energy system is being transformed into an ecosystem of numerous small and decentralised power plants that generate, save or consume electricity: photovoltaic power plants, wind turbines, batteries, electric vehicles and heat pumps. This produces complex energy networks that demand new skills. EnBW is utilising its expertise gained from the operation of highly complex systems and is transferring this knowledge to the development of new business models and a digital platform. The activities carried out by EnBW also include direct distribution of even the smallest regenerative power plants, electricity communities (P2P), digital trading access, dynamic tariffs and flexibility management.

Both the business models and the platform are designed so that new themes can be quickly added, existing skills from the stock of business models can be quickly recombined and a modern digital process landscape is maintained right from the beginning. Direct distribution enables customers to sell their own electricity – which will become the norm after EEG funding ceases. Alongside the established small-scale activities, the project has now developed a portfolio of more than 250 MW and has hundreds of customers. The flexibility management system controls the loads so that added value is generated for both customers and the energy system. Digital trading access ensures that even small companies will be able to benefit from the fluctuating and in some case negative prices on the market. This is where the superchargers from EnBW – currently consisting of more than 110 high-performance charging stations – are connected up, networked and supplied with electricity. Access for around 600 units is contractually guaranteed. Electricity communities bring together electricity generators and consumers from within the same region or bring them together virtually so that the community is able to collectively use and share electricity from a specific source. EnBW has already established numerous regional clusters of this kind in cooperation with the start-up Lumeneza, part of the EnBW New Ventures portfolio.

First micro business unit: In order to offer campus projects from EnBW better opportunities for growth, innovation management has created the concept of internal spin-offs in cooperation with

the compliance and data protection department (p. 58). Mature projects with marketable business models that are in line with the EnBW strategy and have already generated their first sales can now be spun-off into so-called “micro business units”. SMIGHT – the first micro business unit – was launched in May 2018 and it has now evolved from a campus project to an independent business unit. A new system of corporate governance in the form of the so-called “Basic Rules” has been created for the micro business units. The special feature of the Basic Rules is that as a micro business unit, SMIGHT can take advantage of Group services offered by EnBW such as legal advice or purchasing and IT services. On the one hand, the rules create the necessary scope for the further development of the business model, while on the other hand, they are subject to certain fixed targets and guidelines set by innovation management. The SMIGHT team have been able to almost triple their revenue between 2017 and 2018 as a result.

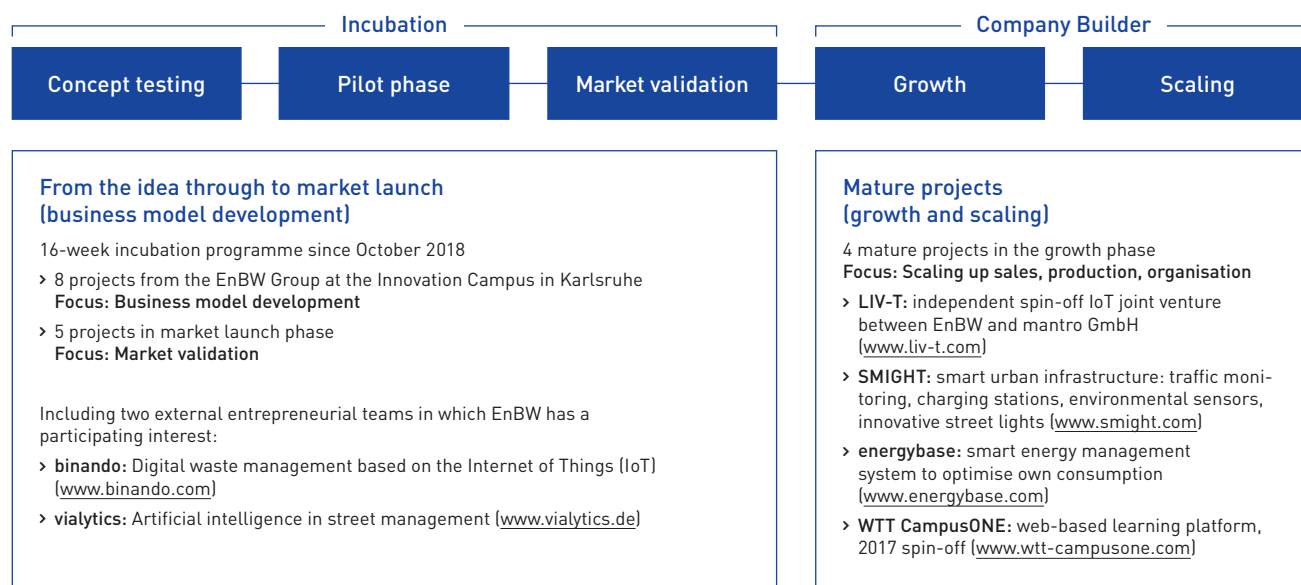
EnBW incubation programme: EnBW innovation management supports start-up projects during the incubation phase from the initial idea through to market launch and accompanies mature projects during the growth and scaling up phase with the Company Builder. A total of more than 30 start-up projects have been set up, put to the test, refined and in some cases rejected in the past four years. The aim is now to make the innovation process even more efficient and stringent with a new programme. Eight EnBW projects are currently participating in the so-called “16 to the power 4 incubation programme”, which was launched at the Innovation Campus in Karlsruhe on 1 October 2018. External teams have also been able to apply to join the programme since January 2019 (www.sparkthefuture.de).

Five other projects have already completed the first incubation phase and are now at the market launch phase. They include two external company teams: binando who develop solutions for the digital management of waste based on the Internet-of-Things (IoT) and vialytics who develop artificial intelligence solutions for street management.

Four mature projects are currently in the growth phase:

- > LIV-T – an independent spin-off joint venture from EnBW and mantro GmbH that develops data-based Internet of things (IoT) products that allow the energy infrastructure in buildings to be intelligently networked
- > SMIGHT – a project that equips existing infrastructure such as street lighting, transformer stations or charging stations with sensors to optimise traffic flows, monitor the electricity grid or provide information on free parking spaces
- > energybase – a smart energy management system used to optimise energy consumption
- > WTT CampusONE – the award-winning digital learning platform

Innovation management: projects at incubation and market maturity stages



The holistic approach followed by EnBW innovation management was awarded the rating “very good” by the magazine “Capital” in 2018 for its stringency and depth.

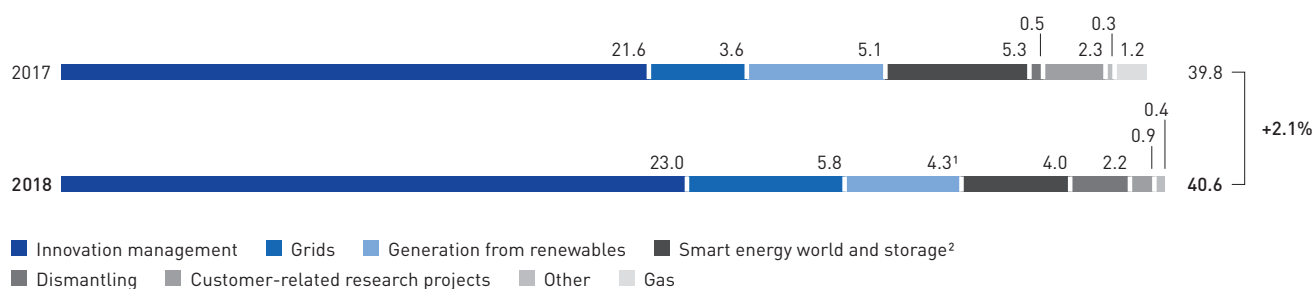
Urban infrastructure: At the first EnBW Innovation Conference that was held in September 2018 at the Innovation Campus in Karlsruhe, the EnBW Group and selected start-ups presented innovative solutions for the city of tomorrow. EnBW used the event to demonstrate the innovative strength at the company and to show what the Group has in common with the world of start-ups. Especially against the background of the future transformation of EnBW into an urban infrastructure supplier, EnBW subsidiaries and cooperation partners were also included in the search for urban innovations. A concept that proved a big hit: More than 30 exhibitors presented their solutions for the city of tomorrow at the end of the event to around 500 guests from business, politics and the start-up scene. The exhibition was accompanied by a series of talks featuring renowned guest speakers.

Expenditure and personnel

The EnBW Group spent €40.6 million (previous year: €39.8 million) on research, development and innovation in the 2018 financial year. In contrast, the income generated by innovation management stood at €6.4 million. The Group received government research grants of €2.3 million (previous year: €2.9 million). There were 63 employees (previous year: 61) in the areas of research, development and innovation in 2018. 169 employees (previous year: 193 employees) were involved in research and development projects as part of their operational work. A further 110 employees (previous year: 105) were involved in innovation projects.

Expenditure on research, development and innovation

in € million



¹ Also includes green gases.

² Includes e.g. electromobility and hydrogen mobility.

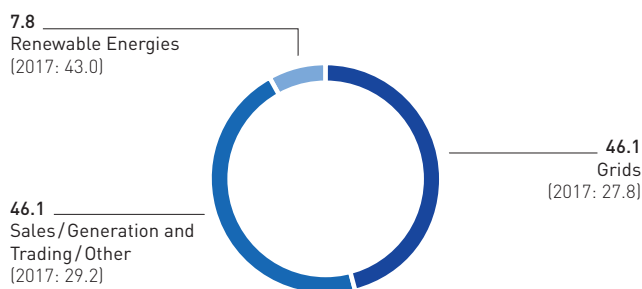
Procurement

Efficient and sustainable procurement processes

Purchasing at EnBW views itself as a partner for generating added value within the Group. It ensures the supply of materials and services at the best possible quality/cost ratio and thus strengthens the competitiveness of the company. EnBW places great emphasis on the efficient design of its procurement processes for achieving cost-effective purchasing results, as well as on sustainable procurement taking into account the requirements of national laws, EU law and the Group's internal guidelines. In order to manage the procurement processes, a system using various different performance indicators is used. It continually delivers a realistic picture of the current situation in purchasing and enables a comparison of the target and actual situation, as well as the prompt implementation of control measures.

The **procurement volume** of the EnBW Group in 2018 (without ITOs) (Glossary, p.154) amounted to around €2.5 billion (previous year: around €4.1 billion).

Procurement volumes of the EnBW Group by segment
in %



A large number of suppliers and service providers contribute to the services rendered by EnBW. They play an important role in the company's efforts to achieve a leading position on the energy market. **Supplier management** promotes successful cooperation between suppliers and EnBW because it makes the performance of the suppliers transparent and also makes continuous optimisation in partnership possible. The careful selection of our business partners is a part of our risk management system and supports the observance of legal regulations and internally defined quality standards.

Sustainable procurement begins with the careful selection of business partners. Central purchasing at EnBW AG uses a standardised **pre-qualification process** for this purpose.

Different thresholds are set depending on the product group and internal risk classification. Suppliers are required to provide a self-assessment via the EnBW supplier portal on whether they practise sustainable measures in the areas of data protection, quality management, environmental management, the respect for human rights, the fight against corruption and occupational health and safety. This self-assessment was completed by 90% of our suppliers by the end of 2018 (measured by procurement volume). Centralised documenting of certificates enables us to ensure that all the necessary prerequisites for awarding a contract are fulfilled. In general, the information is checked every three years on the basis of a renewed self-assessment. In the General Terms of Purchase of the EnBW Group, the supplier undertakes to observe the regulations on work safety, to pay a minimum wage and to observe the compliance and environmental principles of EnBW. In addition, the supplier undertakes to observe the regulations in the German Occupational Safety Act, the legal regulations for technical equipment, accident prevention regulations, the regulations on hazardous materials and any regulations on technical safety and occupational medicine in the "Additional Work Safety Terms of Purchase".

As a result of the increasing decentralisation of energy generation caused by the focus on renewable energies, the complexity of the supply chain is growing and integrated **supply chain management** is becoming more important. This requires a comprehensive examination of the value added chain and the early identification of opportunities and risks. Especially with regard to the selective internationalisation of the business, central purchasing has developed an integrated supply chain management system in close cooperation with the business and functional units. EnBW gave another indication of its aim to tap into selected international growth markets in the area of renewable energies with its entry onto the Swedish market and its first activities in France, Taiwan and the USA in 2018.

As part of the recertification audit according to ISO 14001:2015, it was confirmed that issues that must be handled by the **environmental management system** are firmly integrated into the processes in central purchasing and that the traceability of relevant goods is ensured over their entire life cycles. Purchasing has firmly anchored sustainability and the protection of the environment into the General Terms of Purchase. In the section on environmental management, suppliers undertake to support the environmental principles of EnBW – especially those relating to environmental and energy management, climate protection and energy efficiency, emissions protection, biodiversity, water and soil protection and the use of resources.

Subsidiaries of EnBW that are not overseen by central purchasing address a number of non-financial aspects in purchasing with their own mechanisms.

Energiedienst Holding (ED) works together closely with central purchasing at EnBW AG to procure important product groups using joint invitations to tender and framework contracts, as well as in the associated pre-qualification processes. In addition, orders are placed largely with regional suppliers from Germany, Switzerland or neighbouring EU countries. ED believes that cooperation with these suppliers has proven its worth due to good supplier relationships and short response times. The purchasing terms at the ED Group were revised in 2018 with respect to environmental management requirements.

Purchasing at Pražská energetika (PRE) ensures that suppliers observe practices such as the payment of social security contributions, the settlement of tax liabilities and the prevention of money laundering. Potential suppliers must verify their compliance with these aspects by either submitting a sworn declaration or by presenting corresponding certificates when bidding for invitations to tender. The fulfilment of these obligations is also stipulated in supplier contracts.

At Stadtwerke Düsseldorf (SWD), sustainability aspects are anchored in the compliance guidelines, environmental management system manuals and process descriptions. In the area of procurement, SWD pays particular attention to the use of environmentally friendly and sustainable products. It also uses clauses in its supplier contracts to reinforce the fight against corruption and bribery and ensure observance of labour and social laws.

The fundamental principles for procurement at VNG are regulated by a code of conduct, the management handbook and Group guidelines. Aspects such as the prevention of corruption – which is embedded in the compliance management system and environmental management system – are a fixed component of procurement processes.

Responsible raw materials procurement in the coal sector

Origin of coal supplies

Hard coal will continue to play an important role for EnBW as a source of energy to ensure a reliable and economic supply of

electricity. Some 3.82 million t of coal were delivered to EnBW power stations in 2018 (previous year: 4.55 million t of coal). This corresponds to a procurement volume of almost €300 million.

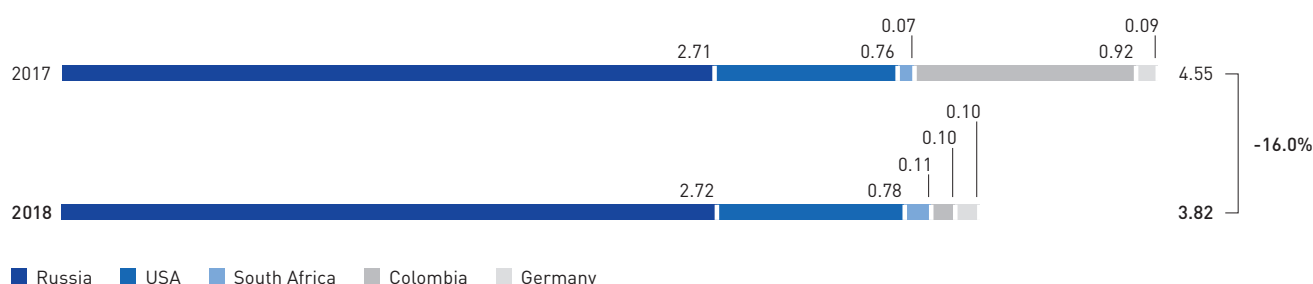
Russia was able to significantly expand its leading position on the generally declining market in Western Europe due to its geographical proximity to the shipping ports. In contrast, Colombian coal now only plays a subordinate role in Western Europe because Colombian mining companies have been able to secure higher prices for their coal in America, Asia and the Mediterranean region. It was thus for commercial reasons that EnBW purchased significantly less coal from Colombia than in the previous year, irrespective of sustainability aspects.

The origin of coal sourced from Russia can only be localised to the mining region of the Kuznetsk Basin (Kusbass) due to the large number of coal mines and coal producers in the country. A similar situation exists in South Africa, where the coal is sourced from the Mpumalanga Province. In contrast, it is possible to precisely trace the source of coal from Colombia because the three major Colombian coal producers have their own shipping ports. EnBW AG purchased Colombian coal from the producers Drummond and Glencore for its power plants in 2018. The coal from the USA originated almost exclusively from underground mining in the Illinois Basin and the Northern Appalachians.

EnBW places importance on maintaining a balanced procurement portfolio to avoid becoming dependent on individual producing countries, producers or traders, and the associated price and supply risks. EnBW now covers the largest part of its coal requirements through contracts held directly with selected producers. In addition, contracts with trade intermediaries are concluded which define a quality standard but not the source of the coal. More information on coal procurement at EnBW can be found at www.enbw.com/coal-procurement.

The opportunities and risks in relation to procurement and raw materials procurement can be found in the “Report on opportunities and risks” (p. 118).

Origin of coal supplies to EnBW power plants
in million t



Positioning, overarching concepts and due diligence for the protection of human rights

In accordance with the Guiding Principles on Business and Human Rights of the United Nations, EnBW strives to procure coal responsibly and thus to fulfil its human rights responsibilities. Due to the special challenges faced in the area of coal procurement, the ongoing CSR performance (Glossary, p. 152) of current and potential coal suppliers is regularly discussed on the basis of the **EnBW rules of conduct** governing the responsible procurement of hard coal and other raw materials (www.enbw.com/verhaltenskodex) and used to determine any future action. The coal suppliers are evaluated on the basis of relevant international standards, such as the UN Global Compact, the OECD Guidelines and the IFC (International Finance Corporation) Performance Standards. The latest studies by competitors and international initiatives also flow into the evaluation of producers, such as information and contributions from civil society organisations.

Our code of conduct in combination with internal guidelines acts as the foundation for the targeted achievement of responsible coal procurement. The annual assessment of coal producers is carried out using the EnBW sustainability index, which covers all areas of the code of conduct. In addition to regular auditing of the sustainability performance of business partners, a multi-stage auditing process will come into force in the event of suspected breaches of the code, which can lead to the termination of the business relationship or exclusion from our procurement process. The results of the analyses in the sustainability index are discussed as part of a control process by the committee for the responsible procurement of raw materials (comprising members from all relevant specialist departments) at least once a year. Findings from discussions with external stakeholder groups, such as representatives from civil society, legal experts for the individual countries and human rights experts, also flow into these analyses. If any deviations from the minimum standards are identified, corrective measures are implemented in cooperation with the producers for existing supply contracts. The committee for the responsible procurement of raw materials met on two occasions in 2018, to discuss the sustainability performance of all significant supplier companies on the basis of existing findings from the sustainability index, as well as current issues related to the import of raw materials.

Current developments

EnBW continued to follow its approach for the responsible procurement of coal in the reporting year and implemented the measures approved by the Board of Management in 2017.

Although imports from **Colombia** fell sharply in 2018 – irrespective of sustainability issues as described above – EnBW continued its dialogue with Colombian producers for the ongoing improvement of their CSR performance. In February 2018, representatives from EnBW visited two coal producers in the Cesar mining region. In addition, numerous individual discussions were held with different governmental and non-governmental players. The exchange of information and opinions focussed on, amongst other things, the working and living conditions in the region, the importance of coal exports for the development of Colombia and the contribution being made by the coal producers to the implementation of the peace process in the country.

The trip to Colombia was also used to collect information for a **progress and development report**. The purpose of the report is to analyse the improvements achieved in the working and living conditions in Colombian coal mining in the period from 2013 to 2018 – especially with a focus on the engagement of coal importers. The results of the study will be used to derive possible courses of action for EnBW that could form the basis for further dialogue with coal producers. The aim is to agree a clear roadmap in cooperation with the coal producers about how coal producers can fulfil human rights responsibilities. The report is due to be completed in 2019.

EnBW also intensified its efforts to collect information on coal mining in **Russia** in 2018, especially with respect to the working and living conditions in the most important mining region of Kusbass. This also included requesting CSR information from coal producers. Other insights were gained through discussions with representatives of Russian and German civil society organisations who deal with the social and ecological impact of coal mining in Russia. These discussions mainly focussed on the insufficient level of information on CSR aspects in the region and problems encountered when visiting the coal mines. It also became clear during the talks that NGOs in Russia take a different approach to discussions about potential problems. Direct confrontation with companies in the region is unusual and there is generally no open dialogue between the companies and NGOs on an equal footing. It is thus all the more important for EnBW to find opportunities in this area to influence the CSR efforts made by the Russian coal producers. In order to identify measures that can be taken, discussions are also being held with other companies that source coal from Russia.

In preparation for future (liquid) gas contracts with business partners from various countries, preliminary human rights assessments were carried out that then flowed into the subsequent procurement process.

Business Report

General conditions

External influences

The business performance of EnBW is greatly influenced by a wide range of external factors. These include, above all, the development of the wholesale market prices for electricity, the political/regulatory framework conditions and also the weather conditions. The price of electricity is not only dependent on demand but also on the development of the global markets for fuel and CO₂ allowances (Glossary, p. 152). In an environment characterised by a constantly growing share of generation accounted for by renewable energies, earnings are naturally influenced by the weather conditions. Important factors are, for example, the wind strength at sea and on land, the duration and intensity of sunlight and the amount of precipitation that impacts the water levels in rivers. In addition to these factors, the energy sector is still experiencing a period of fundamental change due to the transition to increasingly carbon-neutral methods of energy generation. The sales markets for our products and services are characterised by very intense competition with an increasing number of new players on the market. Furthermore, patterns of demand amongst customers, the market structure and technological requirements are changing.

Macroeconomic trends

Economies

The economies relevant for EnBW developed differently in 2018. Economic growth in Germany slowed compared to the previous year but remained at a high level, whereby private consumption continued to play an important role. The rate of economic growth in the eurozone as a whole also slowed a little. In contrast, the pace of economic growth accelerated in Switzerland. Turkey experienced a severe economic slump – the inflow of foreign investment and the tourism business both declined due to increasing political uncertainty. In general, the political and economic risks grew in Turkey in 2018.

Economic growth in Europe and Germany is set to slow down slightly in 2019. We anticipate that the general conditions for the business activities of EnBW will stabilise in 2019.

Development of gross domestic product (GDP)

in %	2019	2018	2017 ¹
World	3.5	3.7	3.8
Eurozone	1.6	1.8	2.4
Germany	1.3	1.4	2.5
Switzerland	1.8	3.0	1.7
Czech Republic	3.0	3.1	4.3
Turkey	0.4	3.5	7.4

¹ The figures for the previous year have been restated.

Development of interest rates

While the US Federal Reserve raised interest rates multiple times during 2018, the European Central Bank (ECB) continued its expansive monetary policy. In the second half of the year, the rates of return fell significantly due to political events (Italian election), increasing protectionism (trade tariffs) and the global turbulent economic environment.

The discount rates applied to company pension provisions and nuclear provisions remained at a low level in 2018 so that the present value of the pension obligations of EnBW was not subject to any change and the present value of the nuclear obligations was only subject to minor interest rate-driven changes.

The consensus forecasts for the ECB main financing rate remained unchanged at 0.00%.

Development of the sector and competitive situation

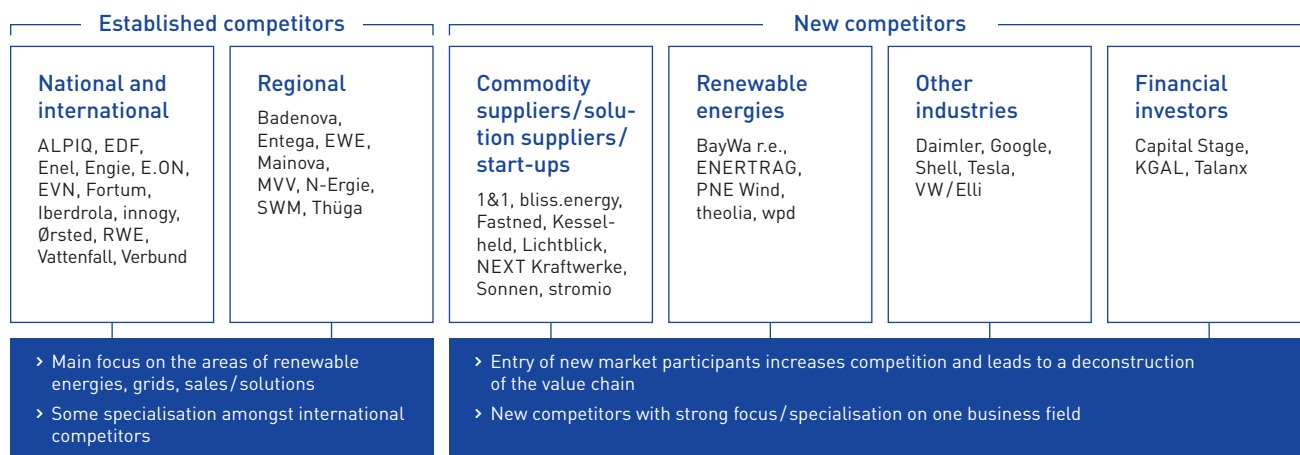
The energy sector is still in the middle of a period of fundamental change. This pertains to the transformation of the generation landscape and also to the transport transition, heating transition and increases in efficiency in energy consumption. In particular, renewable energies will increase their share of the mobility and heating sectors in the long term. In parallel, the business models followed by energy supply companies are changing and new players from outside the sector are also entering the energy market. This is especially true for the commodity and solutions business.

At the same time, companies are repositioning themselves along the traditional value added chain in the sector and specialising in certain business fields. A prominent example in the past year was the transaction between RWE and E.ON.

Another aspect is the desire amongst cities and communities to remunicipalise their electricity and gas supplies in the regulated grid sector. Against this background, the traditional energy supply companies need to re-examine their competitiveness in

individual business areas, exploit the potential offered by a changed market environment and align their strategies for the future [p. 38 f. and 48 ff.].

Selection of international, national, regional and new competitors



Cross-segment framework conditions

Climate protection

Climate protection remains a global challenge. The prolonged dry spell and high temperatures in the exceptionally hot summer of 2018 already gave some insight into the possible consequences of climate change for Germany.

The 24th UN Climate Change Conference was held in Katowice in December 2018. The international community agreed to joint measures for limiting global warming to significantly below two degrees Celsius in accordance with the Paris Agreement from 2015. The general rulebook adopted at the conference included, amongst other things, binding minimum standards for reporting on greenhouse gas emissions [Glossary, p. 153] and other climate protection measures. According to an estimate published by the Intergovernmental Panel on Climate Change (IPCC) in October 2018, which was acknowledged by the international community, CO₂ emissions must be reduced by about 45% from the level in 2010 by 2030, and reach zero by 2050 in order to limit global warming to 1.5 degrees Celsius.

The European Council agreed on measures to strengthen climate protection in 2018. These measures included a new Energy Efficiency Directive that defines a minimum energy efficiency target of at least 32.5% for 2030 compared to 2007, and a new version of the Renewable Energy Directive with the target of covering at least 32% of electricity consumption with renewable energies by 2030. In addition, the EU Parliament agreed to reform the European emissions trading system, whereby the annual reduction factor will be raised from 1.7% to 2.2% from 2021. A temporary increase in the prices of up to €25/t CO₂ for emissions trading was the result.

In Germany, the national climate targets for 2020 will not be achieved. In order to minimise the deviation from the targets for 2020 and ensure the targets for 2030 will be achieved, additional measures are required. Amongst other things, the German government has thus announced new legal regulations. The aim is to increase the share of gross energy consumption accounted for by renewable energies to 65% by 2030. The Omnibus Energy Act, which was passed by the Bundestag in November 2018, includes special auctions in the period from 2019 to 2021 with a total capacity of 4 GW each for onshore wind and photovoltaic power plants. Climate protection is also becoming a more significant issue for the business community. For example, Foundation 2° – an initiative started by German businesses – is committed to climate protection and limiting global warming to significantly below two degrees Celsius. EnBW and its CEO, Dr. Frank Mastiaux, have been members since May 2018. The aim of the initiative is to support politicians in the creation of the market economy-based framework conditions for climate protection.

EnBW is also advocating the introduction of a minimum price for CO₂ in order to help steer investment towards climate-friendly technologies. A minimum price could be introduced in Germany but this measure should cover as many European countries as possible, such as France.

The EnBW Chief Financial Officer, Thomas Kusterer, is a member of the Technical Expert Group on Sustainable Finance (TEG) [Glossary, p. 155], which is supporting the European Commission up to the end of 2019 in the development of a legal framework for sustainable financing opportunities. Thomas Kusterer is also a member of the Task Force on Climate-related Financial Disclosures (TCFD) [Glossary, p. 155] for the development of climate-related risk reporting. In October 2018, EnBW published its first Green Financing Framework and issued its first green bond [Glossary, p. 153] with a volume of €500 million [p. 85 f.].

The strategy being followed by EnBW of concentrating investment on renewable energies, expanding the grids and developing new and increasingly digitalised business models works towards the achievement of the targets set at the Climate Change Conference, while the strategy itself is being validated by the international efforts for climate protection.

Coal Commission

The German government agreed to the creation of a commission on "Growth, Structural Change and Employment" in its coalition agreement. The commission was tasked with defining an end date for coal-fired power generation and also with developing measures to help Germany close the gap on achieving the climate protection target for 2020 and achieve the target for 2030. In addition, it was asked to make recommendations for structural change in regions that will be affected by the end of coal production. The commission started work in June 2018 and presented its final report on 26 January 2019. It recommends the termination of coal-fired power generation in Germany by 2038. However, this deadline could be moved forward to 2035 if a review to be carried out in 2032 indicates that an earlier termination date would be possible. German brown and hard coal capacities in the energy industry should also be reduced to 15 GW each by 2022 (total brown coal and hard coal capacities are currently around 42 GW). A further reduction in the total capacities to 17 GW will then required by 2030. The commission has outlined compensation rules for the period up to 2030 for the operators of the power plants to be decommissioned. These rules recommend that brown coal and hard coal power plants are decommissioned on the basis of voluntary agreements up to 2022. This rule will remain valid for brown coal power plants up to 2030. In the period between 2023 and 2030, a degressive decommissioning premium for the hard coal power stations will be offered for tender. Further details about the design of the compensation rules are not currently known.

Activities in Turkey

EnBW has been actively involved in the expansion of electricity generation in Turkey, above all through investment in wind power plants, as part of its joint venture with its Turkish partner Borusan since 2009. We currently operate the fourth largest wind power portfolio in Turkey with an installed output of 436 MW together with Borusan. Other potential wind power projects with a total output of around 600 MW are currently in development. We still believe that the Turkish market is an attractive proposition for the future, although the current political and economic unrest have unsettled many investors. We are carefully monitoring the developments in Turkey together with our partner.

Sales segment

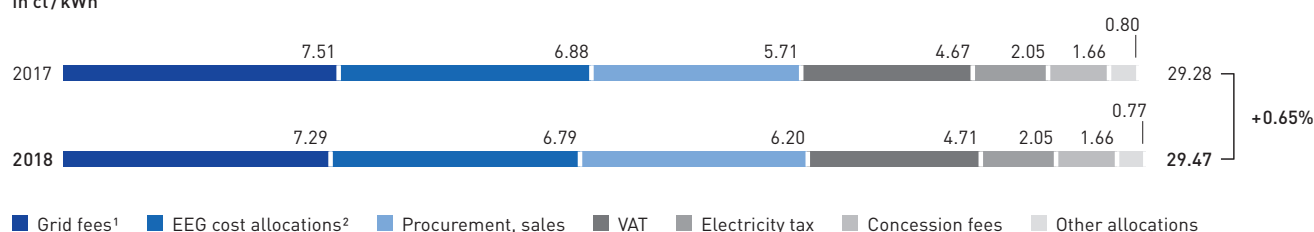
Electricity and gas prices for retail and industrial customers

According to an analysis of electricity prices by the German Association of Energy and Water Industries (BDEW) published in January 2019, the average monthly electricity bill for a household with an annual consumption of 3,500 kWh in 2018 came to €85.94 compared to €85.42 in the previous year. Taxes and levies account for more than half of this amount. EnBW increased the price for the basic supply of electricity by around €32 per year on 1 April 2018. The reason for this development was the higher grid-user charges. In the case of industrial customers receiving a medium-voltage supply, the average electricity price including electricity taxes increased according to calculations made by BDEW by 5.1%, from 17.09 ct/kWh in the previous year to 17.96 ct/kWh in 2018.

According to calculations by the German Federal Statistical Office in 2018, natural gas prices for private households had fallen by 1.4% compared to the previous year; the price of natural gas for industrial customers increased by 14.9%.

Average electricity price for a 3-person household (annual consumption of 3,500 kWh)

in ct/kWh



1 Including metering and metering station operation.

2 German Compensation Mechanism Ordinance (AusglMechV) has been applied since 2010.

Source: BDEW | As of January 2019

Structural changes

Greenhouse gas emissions [Glossary, p. 153] in the transport sector need to be reduced by 42% by 2030 compared to the figure in 1990, for climate protection reasons. The gradual **decarbonisation of the transport sector** will be necessary in order to achieve this target. Carbon-neutral fuels such as hydrogen or synthetic fuels (e-fuels) can make a contribution, while above all the transition to battery-powered electric vehicles will make the achievement of this target possible. The number of newly registered electric vehicles increased by 24% in 2018 and accounted for 1.9% of all new registrations. In 2018, the EU agreed to set stricter emission targets for the fleets of passenger cars and light commercial vehicles. The CO₂ emission limit for fleets, which is valid from 1 January 2021, is 95 gCO₂/km, which will decrease by 37.5% in two stages up to 2030 to 59 g CO₂/km (in 2030). In order to comply with these limits, it will be necessary to increase the proportion of electric vehicles significantly in the coming years. Government subsidies, such as the tax exemptions for electric company cars that are valid from January 2019, create an incentive to purchase these vehicles. In parallel, the charging infrastructure [Glossary, p. 153] is being expanded further. Alongside charging at home, the ability to charge at work and in car parks will become increasingly important. Large department stores and hardware stores are equipping their car parks with quick-charging stations. A network of quick-charging stations with ever increasing charging outputs is being installed along the motorways. 150 kW charging stations reached market viability in 2018. In future, they will be supplemented with other 350 kW charging stations. There were 13,500 public and semi-public charging points at 6,700 charging stations across Germany in the middle of 2018, which represented a 25% increase compared to the previous year. EnBW is engaged in the expansion of the charging infrastructure for household customers and also for commercial and local authority partners. As a result of sale campaigns, it was possible to supply over 500 electric cars to employees and customers in 2018.

The German government aims to achieve a climate-neutral building stock by 2050. Achieving high levels of **energy efficiency in buildings** is a key factor in this area. The Building Energy Act (GEG), which is due to be passed in the summer of 2019, will combine the various legal requirements for the energy-related properties of buildings in one law. However, these stricter energy-related requirements have already been anticipated in the construction of new buildings in many cases. Due to the lower heating demands in these buildings, heat pumps can be used as an energy-efficient form of heating. The proportion of new buildings using heat pumps has been increasing for a number of years and stood at 27% in 2017. It is also possible to improve the energy efficiency of existing buildings by replacing the heating system. Around 3% of heating systems are currently replaced per year. Due to the age structure of heating systems, this rate is set to increase in the coming years. On average, 17% of all the heating systems installed in residential buildings are 30 years old or older. Two thirds of the heating systems are considered to be inefficient. The replacement of a heating system is often also accompanied by a switch in energy source to natural gas, district heating or renewable energy sources. EnBW has identified huge oppor-

tunities for growth in the dynamic heating market and offers its customers a broad range of products for energy-efficient and low-carbon heating solutions for new and existing buildings – also in the form of contracting solutions.

The rate of expansion in energy generation from renewable sources needs to increase in the coming years in order to achieve the 65% target for the share of gross energy consumption accounted for by renewable energies by 2030. Alongside the increase in expansion of wind energy, it will also be necessary to double the current EEG target values for the annual **expansion in photovoltaics**. Following a failure to achieve the expansion target in the past few years, the target value of 2.5 GW was achieved again for the first time in 2018. More than two thirds of the expansion in photovoltaics in 2018 came from rooftop systems, with up to 750 kWp in the commercial sector, the housing industry and private buildings. In order to increase the consumption of own electricity in private buildings, 50% of newly installed photovoltaic power plants are equipped with a battery storage system. EnBW is committed to increasing own consumption of solar energy and offers customers innovative photovoltaic storage solutions.

The market for **home storage systems** is growing dynamically – around 100,000 decentralised storage systems were installed in households in 2018. We also expect high growth rates in the future and anticipate that a higher proportion of the photovoltaic power plants installed in the household sector will be combined with a home storage system. EnBW is represented on the market for home storage systems by its subsidiary SENEC.

Decarbonisation, digitalisation and an increase in energy efficiency are all necessary for the success of the Energiewende. The new energy world will crossover and connect more and more sectors in the future. Climate protection will become a key task for cities and communities – including the sustainable planning of urban districts. The electricity, heating, cooling, mobility and communication needs of customers must be considered in a holistic manner and the necessary infrastructures coordinated and harmonised with one another. EnBW supports its customers in these complex tasks through **cross-sector planning services and the implementation of customer-oriented urban district solutions**.

Grids segment

The **regulatory framework conditions that were defined for the electricity and gas grids** in the third regulatory period had a significant influence in 2018. In particular, cost assessments are very relevant for our grid operators because the results have a significant effect on their earnings situation.

The **rates for return on equity for electricity and gas grids** defined by the Federal Network Agency for the third regulatory period were repealed by the Higher Regional Court in Düsseldorf on 22 March 2018, because the interest rates should be increased. The Federal Network Agency filed an appeal against the judgement with the German Federal Court of Justice on 25 April 2018. The court has not yet handed down its judgement.

According to the Incentive Regulation Ordinance, the **general sectoral productivity factor** (Xgen) (Glossary, p. 154) has to be recalculated before the start of each regulatory period by the Federal Network Agency from the third regulatory period onwards. For the duration of the third regulatory period for gas (2018 to 2023), the Federal Network Agency has defined an Xgen of 0.49% for the gas grid operators. Hundreds of gas grid operators appealed against this decision to the Higher Regional Court in Düsseldorf. The general productivity factor for operators of electricity grids for the next regulatory period for electricity (2019 to 2024) was set at 0.9% by Ruling Chamber 4 of the Federal Network Agency on 28 November 2018. It is notable that the Xgen for electricity grids will be almost twice as much as that for the gas grids. Grid operators, including Netze BW, will also appeal against this decision.

The Bundesrat agreed an ordinance for the gradual **introduction of uniform transmission grid fees** across Germany on 8 June 2018. The harmonisation of the transmission grid fees for the four German electricity transmission system operators (TSO) began on 1 January 2019. According to the new regulations in the transmission grid fee ordinance, the fees will be harmonised in the period up to 2023 in five stages, each covering 20%. The transmission grid fees for our subsidiary TransnetBW will rise as a result.

On 12 December 2018, the German Federal Cabinet agreed the **draft act to accelerate the power grid expansion** for the electricity transmission grid. The act revises the so-called Grid Expansion Acceleration Act (NABEG). An important objective is to simplify and speed up the approval process for the new construction, improvement and optimisation of high and extra-high-voltage lines. The act is an important component for the quick expansion of the grids that is required for the success of the Energiewende. It is due to come into force in the first half of 2019. EnBW hopes that these measures will create improved framework conditions that will allow the transmission system operators to implement the required grid expansion measures on time.

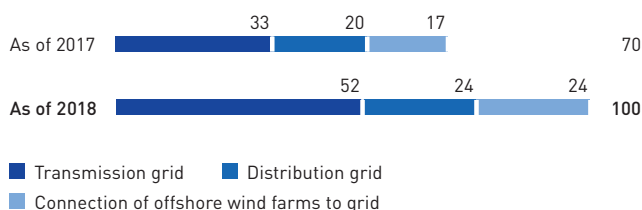
The TSO submitted their first draft of the next national **Network Development Plan Electricity** (NDP Electricity) (Glossary, p. 154) for 2030 for consultation on 4 February 2019. It is based on the framework scenario defined by the Federal Network Agency on 15 June 2018. In particular, it takes into account the German government's aim to increase the proportion of gross electricity consumption covered by renewable energies to 65% by 2030. According to assessments made by the TSO, around 1,600 km of additional newly constructed grids will be required by 2030 due to the raised target. Following the consultation phase, the TSO must submit a revised NDP (second draft) to the Federal Network Agency for approval.

Alongside the integration of renewable energies in the **expansion and restructuring of the power grids**, greater focus is also being placed on sector coupling (Glossary, p. 154). For example, the electricity grid also needs to be equipped for the expected escalation in the number of electric vehicles. Our subsidiary Netze BW has started the pilot project "E-Mobility Avenue" in Ostfildern to test the charging behaviour of users and the effects on the electricity grid. Netze BW was the first

metering point operator to install a BSI certified smart metering system (Glossary, p. 154) for a private household in December 2018. This marked another important milestone for the Energiewende.

There is also an ongoing need to **expand the electricity grids**, especially the high and extra-high-voltage lines, to ensure that generation and consumption is balanced across regions and nationally. However, there is also a need for significant investment at lower voltage levels in the electricity distribution grid in future, due primarily to advancing sector coupling (Glossary, p. 154) as a result of electromobility and electrical heating applications. In the regulated grid business, an increasing level of tension is expected overall due to, for example, the reduction in the equity yield rate. Investment in the expansion of the grids may reduce the earnings pressure on the grid operators but appropriate returns are necessary in order to continue pushing forward the expansion of the grids and to guarantee the security of supply in Germany. Overall, we anticipate that the grid business of the EnBW grid subsidiaries will be faced with more economically challenging framework conditions in the future.

Predicted investment in the expansion of the German electricity grid up to 2030 in € billion



Source: Draft NDP Electricity 2030, version 2019, NDP Electricity 2030, version 2017, BMWi 2014 Distribution Grids Study, own estimates

Aside from the impending expansion of the grids, other measures were also taken by the transmission system operators in 2018 to **guarantee the stability of the grid** in the long term. Alongside maintaining 6,600 MW of decommissioned capacity at power plants still classified as system-relevant, the German transmission system operators, including TransnetBW, issued an invitation to tender for the construction of 1,200 MW of new power plant capacity. EnBW participated in the tender process with a new facility at the site in Marbach.

On 29 March 2018, the gas transmission system operators submitted a revised draft of the **Network Development Plan Gas** (NDP Gas) (Glossary, p. 154) for the period from 2018 to 2028. For the proposed measures, investment of around €7 billion will be required by 2028 in order to safeguard the transmission requirements for Germany and Central Europe. The Federal Network Agency approved the NDP Gas on 20 December 2018 with requests for changes and ancillary provisions. Due to damage to one of the two TENP (Trans Europa Naturgas Pipeline) natural gas lines, the transmission system operators also proposed three additional grid expansion measures (54 km of new gas lines, €171 million investment volume) in the middle of 2018 to supplement the NDP. In particular, these measures are required to safeguard the supply to Baden-Württemberg

because the transport capacity of the TENP line up to 2020 is only expected to be available to a limited extent. In order to satisfy the increasing demand for capacity in Baden-Württemberg, our transmission system operator terranets bw is expanding its own infrastructure accordingly. This will include the construction of the so-called “Neckar-Enz Valley line” and the expansion of the Scharenstetten compressor station as envisaged in the NDP.

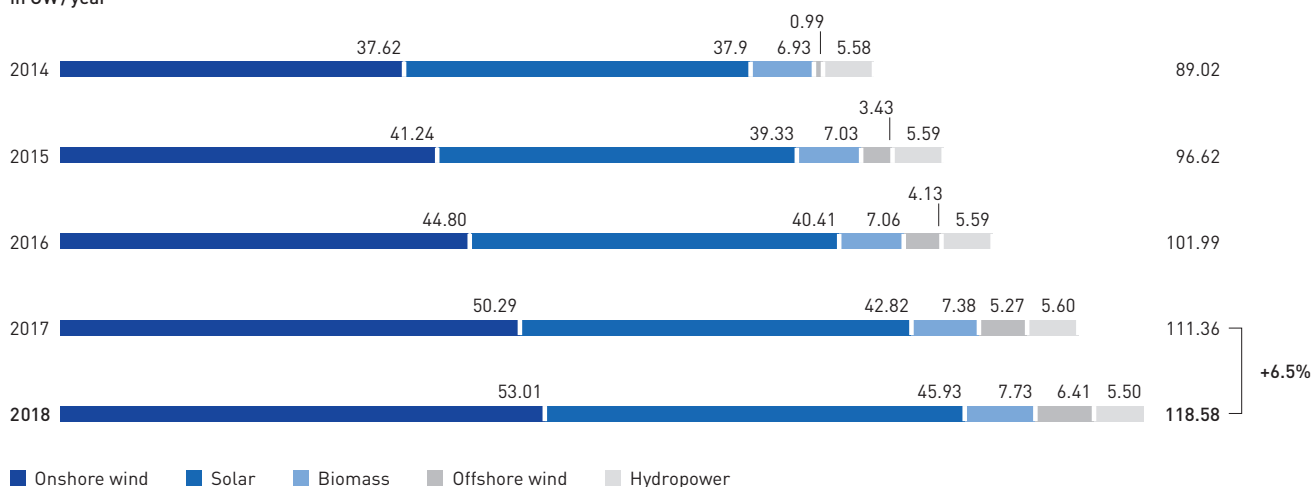
The **reform of the Gas Grid Access Directive** (GasNZV) from 7 July 2017 stipulates that the two German market areas NetConnect Germany (NCG) [Glossary, p. 154] and GASPOOL [Glossary, p. 153] must be merged by 1 April 2022 at the latest. The transmission system operators and the Federal Network Agency have already agreed on the date of 1 October 2021 for the launch of the joint German gas market area. This date is also the start of the gas business year and was considered the most suitable choice for all market participants. EnBW believes that the merging of the two German market areas is a necessary step in the further development of the German gas market.

Renewable Energies segment

The costs for using renewable energies reduced significantly around the world in 2018 and the very dynamic growth of this market continued. Numerous countries are currently developing funding mechanisms and targets, which should help to sustain this expansion. In Europe, the first major projects for the generation of electricity from renewable energies without the need for state funding were realised in 2018.

Electricity generation from renewable energies rose again significantly in Germany in 2018. According to the Fraunhofer ISE (www.energy-charts.de), the proportion of total German electricity generation accounted for by sustainable energy generation increased to just over 40% (2017: around 38%). The installed capacity of renewable energies increased by around 7.3 GW in Germany in 2018 (of which photovoltaics around +3.6 GW, onshore wind +2.7 GW and offshore wind around +1 GW). The special auctions for renewable energies (4 GW each for photovoltaics and onshore wind energy) announced in the coalition agreement of the German government – which are welcomed by EnBW – are expected to be held between 2019 and 2021. However, the adjustment to the expansion target for offshore wind energy for 2030 that was also announced in the coalition agreement has not yet been implemented.

Installed net output for electricity generation from renewable energies in Germany
in GW/year



Source: AGEE, BMWi, Federal Network Agency | As of 31/01/2019

There was a clear drop in the number of projects eligible to participate in the German auctions for **onshore wind energy** in 2018. The reason for this is that the privileges enjoyed by community energy cooperatives [Glossary, p. 152] and the increasing number of obstacles that need to be overcome to secure regional approval have led to significant delays in many projects. The resulting shortage of bids was also reflected in the average prices for those bids accepted in the auctions, which rose significantly compared to the previous year (from around 4.6 ct/kWh in 2017 to more than 5.7 ct/kWh in 2018). Plans to enshrine regional control over the expansion of onshore wind energy in law have not yet been realised. EnBW was also impacted in 2018 by the uncertainty in the investment

environment for onshore wind energy in Germany. Therefore, we advocate regional control over the expansion of onshore wind energy to exploit opportunities for the expansion of renewable energies close to where the energy is consumed, especially in the south of Germany.

In the cross-technology auctions held in 2018, only bids from **photovoltaic projects** were accepted. This outcome reflects the global trend, whereby photovoltaics have become the cheapest technology in the area of renewable energies. This trend can also be seen in the regular auctions for open-field solar projects in Germany. The average price of the bids accepted for large solar projects thus fell from around 5.7 ct/kWh in 2017 to

around 4.5 ct/kWh in 2018. EnBW is aiming to become the pioneer in Germany for open-field photovoltaic power plants without state funding (p. 50).

Generation and Trading segment

Electricity wholesale market

Prices on the wholesale market for electricity rose significantly during the course of 2018. The average spot market price (Glossary, p. 154) of €44.47/MWh was around €10/MWh above the level in the previous year. This development was due, on the one hand, to rising prices for coal, gas and CO₂ allowances (Glossary, p. 152), while on the other hand, low water levels, especially in the Rhine river in the second half of the year, caused transport restrictions and a sharp increase in logistics costs and the lower availability of power plants. At the same time, feed-ins from wind power plants were significantly below the level in a normal year.

The front year base load price (Glossary, p. 152) on the forward market (Glossary, p. 153) of around €44/MWh was also considerably higher than the level in the previous year. There was a continuous increase in the price between March and the middle of September 2018, which was followed by lateral movement with a high level of volatility. In the future, the forward market prices in Germany up to 2022 show a downward trend. This development reflects – alongside falling prices for imported coal – the expectation of market participants that the further expansion of renewable energies will result in structural changes to conventional generation in the future. Overall, prices for electricity will remain highly dependent on the development of prices for fuel and CO₂ allowances. In the medium term, the price level will be increasingly influenced by changes in energy and environmental policies at home and abroad.

Development of prices for electricity (EPEX), base load product

in €/MWh	Average 2018	Average 2017
Spot	44.47	34.19
Rolling front year price	43.84	32.38

Gas market

Long-term gas import contracts form a primary basis of Germany's gas supply. The wholesale markets, such as the Dutch TTF and the trading point of the NetConnect Germany (NCG) (Glossary, p. 154) market area, are other important sources of natural gas. Prices track the oil price trends with a time lag. As a result of the increased supply of Liquefied Natural Gas (LNG) from the USA and Australia, the dependency of the gas price on the price of oil has, however, fallen in Europe. In addition, the

price of gas was influenced above all by the temperatures during the winter half-year. Although the average temperatures in winter 2017/2018 were close to the long-term average, the cold spell in north-west Europe and Germany from the end of February to the beginning of March led to a short-term increase in prices. Due to the cold spell, gas storage levels were very low in the summer months which led to increased demand. In addition, deliveries of LNG to north-west Europe remained below market expectations due to strong demand from the Asian region. In combination with high oil prices in comparison to the previous year, these factors have resulted in increased prices on the spot and forward markets. The border price index for natural gas published monthly by the German Federal Office of Economics and Export Control (BAFA) stood at €20.80/MWh in November 2018, which was 14.7% above the December 2017 figure (€18.13/MWh) and 18.2% above the figure for the same month in the previous year (€17.60/MWh). Due to the good supply situation on the gas markets and the fact that the gas storage facilities in Germany are relatively well stocked, we do not anticipate that prices will rise further in the short term.

Development of prices for natural gas on the TTF (Dutch wholesale market)

in €/MWh	Average 2018	Average 2017 ¹
Spot	22.98	17.33
Rolling front year price	20.70	17.00

¹ The figures for the previous year have been restated.

Oil market

The caps in production introduced by OPEC and some non-OPEC countries including Russia, the continued fall in oil production in Venezuela and the dynamic increase in demand for oil and oil products worldwide initially resulted in a decrease in global stock levels in 2018. The stock levels held by the OECD countries fell below the five-year average again from March for the first time. Another shortage in supply was caused by the reintroduction of US sanctions against Iran and its oil sector as part of the USA's withdrawal from the international nuclear deal with this country. These factors led to a sharp increase in crude oil prices (Brent) to more than US\$85/bbl at the beginning of October. A huge turnaround in this trend from October resulted in oil prices falling since then to below US\$60/bbl. The main causes for this fall in prices were the renewed increase in OECD stock levels due to unexpectedly high global oil production and concerns about the development of the world economy against the background of the trade dispute between the USA and China and the associated growth in demand for oil. Further price developments will be mainly influenced by the extent to which the agreed production cuts are actually implemented by OPEC, the supply situation outside of OPEC and the continuation of the trade dispute between the USA and China.

Development of prices on the oil markets

in US\$/bbl	Average 2018	Average 2017
Crude oil (Brent) front month (daily quotes)	71.69	54.75
Crude oil (Brent), rolling front year price (daily quotes)	68.94	54.87

Coal market

Following a drop in coal prices in the first quarter of 2018 due to a sharp fall in prices on the Chinese coal market, prices recovered by the end of the second quarter and exceeded the level at the beginning of the year. This was primarily due to a very strong increase in demand from China and the simultaneous rise in oil prices. Following a brief period of consolidation in the summer, the same factors led to a further increase in coal prices and caused the API 2 front year price to rise to over US\$100/t for the first time since 2012. Coal prices fell significantly again from the middle of October due to falling oil prices, weaker demand in China and the restrictions announced on coal imports into China. Overflowing coal stocks in the Amsterdam–Rotterdam–Antwerp coal trading hub due to low water levels in the Rhine river also resulted in additional pressure to sell.

The future development of prices for coal will be largely determined by China which is by far the largest consumer. The unpredictable nature and timing of the sometimes major interventions by the Chinese authorities to regulate the domestic coal market have increased the volatility of coal prices. A slowdown in the global economy due to the intensification of international trade disputes and the continued strength of the US dollar could result in a fall in coal prices. In addition, freight prices and the price of oil will also have a significant effect on future prices on the coal market.

Development of prices on the coal markets

in US\$/t	Average 2018	Average 2017
Coal – API #2 rolling front year price	87.03	73.70
Coal – API #2 spot market price	91.91	84.52

CO₂ allowances

Under the European emissions trading system, proof must be provided of the correct number of CO₂ allowances (Glossary, p. 152) for the corresponding CO₂ emissions from power plants. In 2018, supply and demand stood at around the same level. Nevertheless, the price of EUA certificates (Glossary, p. 153) increased sharply in 2018 from around €8/t CO₂ to around €25/t CO₂. This was primarily attributable to speculative demand due to the expectation of further price increases because the reform of the market stability reserve (MSR) – a measure drawn up by the EU Commission to reform the European Union emissions trading system over the long term – will result in a significant reduction in supply over the next four years. Therefore, further price increases are expected in 2019 and in subsequent years.

Development of prices for emission allowances/daily quotes

in €/t CO ₂	Average 2018	Average 2017
EUA – rolling front year price	15.62	5.77
CER – rolling front year price	0.24	0.23

Nuclear power

The coalition agreement of the German government sets out the framework for current nuclear power policy: The main targets are the retention of specialist personnel and expertise, quick progress in the search for a final storage site for highly radioactive waste (by 2031) and the rapid commissioning of the final storage site for low and medium-level radioactive waste (2027 according to the current plans). This should prevent the intermediate storage at the power plant sites becoming, to all intents and purposes, the final storage sites. The 16th amendment to the German Atomic Power Act came into force in July 2018. On the basis of the ruling by the German Federal Constitutional Court from 6 December 2016, operators of nuclear power plants should receive compensation payments for investment in the period between the decision to extend the lives of the nuclear power plants (28 October 2010) and the reversal of this decision (from 16 March 2011), as well as for residual volumes of electricity remaining at power plants that could no longer be distributed. A transparency ordinance from the German Federal Ministry for Economic Affairs and Energy specifies the disclosure obligations of the operators with respect to their provisions for the decommissioning and dismantling of their nuclear power plants and the packaging of radioactive waste. On the basis of the public law contract according to the Act for the Reorganisation of Responsibility in Nuclear Waste Management, EnBW has submitted an application for the approval of the return transport of radioactive waste from the reprocessing centre in France to the intermediate storage site at the Philippsburg nuclear power plant. A precise date for the transport has still not been agreed.

The EnBW Group

Finance and strategy goal dimensions

Results of operations

Electricity sales increase, gas sales up due to full consolidation of VNG

Electricity sales of the EnBW Group (without Grids)

in billions of kWh	Sales		Renewable Energies		Generation and Trading		Total (without Grids)		Change in %
	2018	2017	2018	2017	2018	2017	2018	2017	
Retail and commercial customers (B2C)	14.9	15.0	0.0	0.0	0.0	0.0	14.9	15.0	-0.7
Business and industrial customers (B2B)	21.5	23.7	0.0	0.0	0.4	0.0	21.9	23.7	-7.6
Trade	0.9	1.0	2.4	2.2	96.7	80.1	100.0	83.3	20.0
Total	37.3	39.7	2.4	2.2	97.1	80.1	136.8	122.0	12.1

In the 2018 financial year, electricity sales of the EnBW Group were higher than in the previous year. It was possible to more than compensate for the falling sales in the business and industrial customer sector (B2B) due to the withdrawal from the B2B commodity business under the EnBW and Watt brands through the effects in trade of the full consolidation of VNG-Verbundnetz Gas in the second quarter of 2017 and an increase

in trading activity. However, the effect of the trading activities on the earnings potential of the company is limited. In a persistently challenging competitive environment, electricity sales in business with retail and commercial customers (B2C) stood at the same level as in the previous year. Adjusted for the effects of the changes in the consolidated companies, electricity sales of the EnBW Group increased by 10.7%.

Gas sales of the EnBW Group (without Grids)

in billions of kWh	Sales		Renewable Energies		Generation and Trading		Total (without Grids)		Change in %
	2018	2017	2018	2017	2018	2017	2018	2017	
Retail and commercial customers (B2C)	17.1	14.4	0.0	0.0	0.0	0.0	17.1	14.4	18.8
Business and industrial customers (B2B)	39.2	42.6	0.0	0.0	105.3	51.1	144.5	93.7	54.2
Trade	0.2	0.3	0.1	0.0	166.4	141.7	166.7	142.0	17.4
Total	56.5	57.3	0.1	0.0	271.7	192.8	328.3	250.1	31.3

The gas sales of the EnBW Group increased significantly in 2018 compared to the same period of the previous year. Gas sales in the retail customer business (B2C) rose in comparison to the same period of the previous year, which was primarily due to the full consolidation of VNG in the second quarter of 2017 and a slight increase in the number of customers. Sales to business and industrial customers (B2B) also benefited from the full consolidation of VNG although this was offset by the withdrawal

from the B2B commodity business under the EnBW and Watt brands. The level of trading activity was higher than in the previous year, which was mainly due to the full consolidation of VNG. However, the effect of the trading activities on the earnings potential of the company is limited. Adjusted for the effects of the changes in the consolidated companies, gas sales of the EnBW Group stood at almost the same level as in the previous year (+0.6%).

External revenue lower than previous year mainly due to first-time application of IFRS 15

External revenue of the EnBW Group by segment

in € million ¹	2018	2017	Change in %
Sales	7,061.4	7,354.3	-4.0
Grids	3,215.4	7,471.8	-57.0
Renewable Energies	477.5	507.5	-5.9
Generation and Trading	9,856.2	6,631.1	48.6
Other/Consolidation	7.0	9.3	-24.7
Total	20,617.5	21,974.0	-6.2

¹ After deduction of electricity and energy taxes.

Adjusted for the effects of the changes in the consolidated companies, external revenue fell by 12.9% or €3,048.3 million and was thus significantly lower than in the previous year. This fall is mainly attributable to the first-time application of IFRS 15 and the resulting net disclosure of EEG revenues. Further information can be found in the reporting on IFRS 15 in the notes to the consolidated financial statements (www.enbw.com/report2018-downloads).

Sales: In the 2018 financial year, external revenue in the Sales segment was below the figure in the previous year. Adjusted for the effects of the changes in the consolidated companies, this would have been a fall of 6.1% or €462.2 million. This was mainly due to lower sales volumes as a result of the withdrawal from the B2B commodity business under the EnBW and Watt brands.

Grids: External revenue in the Grids segment fell in 2018 compared to the previous year due to the application of IFRS 15 and the resulting net disclosure of EEG revenues. Adjusted for the effects of the changes in the consolidated companies, this would have been a fall of 57.5% or €4,344.9 million.

Renewable Energies: In the Renewable Energies segment, external revenue in the 2018 financial year was lower than in the previous year. The reason for this development was the fall in revenue caused mainly by lower generation at the offshore wind farms and run-of-river power plants due to the weather conditions. Adjusted for the effects of the changes in the consolidated companies, this would have been a fall of 8.4% or €43.8 million.

Generation and Trading: External revenue in the Generation and Trading segment increased significantly, which was primarily due to the full consolidation of VNG in the second quarter of 2017. In addition, the growth in trading activities contributed to the increase in revenue. Adjusted for the effects of the changes in the consolidated companies, this was an increase in sales of 22.4% or €1,805.0 million.

Material developments in the income statement

Revenue and the cost of materials were 6.2% (revenue) and 8.4% (cost of materials) lower than the levels in the previous year, which was mainly attributable to the application of IFRS 15 and the resulting net disclosure of revenues and the cost of materials. The net disclosures had no effect on the EBITDA. The balance from other operating income and other operating expenses fell from €1,587.2 million in the previous year to €-77.8 million in the reporting year. This decrease was influenced primarily by the reimbursement of the nuclear fuel rod tax (Glossary, p. 154) that was declared to be unconstitutional in June 2017, as well as the sale of 49.89% of the shares in each of EnBW Hohe See GmbH & Co. KG and EnBW Albatros GmbH & Co. KG and the revaluation of the remaining shares in the same period of the previous year. In contrast, the sale of VNG Norge AS and its subsidiary VNG Danmark ApS had a positive effect on earnings in the reporting year. The financial result fell significantly in 2018 in comparison to the previous year by €575.0 million to €-380.4 million (previous year: €194.6 million). This was primarily due to the reimbursement of interest relating to the legal proceedings for the nuclear fuel rod tax, as well as to a higher result from the sale of securities in the previous year. These securities were sold in the previous year in preparation for the payment to the “fund for the financing of the disposal of nuclear waste” (disposal fund). In addition, higher expenses from the market valuation of securities and the drop in the discount rate for nuclear provisions contributed to the fall in earnings. Overall, earnings before tax (EBT) stood at €596.3 million in the 2018 financial year, after €2,857.9 million in the previous year. The complete consolidated financial statements can be found at www.enbw.com/report2018-downloads.

Earnings

The Group net profit/loss attributable to the shareholders of EnBW AG fell from €2,054.1 million in 2017 by €1,719.9 million to €334.2 million in the reporting period. Earnings per share amounted to €1.23 in the 2018 financial year, compared to €7.58 in the previous year.

Adjusted earnings and non-operating result

The sum of the adjusted earnings figures and non-operating figures gives the figures on the income sheet. The non-operating result includes effects that either cannot be predicted or cannot be directly influenced by EnBW and as such are not relevant to the ongoing management of the company. The effects are presented and explained in the section "Non-operating EBITDA".

The business activities relevant to the ongoing management of the company are of particular importance for internal management and for the external communication of the current and future earnings potential of EnBW. We use the adjusted EBITDA – earnings before the investment and financial results, income taxes and amortisation, adjusted for non-operating effects – as the key reporting indicator for disclosing this information.

Adjusted EBITDA and the share of adjusted EBITDA accounted for by the segments

Adjusted EBITDA of the EnBW Group by segment

in € million	2018	2017	Change in %	Forecast 2018
Sales	270.6	330.0	-18.0	-5% to -15%
Grids	1,176.9	1,045.9	12.5	+5% to +15%
Renewable Energies ¹	297.7	331.7	-10.3	-10% to +5%
Generation and Trading	428.6	377.1	13.7	0% to -10%
Other/Consolidation	-16.3	28.3	-	-
Total	2,157.5	2,113.0	2.1	0% to +5%

1 The forecast for the Renewable Energies segment was adjusted during the year.

Share of adjusted EBITDA for the EnBW Group accounted for by the segments

in %	2018	2017	Forecast 2018
Sales	12.5	15.6	10% to 15%
Grids	54.5	49.5	45% to 60%
Renewable Energies ¹	13.8	15.7	10% to 15%
Generation and Trading	19.9	17.8	15% to 20%
Other/Consolidation	-0.7	1.4	-
Total	100.0	100.0	

1 The forecast for the Renewable Energies segment was adjusted during the year.

The adjusted EBITDA for the EnBW Group increased slightly in the 2018 financial year by 2.1% compared to the previous year. The growth in earnings was thus within the forecasted range for the 2018 financial year of between 0% and +5%. Adjusted for the effects of the changes in the consolidated companies, the adjusted EBITDA of the EnBW Group stood at the same level as in the previous year (-0.4%).

Sales: The adjusted EBITDA in the Sales segment decreased in the 2018 financial year by 18.0% in comparison to the previous year. The result was thus below our forecast of -5% to -15%. Adjusted for the effects of the changes in the consolidated companies, the decrease was 21.6%. The elimination of positive out-of-period effects such as the reversal of provisions, which benefited the result in the previous year, had a more significant effect on the adjusted EBITDA than expected. The share of the adjusted EBITDA for the Group accounted for by this segment was in line with our forecast (10% to 15%).

Grids: The adjusted EBITDA for the Grids segment grew in the 2018 financial year within the range of our forecast (+5% to +15%) by 12.5% compared to the previous year. Adjusted for the effects of the changes in the consolidated companies, the increase was 7.7%. The earnings performance in this segment was thus substantially impacted by the full consolidation of VNG in the second quarter of 2017. This development was also due to higher earnings from the use of the electricity grids. The share of the adjusted EBITDA for the Group accounted for by this segment increased in line with our forecast (45% to 60%) compared to the previous year.

Renewable Energies: The adjusted EBITDA in the Renewable Energies segment for the 2018 financial year was 10.3% below the value achieved in the same period of the previous year. The result was thus below our original forecast (+10% to +20%) but at the lower end of our adjusted forecast (-10% to +5%). Adjusted for the effects of the changes in the consolidated companies, the decrease was 11.3%. Poor wind conditions and low water levels had a heavy impact in 2018. The wind yields at our offshore wind farms were thus below the levels in the previous year. The earnings contribution from the run-of-river power plants was also below the level in the previous year. This development could not be offset by the increase in earnings from the onshore wind farms that have been in operation since the middle of 2017. The share of the adjusted EBITDA for the Group accounted for by this segment was in line with our adjusted forecast (10% to 15%) but below our original forecast (15% to 20%).

Generation and Trading: In the Generation and Trading segment, the adjusted EBITDA rose in the 2018 financial year by 13.7% compared to the previous year and was thus above our forecast of 0% to -10%. Adjusted for the effects of the changes in

the consolidated companies, the increase was 16.4%. The elimination of the negative impacts in 2017 of the temporary shutdown of Block 2 of the Philippsburg nuclear power plant (KKP 2) due to damaged ventilation system brackets had a positive effect on earnings and compensated for the extension to the inspection of Block 2 of the Neckarwestheim nuclear power plant (GKN II) in 2018 and the negative impact on

earnings that the weather conditions had on electricity generation. A positive development in comparison to the forecast was the unexpectedly high out-of-period earnings, which were due to the clarification of open issues relating to electricity procurement agreements. The share of the adjusted EBITDA for the Group accounted for by this segment increased slightly in line with our forecast (15% to 20%) compared to the previous year.

Development of non-operating EBITDA influenced by reimbursement of the nuclear fuel rod tax in previous year

Non-operating EBITDA of the EnBW Group

in € million	2018	2017	Change in %
Income/expenses relating to nuclear power	-132.1	1,278.2	-
Income from the reversals of other provisions	11.8	25.7	-54.1
Result from disposals	89.0	317.8	-72.0
Reversals of/additions to the provisions for onerous contracts relating to electricity procurement agreements	39.2	59.2	-33.8
Income from reversals of impairment losses	22.1	93.1	-76.3
Restructuring	-49.1	-70.0	29.9
Other non-operating result	-48.8	-64.6	-24.5
Non-operating EBITDA	-67.9	1,639.4	-

The non-operating EBITDA and the non-operating EBIT decreased significantly in 2018 compared to the previous year. This was influenced primarily by the reimbursement of the nuclear fuel rod tax, the sale of 49.89% of the shares in each of EnBW Hohe See GmbH & Co. KG and EnBW Albatros GmbH & Co. KG

and the revaluation of the remaining shares in the same period of the previous year. In addition, there were reversals of impairment losses on power plants in the previous year. In contrast, the sale of VNG Norge AS and its subsidiary VNG Danmark ApS had a positive effect on earnings in the reporting year.

Fall in Group net profit also influenced by reimbursement of the nuclear fuel rod tax in previous year

Group net profit of the EnBW Group

in € million	2018			2017		
	Total	Non-operating	Adjusted	Total	Non-operating	Adjusted
EBITDA	2,089.6	-67.9	2,157.5	3,752.4	1,639.4	2,113.0
Amortisation and depreciation	-1,213.8	-13.8	-1,200.0	-1,248.4	-134.2	-1,114.2
EBIT	875.8	-81.7	957.5	2,504.0	1,505.2	998.8
Investment result	100.9	-50.6	151.5	159.3	4.1	155.2
Financial result	-380.4	-18.6	-361.8	194.6	244.6	-50.0
EBT	596.3	-150.9	747.2	2,857.9	1,753.9	1,104.0
Income tax	-128.7	51.9	-180.6	-681.6	-509.5	-172.1
Group net profit/loss	467.6	-99.0	566.6	2,176.3	1,244.4	931.9
of which profit/loss shares attributable to non-controlling interests	(133.4)	(5.1)	(128.3)	(122.2)	(-16.4)	(138.6)
of which profit/loss shares attributable to the shareholders of EnBW AG	(334.2)	(-104.1)	(438.3)	(2,054.1)	(1,260.8)	(793.3)

The fall in the investment result was mainly attributable to an impairment of our Turkish investment in the reporting period. The significant decrease in the financial result in comparison to the previous year was primarily due to the reimbursement of interest relating to the legal proceedings for the nuclear fuel rod tax (Glossary, p. 154), as well as to a higher result from the sale of securities in the previous year. These securities were sold in the

previous year in preparation for the payment to the "fund for the financing of the disposal of nuclear waste" (disposal fund). The EBT stood at €596.3 million and was thus below our expectations of between €800 million and €900 million. The main reasons for this deviation from the forecast were valuation effects from derivatives and the development of the discount rate for nuclear provisions.

Financial position

Financial management of EnBW

Basis and objectives

Financial management is responsible for securing the existing financial assets of the EnBW Group and their development, for the optimisation of financing, as well as for guaranteeing a sufficient level of liquidity reserves. This ensures that the Group is able to meet its payment obligations at all times without restriction. The treasury guidelines (Glossary, p. 155) of the EnBW Group define the financial transactions permitted by the Board of Management of EnBW and the specified scope within which they may be carried out. The guidelines are applicable to all companies that are either consolidated in full or with which EnBW AG has a profit and loss transfer agreement. The guidelines also act as basic principles for all other companies. The centralised financial management system serves to minimise risks, provide transparency and optimise costs.

In the operating business, derivatives (Glossary, p. 153) are generally deployed for hedging purposes only: for example, for forward contracts for electricity and primary energy source trading. This also applies for foreign exchange and interest rate derivatives. Propriety trading is only permitted within narrow, clearly defined limits.

Another important aspect of financial management is to manage financial assets (asset management) in order to cover the corresponding pension and nuclear obligations.

Treasury

In general, the treasury (Glossary, p. 155) controls all processes in all companies that are consolidated in full, or with which EnBW AG has a profit and loss transfer agreement. Liquidity management is based on a system-aided rolling liquidity planning for the scope of validity defined above. The treasury is also responsible for the central management of credit lines and bank guarantees, the issuing of guarantees and letters of comfort, as well as interest rate risk and currency management.

Interest rate risk and currency management

Interest rate risk and currency management involves the management and monitoring of interest-bearing and interest-sensitive assets and liabilities. The consolidated companies regularly report on the existing risk position via the system-aided rolling liquidity planning. An interest rate risk strategy is devised based on an analysis conducted every quarter on an aggregated basis. The purpose is to limit the impact of fluctuations in interest rates and interest rate risks on the results of operations and net assets.

The interest rates on the financial liabilities of the EnBW Group are predominantly fixed. We use interest rate derivatives to keep the relationship between fixed and variable interest rates within predefined limits in order to optimise the interest earnings of EnBW. The potential risk is determined on the basis of current interest rates and possible changes in these interest rates.

Generally, currency positions resulting from operations are closed by appropriate forward exchange contracts. Overall, currency fluctuations from operating activities do not have any major effect on the operating result of EnBW. Foreign exchange risks are monitored on a case-by-case basis within the framework of the currency management system. Details on the risk management system are presented in note 24 of the notes to the consolidated financial statements at www.enbw.com/report2018-downloads.

Asset management

Our aim is to cover the Group's pension and nuclear provisions within an economically feasible period of time by means of appropriate financial assets. EnBW uses an asset liability management model (ALM model) (Glossary, p. 152) based on cash flows to determine the effects on the balance sheet, income statement and cash flow statement over the next 30 years. Alongside the anticipated return on financial assets, the actuarial valuations of pension provisions and sector-specific appraisals by external experts on costs for nuclear decommissioning and disposal are taken into account. The aim of this model is to limit the impact the utilisation of the pension and nuclear obligations may have on the operating business. Accordingly, funds are also taken from the financial assets for this purpose. This model also allows simulations of various alternative scenarios. As of 31 December 2018, the dedicated financial assets (Glossary, p. 152) for pension and nuclear provisions totalled €6,279.8 million (previous year adjusted: €6,273.9 million). Alongside the dedicated financial assets, there are plan assets to cover certain pension obligations with a market value of €987.8 million as of 31 December 2018 (previous year adjusted: €1,047.3 million).

We strive to reach the defined investment targets with minimum risk. We also further optimised the risk/return profile of the financial assets in 2018. The main part of the dedicated financial assets is distributed as investments across nine asset classes. The financial assets are bundled in two master funds with the following investment targets:

- > Risk-optimised investments, with a performance in line with market trends
- > Consideration of the effects on the balance sheet and income statement
- > Broad diversification of the asset classes
- > Reduction of costs and simplification of administrative processes

Financing facilities

In addition to the Group's internal financing capabilities from the adjusted retained cash flow of €1,199.1 million in 2018 (previous year: €1,529.5 million) and its own funds, the EnBW Group had the following instruments at its disposal to cover its overall financing needs (as of 31 December 2018):

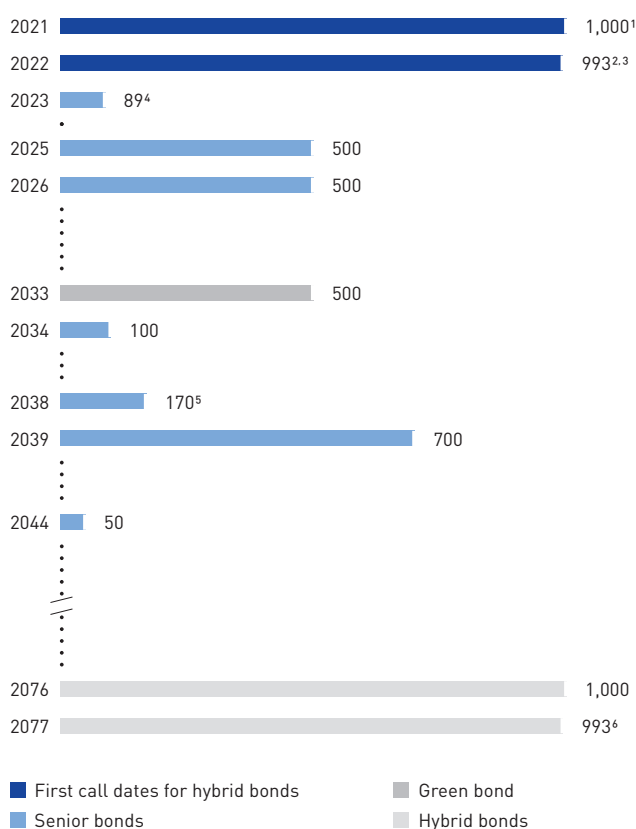
- > Debt Issuance Programme (DIP, Glossary, p. 152), via which bonds are issued: €2.6 billion of €7.0 billion has been drawn
- > Hybrid bonds: €2.0 billion
- > Commercial paper (CP) programme (Glossary, p. 152): €0.3 billion of €2.0 billion has been drawn
- > Syndicated credit line: €1.5 billion undrawn with a term until 2021
- > Bilateral free credit lines: €1.1 billion
- > Project financing and low-interest loans from the European Investment Bank (EIB)

Established issuer on the debt capital market

EnBW has sufficient and flexible access to the capital market at all times. The EnBW bonds continue to have a well-balanced maturity profile. As part of its financing strategy, EnBW constantly assesses capital market trends with regard to the current interest rate environment and to any potentially favourable refinancing costs.

The CHF 100 million bond that was due for repayment was repaid on 12 July 2018. A senior bond with a volume of €750 million that was due for repayment on 20 November was also repaid. No refinancing was required in either case.

Maturity profile of EnBW bonds in € million



1 First call date: hybrid maturing in 2076.

2 First call date: hybrid maturing in 2077.

3 Includes US\$300 million, coupon before swap 5.125%.

4 CHF 100 million, converted in € as of 31/12/2018.

5 JPY 20 billion [swap in €], coupon before swap 3.880%.

6 Includes US\$300 million, converted in € at rate of 05/10/2016.

Documentation of short-term and long-term borrowings on the capital market under the established DIP and CP programmes of EnBW, as well as all other credit documentation with banks (e.g. syndicated lines of credit) includes internationally standardised clauses. The issuing of a negative pledge, as well as a pari passu clause (Glossary, p. 154), to all creditors forms a key element of the financing policy of EnBW. The use of undrawn credit lines is not subject to restrictions.

Details on financial liabilities are presented in note 21 and explanations on other financial commitments are presented in note 25 of the notes to the consolidated financial statements at www.enbw.com/report2018-downloads.

Green bond issued by EnBW *

EnBW published its Green Financing Framework on 17 October 2018 and issued its first green bond (Glossary, p. 153) with a volume of €500 million on 31 October 2018. The bond has a coupon of 1.875% and a term of 15 years. In contrast to conventional corporate bonds, the proceeds from a green bond must be used exclusively to finance climate-friendly projects. 93% of the proceeds from the first green bond issued by EnBW will be allocated to wind power projects, while 5% will be used for photovoltaic projects and 2% for electromobility projects. This form of financing is thus in line with the corporate strategy of repositioning the business portfolio with a focus on renewable energies and smart infrastructure solutions.

Use of the funds from the green bond for renewable energies

	Use of funds in € million	Emissions avoided tCO ₂ eq ¹
Offshore wind	227.45	~ ²
Onshore wind	234.42	170,818
Photovoltaics	26.50	14,032
Total for renewable energies	488.37	184,850

1 Source: German Environment Agency: Emission Balance of Renewable Energy Sources in 2017 (as of October 2018)

2 Projects still under construction.

Use of the funds from the green bond for electromobility

	Use of funds in € million	Number of locations	Number of charging processes
Expansion of quick-charging infrastructure	8.05	123 ¹	38,327
Total	496.42		

1 89 locations on Germany's motorways.

* The information on the green bond issued by EnBW is not part of the audited management report.

Allocation of the green bond

	Use of funds in € million	Net proceeds in € million	Allocation of funds in %
Green bond [XS1901055472]	496.42	496.42	100.0

Through sustainable finance, companies support the stability and future viability of financial markets and make an important contribution to financing global transformation processes. The activities of EnBW in the area of sustainable finance underline the fact that the company takes into account the social and ecological impacts of its business activities in the development of business models and specifically examines the medium and long-term opportunities and risks involved. As well as financial performance indicators, the company thus also uses sustainability indicators as a basis for taking capital expenditure and investment decisions.

Further information on the green bond, including its contribution to the non-financial key performance indicators of EnBW and to the selected sustainability goals of the United Nations (United Nations Sustainable Development Goals (SDGs) – SDG 7 (affordable and clean energy), SDG 9 (industry, innovation and infrastructure), SDG 11 (sustainable cities and communities), SDG 13 (climate action), can be found at www.enbw.com/green-bond.

Rating and rating trends

EnBW aims to maintain a solid investment-grade rating (Glossary, p. 154). By limiting the cash-relevant net investment to the adjusted retained cash flow, measured by the internal financing capability, EnBW manages the level of net financial debt. The company thus maintains its high level of financial discipline, irrespective of the interest rate-related volatility of the pension and nuclear provisions (p. 72). EnBW ensures the timely coverage of the pension and nuclear obligations (p. 84) using an asset liability management model (Glossary, p. 152). The impact that the utilisation of the pension and nuclear obligations may have on the operating business is limited to €300 million (plus an inflation supplement) a year using an ongoing contribution from the financial assets. If the provisions are fully covered by the financial assets, no further funds will be taken from operating cash flow as part of the model.

With a solid investment-grade rating (Glossary, p. 154), we want to:

- > ensure unrestricted access to capital markets
- > offer reliable opportunities for financing partners
- > be regarded as a dependable business partner in our trading activities
- > achieve the lowest possible capital costs
- > implement an appropriate number of investment projects and thereby maintain the future viability of the company

Overview of the ratings for EnBW – rating/outlook

	2018	2017	2016	2015	2014
Moody's	A3/stable	Baa1/stable	A3/negative	A3/negative	A3/negative
Standard & Poor's	A-/stable	A-/stable	A-/negative	A-/stable	A-/stable
Fitch	A-/stable	A-/stable	A-/stable	A-/stable	A-/stable

The rating agency Moody's re-evaluated EnBW in June 2018 and upgraded its rating from Baa1 to A3. EnBW has thus now received A-grade ratings from all three rating agencies. The reason given by Moody's for the upgrade was above all the high financial discipline of EnBW, especially with regards to the reduction in net debt that was achieved more quickly than expected and the financing of growth investment using its internal financing capability. The increasing proportion of low-

risk activities in the regulated grid business and the expertise acquired by EnBW in the area of renewable energies over the past few years were also positively evaluated. Moody's anticipates that EnBW will continue to rigorously implement its 2020 strategy. In its regular update on 24 July 2018, Standard & Poor's (S&P) confirmed its EnBW rating of A- with a stable outlook. Fitch also confirmed its EnBW rating of A-/ stable on 28 September 2018.

Assessment by the rating agencies

Moody's (12/06/2018)	Standard & Poor's (24/07/2018)	Fitch (28/09/2018)
Leadership position as a vertically integrated utility within Baden-Württemberg	Solid regional competitive position and increasing foothold in national gas distribution	Continued evolution towards a more regulated and contracted business profile
Around 50% of EBITDA from low risk regulated distribution and transmission activities and growing share of renewables under contracts, as EnBW continues to invest in line with its 2020 strategy	Increased share of operating income from the segments Grids and Renewable Energies, but still significant exposure to volatile and commodity-driven wholesale power prices	High earnings visibility in grids and renewables partly offset by residual nuclear decommissioning risk; payment of €4.8 billion for transferring responsibility for nuclear waste storage has substantially reduced these risk
Difficult operating environment in Germany for conventional generation and increasingly challenging environment in retail markets	Considerable progress made in business repositioning strategy	Average forecast credit metrics are generally stronger than peers, with some exceptions with respect to funds from operations (FFO) fixed charge cover
Certain execution risks relating to a large investment programme	Well managed funding of nuclear waste-related liabilities, without major disruptions to its strategy or changes to the capital structure	If the share of regulated EBITDA exceeds 50% on a sustained basis, Fitch may apply a one-notch uplift to the senior unsecured rating
Balanced financial policies and track record in implementing measures to shore up its financial profile	Prudent financial policy underpinned by utilization of nuclear tax refund for capex and deleveraging	
Strong support due to stable shareholder structure		

Investment analysis

Net cash investment of the EnBW Group

in € million ¹	2018	2017	Change in %
Investments in growth projects ^{2,3}	1,323.9	1,324.2	0.0
Investments in existing projects	446.0	446.1	0.0
Total investments	1,769.9	1,770.3	0.0
Divestitures ⁴	-371.3	-298.5	24.4
Participation models	51.9	61.9	-16.2
Other disposals and subsidies	-163.4	-166.6	-1.9
Total divestitures	-482.8	-403.2	19.7
Net (cash) investment	1,287.1	1,367.1	-5.9

1 Excluding investments held as financial assets.

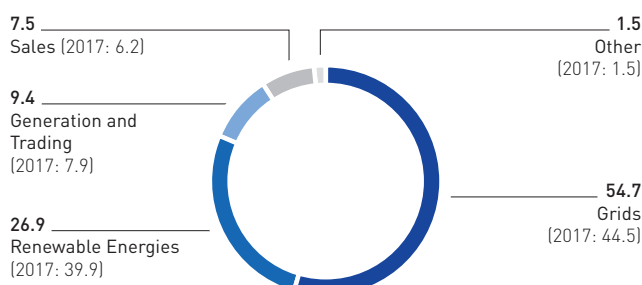
2 Does not include cash and cash equivalents acquired with the acquisition of fully consolidated companies. These amounted to €0.4 million in the reporting period (previous year: €0.0 million).

3 In the same period of the previous year, this included cash and cash equivalents of €51.0 million relinquished with the sale of the shares in EnBW Hohe See GmbH & Co. KG and cash and cash equivalents of €6.8 million relinquished with the sale of the shares in EnBW Albatros GmbH & Co. KG, because they will be used for future investments for the realisation of both offshore wind farms.

4 Does not include cash and cash equivalents relinquished with the sale of fully consolidated companies. These amounted to €61.5 million in the reporting period (previous year: €57.8 million).

Investment by segment

in %



Investment by the EnBW Group in 2018 was at the same level as in the previous year. In particular, capital expenditure on property, plant and equipment in the Grids segment increased, while it decreased in the Renewable Energies segment. Around 74.8% of overall gross investment was attributable to growth projects; the proportion of investments in existing facilities stood at 25.2%.

In the reporting year, €132.4 million was invested in strengthening the **Sales** segment. Investment in this segment was thus slightly above the level in the previous year (€110.6 million).

Investment in the **Grids** segment stood at €967.4 million, compared to €787.5 million in the previous year. It was primarily used for the expansion of the electricity grids. The increase in comparison to the previous year was primarily due to the construction of the EUGAL gas pipeline and investment in the areas of electromobility and smart grids.

Investment in the **Renewable Energies** segment of €476.0 million was lower than the figure in the previous year (previous year: €706.4 million). The reason for this development was the strong expansion of onshore wind power plants in 2017. In 2018, onshore wind farms were acquired, in particular, in Sweden.

Investment in the **Generation and Trading** segment stood at €166.5 million in 2018. In the same period of the previous year, investment in this segment stood at €140.2 million. The main reasons for this increase were investment in the exploration and production business of VNG and the modernisation of the combined heat and power plant in Stuttgart-Gaisburg – including switching the fuel over to gas – to guarantee the supply of district heating for the greater Stuttgart area.

Other investments of €27.6 million were slightly above the level in the previous year (€25.6 million).

Divestitures were higher than the level in the previous year.

Divestitures increased in 2018 compared to the same period of the previous year. This was primarily due to the sale of VNG Norge AS and its subsidiary VNG Danmark ApS. In the previous year, they mainly included the sale of 49.89% of the shares in each of EnBW Hohe See GmbH & Co. KG and EnBW Albatros GmbH & Co. KG.

Liquidity analysis

Retained cash flow of the EnBW Group

in € million	2018	2017	Change in %
EBITDA	2,089.6	3,752.4	-44.3
Changes in provisions	-394.6	-472.3	-16.5
Non-cash-relevant expenses/income	-116.0	-385.9	-69.9
Income tax paid/received	-270.7	81.1	-
Interest and dividends received	284.6	591.7	-51.9
Interest paid for financing activities	-247.0	-425.6	-42.0
Dedicated financial assets contribution	-34.0	-6.4	-
Funds from operations (FFO)	1,311.9	3,135.0	-58.2
Dividends paid	-312.8	-84.7	-
Retained cash flow	999.1	3,050.3	-67.2

Funds from operations (FFO) fell by more than half in comparison to the previous year. This fall was primarily attributable to the reimbursement of the nuclear fuel rod tax in 2017 (Glossary, p. 154). In addition, there were income tax payments in the reporting year compared to income tax refunds in the previous year. Furthermore, interest and dividends received fell.

The divestitures from participation models mainly contain payments due to capital reductions in non-controlling interests of €51.8 million (previous year: €55.0 million).

Other disposals and subsidies were at the same level as in the previous year.

Capital commitments for the acquisition of intangible assets and property, plant and equipment amounted to €1,142.7 million as of 31 December 2018 (previous year: €829.1 million). Commitments for the acquisition of companies totalled €476.1 million (previous year: €454.1 million). The capital commitments will be financed from the adjusted retained cash flow in subsequent years.

Investment decisions will take climate goals into account to a greater extent in the future. In this context, the investment guidelines have been adapted in the 2018 financial year: For significant investment projects, their influence on the environmental and climate protection targets and figures – in the sense of the TCFD recommendations (Glossary, p. 155) – will be illustrated in the future. This additional information will act as the basis for approval by the investment committee of the Board of Management.

The lower FFO and higher dividends paid in 2018 thus led to a decrease in the retained cash flow.

The retained cash flow reflects the internal financing capability of EnBW after all stakeholder needs have been settled. It is available to the company for investment without the need to raise additional debt.

Internal financing capability of the EnBW Group

	2018	2017	Change in %
Adjusted retained cash flow in € million ¹	1,199.1	1,529.5	-21.6
Net (cash) investment in € million	1,287.1	1,367.1	-5.9
Internal financing capability in %	93.2	111.9	-16.7

¹ Adjusted for the effects from the reimbursement of the nuclear fuel rod tax by €200.0 million (previous year: €-1,520.8 million).

We have translated the retained cash flow into the adjusted retained cash flow, which eliminates the reimbursement of the nuclear fuel rod tax. In the 2017 financial year, this led to a reduction in adjusted retained cash flow compared to retained cash flow and will lead to an increase of €685.0 million in the period from 2018 to 2020 (nuclear fuel rod tax adjusted for the debt repayment). The reimbursement of the nuclear fuel rod tax of €1,520.8 million in the 2017 financial year was used by EnBW for the debt repayment in 2018 of €835.8 million and for investments in the amount of €200.0 million. We anticipate that the remaining amount will be distributed on a straight line basis in the period 2019 to 2020.

Due to the decrease in adjusted retained cash flow in the reporting year compared to 2017 and only a slight decrease in net investment compared to the previous year, the internal financing capability fell. As a result of one-time tax payments, the adjusted retained cash flow was below the forecasted level, which meant that the value for internal financing capability was slightly below the target value of ≥ 100% in the reporting year.

The internal financing capability is the key performance indicator for the Group's ability to finance its activities internally.

Free cash flow of the EnBW Group

in € million	2018	2017	Change in %
Funds from operations (FFO)	1,311.9	3,135.0	-58.2
Change in assets and liabilities from operating activities	-480.7	-4,671.4	-89.7
Capital expenditure on intangible assets and property, plant and equipment	-1,369.5	-1,419.2	-3.5
Disposals of intangible assets and property, plant and equipment	77.3	52.8	46.4
Cash received from subsidies for construction costs and investments, and tax refunds from recognised exploration expenditure	86.1	113.8	-24.3
Free cash flow	-374.9	-2,789.0	-86.6

Free cash flow increased significantly compared to the same period of the previous year by €2,414.1 million. The considerable decrease in FFO was more than compensated for by the clear

reduction in the net balance of assets and liabilities from operating activities. In the comparative period, this item included the payment to the disposal fund.

Condensed cash flow statement of the EnBW Group

in € million	2018	2017	Change in %
Cash flow from operating activities	827.6	-1,696.1	-
Cash flow from investing activities	-895.8	2,160.7	-
Cash flow from financing activities	-907.3	-1,541.3	41.1
Net change in cash and cash equivalents	-975.5	-1,076.7	9.4
Change in cash and cash equivalents due to changes in the consolidated companies	6.6	300.3	-97.8
Net foreign exchange difference	5.5	-1.9	-
Risk provisions	0.2	0.0	-
Change in cash and cash equivalents	-963.2	-778.3	23.8

The substantial increase in cash flow from operating activities in comparison to the previous year was mainly due to the two effects from the previous year of the reimbursement of the

nuclear fuel rod tax and the payment to the disposal fund. In addition, there were income tax payments in the reporting year compared to income tax refunds in the previous year.

In 2018, cash flow from investing activities returned an outflow of cash, while there was a significantly higher inflow of cash in the previous year. This inflow of cash in the previous year was due primarily to higher sales of securities to finance the payment made to the disposal fund in July 2017.

The cash outflow from financing activities decreased significantly in comparison to the previous year: A hybrid bond was repaid in 2017; in 2018 the green bond was issued and the commercial paper (CP) programme (Glossary, p. 152) was utilised, while in

contrast there were planned repayments on two bonds and dividends were once again distributed to the shareholders of EnBW AG.

The solvency of the EnBW Group was ensured at all times throughout the 2018 financial year thanks to the company's available liquidity and its internal financing capability, as well as external sources available for financing. The company's future solvency is secured by its solid financial position (p. 84 ff.).

Net assets

Condensed balance sheet of the EnBW Group

in € million	31/12/2018	31/12/2017	Change in %
Assets			
Non-current assets	26,746.0	26,766.6	-0.1
of which intangible assets	(1,748.7)	(1,905.9)	-8.2
of which property, plant and equipment	(15,867.5)	(15,597.4)	1.7
of which entities accounted for using the equity method	(1,600.2)	(1,388.6)	15.2
of which other financial assets	(5,426.5)	(5,985.7)	-9.3
of which deferred taxes	(1,059.3)	(956.4)	10.8
Current assets	12,520.7	12,015.3	4.2
Assets held for sale	342.3	3.0	-
	39,609.0	38,784.9	2.1
Equity and liabilities			
Equity	6,273.3	5,862.9	7.0
Non-current liabilities	22,036.9	21,919.7	0.5
of which provisions	(13,246.0)	(13,124.5)	0.9
of which deferred taxes	(774.8)	(799.4)	-3.1
of which financial liabilities	(6,341.4)	(5,952.0)	6.5
Current liabilities	11,277.6	11,002.3	2.5
of which provisions	(1,549.9)	(1,598.7)	-3.1
of which financial liabilities	(654.8)	(1,306.8)	-49.9
Liabilities directly associated with assets classified as held for sale	21.2	0.0	-
	39,609.0	38,784.9	2.1

As of 31 December 2018, the total assets held by the EnBW Group were 2.1% higher than the level at the end of the previous year. Non-current assets were only slightly below the level in the previous year. The increase in property, plant and equipment is due to capital expenditure, which was offset to some extent by ongoing impairments. The increase in entities accounted for using the equity method was mainly the result of a capital increase. The fall in other financial assets was due to the securities. This was primarily attributable to the reclassification of the 6% shareholding in EWE as assets held for sale and a reclassification due to a change in maturity. Current assets increased by €505.4 million, which was mainly due to an increase in derivatives. In addition, the rise in current assets was also contributed to by the increase in securities because of reclassifications due to changes in maturity and an increase in gas stocks. In contrast, cash and cash equivalents fell, which was

mainly attributable to cash payments for investments. The increase in assets held for sale by €339.3 million was primarily attributable to the 6% of the shares in EWE, which were reclassified due to EnBW's right from 1 July 2019 to sell the shares to EWE Verband with an associated obligation for EWE Verband to purchase them.

The equity held by the EnBW Group increased by €410.4 million as of the reporting date of 31 December 2018. This was due mainly to the increase in revenue reserves as a result of the first-time application of the new IFRS standards. This was compensated for to some extent by the lower earnings compared to the previous year. The first-time application of IFRS 9 also led to a fall in other comprehensive income. The equity ratio increased from 15.1% at the end of 2017 to 15.8% on the reporting date as a result. Non-current liabilities increased by

€117.2 million. The increase in financial liabilities was primarily due to the issuing of the green bond. Other liabilities and subsidies fell due to the first-time application of IFRS 15 in the 2018 financial year. In contrast, the derivatives increased. Current liabilities increased by €275.3 million, driven by the derivatives. The decrease in financial liabilities is due to repayments on two bonds. This was offset to some extent by short-term financing on the capital market under the commercial paper (CP) programme [Glossary, p. 152] in the amount of €250 million as of 31 December 2018.

Net debt

As of 31 December 2018, net debt increased significantly by €1,168.3 million compared to the figure posted at the end of 2017. Net financial debt increased by €820.6 million, which was due to the payments for initial margins, filling the gas stores at the end of the year and the investment expenditure which, excluding the effect from the nuclear fuel rod tax, totalled more

than the income from the retained cash flow. The increase in net debt relating to pension and nuclear obligations was primarily due to a rise in the rate of increase in prices from 1.7% to 2.4% and the fall in the discount rate for the nuclear provisions from 0.72% to 0.59%. Updating the Heubeck tables with respect to assumptions about average life expectancies also had a negative effect on the pension provisions.

The coverage ratio [Glossary, p. 152] describes the dedicated financial assets [Glossary, p. 152] in relation to the net pension and nuclear obligations. As of 31 December 2018, this ratio stood at 51.8%, which was around the same level as in the previous year (adjusted: 53.3%). Within the scope of its ALM model [Glossary, p. 152], EnBW is still in a position to cover its future cash outflows for pension and nuclear provisions without burdening the cash flow from operating activities to an above-average extent.

Net debt of the EnBW Group

in € million ¹	31/12/2018	31/12/2017	Change in %
Cash and cash equivalents available to the operating business	-1,954.0	-2,954.7	-33.9
Current financial assets available to the operating business	-200.6	-277.0	-27.6
Long-term securities available to the operating business	0.0	-4.3	-100.0
Bonds	4,869.4	4,934.3	-1.3
Liabilities to banks	1,482.8	1,705.6	-13.1
Other financial liabilities	644.0	618.9	4.1
Valuation effects from interest-induced hedging transactions	-88.8	-96.4	-7.9
Restatement of 50% of the nominal amount of the hybrid bonds ²	-996.3	-996.3	0.0
Other	-18.1	-12.3	47.2
Net financial debt	3,738.4	2,917.8	28.1
Provisions for pensions and similar obligations ³	6,550.9	6,341.2	3.3
Provisions relating to nuclear power	5,848.2	5,802.7	0.8
Liabilities relating to nuclear power	63.3	0.0	-
Receivables relating to nuclear obligations	-334.4	-369.5	-9.5
Net pension and nuclear obligations	12,128.0	11,774.4	3.0
Long-term securities and loans to cover the pension and nuclear obligations ⁴	-4,864.4	-5,487.6	-11.4
Cash and cash equivalents to cover the pension and nuclear obligations	-295.4	-258.6	14.2
Current financial assets to cover the pension and nuclear obligations	-569.1	-307.2	85.3
Surplus cover from benefit entitlements	-208.8	-179.3	16.5
Long-term securities to cover the pension and nuclear obligations directly associated with assets classified as held for sale	-298.9	0.0	-
Other	-43.2	-41.2	4.9
Dedicated financial assets	-6,279.8	-6,273.9	0.1
Net debt relating to pension and nuclear obligations	5,848.2	5,500.5	6.3
Net debt	9,586.6	8,418.3	13.9

¹ The figures for the previous year have been restated.

² The structural characteristics of our hybrid bonds meet the criteria for half of the bond to be classified as equity, and half as debt, by the rating agencies Moody's and Standard & Poor's.

³ Less the market value of the plan assets of €987.8 million (31/12/2017: €1,047.3 million).

⁴ Includes equity investments held as financial assets.

TOP ROCE and value added

The cost of capital before tax represents the minimum return on average capital employed (calculated on the basis of the respective quarterly figures for the reporting year and the year-end figure for the previous year). Positive value is added when the return on capital employed (ROCE) exceeds the cost of capital. The cost of capital is determined based on the weighted average cost of equity and debt together. The value of equity is based here on a market valuation and thus deviates from the value recognised in the balance sheet. The cost of equity is based on the return of a risk-free investment and a company-specific risk premium. The latter is calculated as the difference between a risk-free investment and the return for the overall market, weighted with a company-specific business field risk. The terms according to which the EnBW Group can raise long-term debt are used to determine the cost of debt.

There are various factors that influence value added. The level of ROCE and value added depend not only on the development of the operating result but above all on the invested capital. Large-scale investments tend to significantly increase the capital employed in the early years, while the effect on income that boosts value, however, only filters through over a lengthier period of time, often long after the investments were initially made. This is especially true of capital expenditure on property, plant and equipment relating to the construction of new power plants, which do not have any positive effect on the operating result of the Group until after they are commissioned. Capital expenditure on power plants, on the other hand, is already taken into account in the capital employed during the construction phase. In a comparison of individual years, the development of ROCE and value added is, to a certain extent, cyclical in nature, depending on the investment volume. This effect is therefore inherent in the system and results in lower ROCE in phases of strong growth or phases of investment.

Value added to the EnBW Group for 2018 by segment

	Sales	Grids	Renewable Energies	Generation and Trading	Other/ Consolidation	Total
Adjusted EBIT including the adjusted investment result ¹ in € million	220.3	768.4	123.7	-24.2	-46.6	1,041.6
Average capital employed in € million	1,037.0	7,019.8	3,667.4	2,139.1	2,190.0	16,053.3
ROCE in %	21.2	10.9	3.4	-1.1	-	6.5
Weighted average cost of capital before tax in %	7.7	5.3	6.1	8.0	-	6.3
Value added in € million	140.0	393.1	-99.0	-194.7	-	32.1

1 Investment result of €59.4 million, adjusted for taxes (investment result/0.706 - investment result; with 0.706 = 1 - tax rate 29.4%). Does not include impairment losses and reversals to impairment losses on investments, the result from the sale of equity investments, the share of the result from entities accounted for using the equity method not relevant to the ongoing management of the company and the result from equity investments held as financial assets.

Value added to the EnBW Group for 2017 by segment¹

	Sales	Grids	Renewable Energies	Generation and Trading	Other/ Consolidation	Total
Adjusted EBIT including the adjusted investment result ² in € million	262.8	686.8	164.9	-27.0	21.2	1,108.7
Average capital employed in € million	836.8	5,919.2	3,276.9	2,242.4	2,844.6	15,119.9
ROCE in %	31.4	11.6	5.0	-1.2	-	7.3
Weighted average cost of capital before tax in %	7.7	5.4	6.1	8.0	-	6.3
Value added in € million	198.3	367.0	-36.0	-206.3	-	151.2

1 The figures for the previous year have been restated.

2 Investment result of €77.6 million, adjusted for taxes (investment result/0.706 - investment result; with 0.706 = 1 - tax rate 29.4%). Does not include impairment losses and reversals to impairment losses on investments, the result from the sale of equity investments, the share of the result from entities accounted for using the equity method not relevant to the ongoing management of the company and the result from equity investments held as financial assets.

The value added generated by the EnBW Group fell in the 2018 financial year compared to the previous year to €32.1 million. The adjusted EBIT including the adjusted investment result fell slightly, while the average capital employed rose. The risk-adjusted weighted average cost of capital remained unchanged compared to the previous year at 6.3%. The ROCE of 6.5% was within the range of our forecast for the 2018 financial year (forecast 2018: 6.3% to 7.0%).

Sales: Value added in the Sales segment decreased in 2018 by €58.3 million. This was mainly because of the increase in average capital employed due to, amongst other things, the full year consolidation of VNG and investment in the solutions and contracting business. In addition, the lower adjusted EBIT including the adjusted investment result contributed to the fall in value added.

Grids: Value added in the Grids segment increased slightly to €393.1 million in comparison to 2017. Both the adjusted EBIT including the adjusted investment result and also the capital employed were above the figures in the previous year. The substantial increase in capital employed was primarily attributable to the full year consolidation of VNG and investment in the transmission and distribution grids.

Renewable energies: Value added in the Renewable Energies segment fell in comparison to the previous year to €99.0 million. The adjusted EBIT including the adjusted investment result decreased to €123.7 million. In contrast, investments in the expansion of onshore and offshore wind power led to an increase in the capital base in the reporting year, as was also the case in 2017.

Generation and Trading: Value added in the Generation and Trading segment was slightly above the level in 2017 at €194.7 million. This was due, on the one hand, to the slight increase in adjusted EBIT including the adjusted investment result, and on the other hand, to the average capital employed in the reporting year remaining at approximately the same level as in the previous year.

Performance indicators relevant to remuneration

The performance indicators relevant to remuneration are derived as follows:

EBT relevant to remuneration

in € million	2018	2017
EBT	596.3	2,857.9
Less outstanding items for derivatives allocated under trading within EBITDA	-4.1	-12.9
Less the measurement of financial assets and outstanding items for derivatives allocated under trading within the financial result	38.8	-34.2
EBT relevant to remuneration	631.0	2,810.8
Less changes to the inflation rate and discount rate for nuclear provisions	133.3	-
EBT relevant to remuneration according to the new regulations	764.3	-

Funds from operations (FFO) relevant to remuneration

in € million	2018	2017
Funds from operations (FFO)	1,311.9	3,135.0
Less income tax paid/received	270.7	-81.1
Funds from operations (FFO) relevant to remuneration	1,582.6	3,053.9

Intangible assets and property, plant and equipment (net) relevant to remuneration

in € million	2018	2017
Intangible assets	1,748.7	1,905.9
Property, plant and equipment	15,867.5	15,597.4
Investment properties	31.6	50.3
Investment cost subsidies	-7.7	-8.5
Construction cost subsidies	-876.8	-1,383.6
Intangible assets and property, plant and equipment (net)	16,763.3	16,161.5
Average intangible assets and property, plant and equipment (net) ¹	16,371.6	15,113.9

¹ Average calculation based on the respective quarterly values for the reporting year and the previous year.

ROA (return on assets) relevant to remuneration

in € million	2018	2017
EBIT	875.8	2,504.0
Less outstanding items for derivatives allocated under trading within EBITDA	-4.1	-12.9
EBIT relevant to remuneration	871.7	2,491.1
Average intangible assets and property, plant and equipment (net)	16,371.6	15,113.9
ROA (return on assets) relevant to remuneration in %	5.3	16.5

The remuneration of the members of the Board of Management is described in full in the remuneration report (p. 124 ff.).

Customers and society goal dimension

Reputation

A strong reputation is an important factor for the sustainable success of a company. The good social reputation of a company reflects the trust placed by the general public and relevant stakeholders in the competent and responsible actions of a company.

Especially for companies in the energy industry, which is undergoing a period of fundamental change, this social acceptance is vitally important. A good reputation signals the willingness of society and its different stakeholder groups to cooperate with and invest in the company.

EnBW aims to continuously improve its reputation. The focal point of this concept is the stakeholder team, consisting of representatives from all important areas of the company, that was established in 2017. The stakeholder team directly or indirectly communicates and maintains dialogue with relevant stakeholder groups.

TOP Reputation Index

Reputation is measured using the key performance indicator Reputation Index.

Key performance indicator

	2018	2017	Change in %	Forecast 2018
Reputation Index	51.3	52.1	-1.5	52.7

The Reputation Index of EnBW fell to 51.3 index points in the reporting year. This was a significant deviation from the target value for 2018. The values for comparable large companies fell more than the reputation of EnBW, while the values for municipal utilities and regional suppliers remained at the levels achieved in the previous year. As a result, the advantage held by EnBW over national energy suppliers with respect to reputation once again widened a little in 2018. However, the deficit between EnBW and smaller competitors also grew at the same time. In comparison to the previous year, this can be attributed to, amongst other things, the reduced media presence of EnBW themes in 2018.

More details on reputational risks can be found in the "Report on opportunities and risks" on p. 118.

Customer proximity

EnBW wants to take steps towards becoming an infrastructure provider. A sustainable contribution could be made, for example, in the form of cooperative partnership models with local authorities, municipal utilities and suppliers. EnBW also has great opportunities for generating additional revenue and for acquiring new customers using tailored digital services and solutions.

An important step in this direction was taken with the introduction of the sales and operation platform **EnPower**.

EnPower was first launched for the NaturEnergie+ brand in the middle of 2017, then for Yello in the summer of 2018 and the EnBW brand is now also working intensively on this project. On the one hand, EnPower facilitates better interaction between customers and the EnBW, Yello and NaturEnergiePlus brands, while on the other hand, it provides the foundations for operating excellence with respect to the digitalisation, automation and streamlining of settlement processes for the supply of electricity. The non-commodity business is currently also being switched over to a new scalable IT platform. It will replace existing stand-alone solutions, cover the entire customer relationship and enable a 360 degree customer view thanks to its interface to EnPower. The first products such as the e-mobility charging infrastructure [Glossary, p. 153] were already transferred to the new platform in 2018.

TOP Customer Satisfaction Index

The energy sector is driving major social changes. The new energy world is full of great opportunities that we want to exploit. Our customers stand at the focal point of our work and we strive to maintain **long-term customer relationships** by offering networked products and new product combinations, continuous open communication and the best possible quality of service. Customer loyalty is based on high customer satisfaction, which is measured in accordance with the requirements of the EnBW Group standard for market research and surveys. It is binding for EnBW and its subsidiaries. The Customer Satisfaction Index for the two brands of EnBW and Yello are compiled from customer surveys carried out by an external provider.

Key performance indicator

	2018	2017	Change in %	Forecast 2018
Customer Satisfaction Index for EnBW/Yello	120/152	143/161	-16.1/-5.6	128-138/ 148-159

The satisfaction of the customers of EnBW reached a good level in 2018 at 120 points. A good level is achieved when half of those surveyed indicate that overall they are particularly satisfied with EnBW. This is the case from 114 points and upwards. A very good level of satisfaction is achieved from 136 points upwards. The Customer Satisfaction Index for EnBW of 120 points was below the forecasted range. This can be explained to some extent by the fact that both regional suppliers and municipal utilities and also most of the major competitors across Germany had lower levels of overall customer satisfaction compared to 2017. This trend in the sector was also experienced at EnBW. In addition, price increases in early 2018 had a negative effect on customer satisfaction.

The satisfaction of Yello customers was once again stable at a very good level in 2018 at 152 points. However, the satisfaction of Yello customers nevertheless fell in comparison to the outstanding result in the previous year. Yello carried out a system migration in the summer of 2018. During the migration, Yello reduced its marketing activities and some services were only available to Yello customers to a limited extent for a short period of time.

EnBW, Yello and NaturEnergie+ received several **awards** for their products and customer service in 2018. EnBW was awarded the title of “Best electricity supplier in Germany” by Focus Money magazine and Statista as part of the Energy Atlas Germany 2018. The magazine *Wirtschaftswoche* (10/2018) ranked the best gas suppliers in the 100 largest cities using data from the comparison portal Verivox. The result: EnBW is one of the fairest gas suppliers in Germany. Both Yello and NaturEnergie+ were awarded the title of “Fairest electricity supplier” for the eighth time by Focus Money (edition 38/2018). In addition, EnBW won the Contracting Award for the second time in 2018, following its first award in 2010. The award is presented by the Energy Efficiency Association for Heating, Cooling and Combined Heat and Power (AGFW) and the magazine *Energie & Management*.

The **EnBW campaign** “We’re making it happen” was continued with new refined motifs in 2018. The key themes were electromobility, wind power and customer solutions, using the example of EnBW solar+. It was important to EnBW to place a strong focus on customers in the implementation of the campaign. In this respect, the campaign is a logical continuation of the 2016 and 2017 campaigns – but shifting the focus from employees (the people making the Energiewende happen) to customers. The ongoing aim is to show a new EnBW that presents itself with a fresher and more unconventional image than before, especially on the advertising market. The campaign has been accompanied by two videos: An image video demonstrated the power that energy can give to people. A second video was a continuation of the animation film featuring “the birds on the high-voltage power line” that provided a humorous look at the theme of electromobility in 2018.

In 2018, EnBW expanded its portfolio of energy industry services and energy solutions and carried out numerous sales activities and communication measures. A special emphasis was placed here on **electromobility**. In this sector, EnBW has become a full-service provider and together with its subsidiaries covers the complete spectrum of services for the development and expansion of electromobility from the supply of electricity and the operation of a comprehensive charging infrastructure (Glossary, p. 153) through to digital services for the consumer. EnBW entered into various collaborations with renowned partners in 2018 that promote, above all, the expansion of the quick-charging infrastructure in urban areas across Germany. At the same time, EnBW almost tripled the number of charging stations available via the EnBW mobility+ app. The number of publicly accessible charging stations in Germany, Austria and Switzerland covered by the app increased from 8,000 to more than 22,000 in 2018. In addition, drivers can use the app directly to pay for the electricity used to charge their e-cars at these stations. The EnBW mobility+ Wallbox enables safe and easy charging at home with a charging capacity of up to 11 kW.

In the **SAFE project** (core charging network for electric cars in Baden-Württemberg), which is being promoted by the State of Baden-Württemberg, 77 municipal utilities, suppliers and local authorities are working together to develop a core charging network in Baden-Württemberg. EnBW is coordinating the project as the head of the consortium and acts as the contact for the state authorities.

With the solar solution **EnBW solar+**, customers themselves can become energy producers. A solar power plant including a storage system enables customers to produce their own solar electricity and then store it for use later on. We are working together closely with our subsidiary SENEK in this area. The acquisition of SENEK GmbH in the reporting year represented a major step towards EnBW becoming a full-service provider for home energy solutions. SENEK has sold more than 20,000 electricity storage systems with energy management functions and is one of the most important suppliers on the home storage market in Germany.

We use **bundle offers** (Glossary, p. 152) to offer customers attractive deals, promote market penetration and strengthen customer loyalty. Our customers are currently able to choose from three different devices with the new EnBW tariffs. At the same time, a cross-selling and customer referral campaign was started in combination with online advertising to increase traffic on our websites. The **Yello Plus tariff** – an energy contract offered in combination with a chosen device – was also in high demand in 2018. The range of hardware options available was continuously expanded to improve the attractiveness of the product even further.

The **contracting** business field has been made more competitive, transparent and sustainable by optimising the process for issuing quotes, customer proximity and shortening response times. A project realised by EnBW that involves an energy network solution in Waldbronn, near Karlsruhe, is one example here. Two industrial companies and two local authority facilities are supplied with heating, cooling, cooling water and electricity. The use of combined heat and power technology and the utilisation of waste heat not only result in cheaper generation costs but also avoid 680 t CO₂ emissions per year.

EnBW supports local authorities and municipal associations in the area of **broadband** (Glossary, p. 152) – from the planning and installation of infrastructure through to operation and the end-customer business. Cost efficiency, fast implementation and customer satisfaction hold the highest priorities in this area. For example, Rechtenstein is one of three communities across Germany that has received funding to become a “fibre-optic community” by installing fibre-optic cables throughout the entire area. Our subsidiary Netze BW began the construction work in October 2018. All of the companies and most of the households will have direct access to the fibre-optic network by the end of 2019. The network will be operated by NetCom BW. The company RBS wave, a subsidiary of Netze BW, secured the contract in a Europe-wide tender process in July 2018 to develop a broadband network for the Rastatt administrative district as the general planner. In the project, RBS wave is responsible for planning the fibre-optic backbone network for the connections to local areas of expansion/industrial estates, public facilities and all schools in the administrative district. The company is involved in all stages of the project through to completion and will thus have an active presence in all local authority areas. Another example for the development and expansion of critical system infrastructure in neighbouring business fields is security technology: Gernsbach in Murgtal will be the first community in Baden-Württemberg, for example, to be fitted by EnBW with

the new product EnBW SafePlaces – a smart video sensor system that is connected to the EnBW security control centre.

Supply reliability

Guaranteeing a reliable supply of electricity to our customers is a key goal of EnBW and its grid subsidiaries. For this purpose, the electricity grids must perform their distribution function with sufficiently high continuity. SAIDI is used as an indicator for supply reliability; it states the average duration of supply interruptions per connected end customer in minutes per year.

TOP SAIDI

SAIDI is one of the key performance indicators in the area of electricity grids and is optimised by the distribution grid operators of EnBW using various processes that are partially integrated with one another: the desired grid topology (Glossary, p. 153) in the long term is thus already oriented towards optimising SAIDI at the planning stage. As part of an IT-supported asset simulation, various technical variants and their associated investment budgets are then analysed. Once the chosen variant has been implemented, the available investment budget for optimising SAIDI is distributed to the various different projects on an annual basis. The specific measures are selected based on performance indicators for plant reliability.

Key performance indicator

	2018	2017	Change in %	Forecast 2018
SAIDI (electricity) in min./year	17	19	-10.5	15-20

A similarly good level for SAIDI was achieved in the EnBW Group in 2018 as in the previous year and it was thus within the forecasted range.

Employees goal dimension

The key tasks of HR are providing the company with employees, including the promotion of young talent, encouraging loyalty to the company amongst employees and maintaining and fostering their motivation, satisfaction and employability. Leadership, corporate culture, HR development and health management are key aspects in this area. Other important elements of a successful HR policy are ensuring the best possible employment conditions, such as in the negotiation of collective bargaining agreements, as well as adapting the organisational structure to the business environment.

Therefore, we believe that the value drivers for our HR policy can be found in the following areas of focus:

- > Leadership
- > Safeguarding and promoting expertise
- > Employment conditions and structures
- > Health management

Employee Commitment

TOP Employee Commitment Index (ECI)

The key performance indicator ECI is an important indicator for EnBW as it reflects the degree to which employees identify with the company. The annual measurement of this indicator enables us to respond specifically to any negative trends at an early stage.

Key performance indicator

	2018	2017	Change in %	Forecast 2018
Employee Commitment Index (ECI) ¹	62	60	3.3	62

¹ Variations in the group of consolidated companies (consideration of companies controlled by the Group [without ITOs])

The fourth short survey for monitoring the ECI – MAB-Blitzlicht (Employee Flashlight) – was carried out between 17 September and 5 October 2018. As in the previous year, the MAB-Blitzlicht survey comprised just twelve questions and was carried out by taking a random representative sample. As in the full surveys, it collected information on the level of commitment of the employees to the Group and to their respective company. The ECI from MAB-Blitzlicht 2018 revealed a clear improvement from 60 (2017) to 62 points. The target set for 2018 was thus achieved. Considering the period of transformation at EnBW, the ECI value achieved by the Group placed it in a good position at the high end of mid-table when ranked against other companies in the sector.

The positive development of the ECI can once again be attributed to a better perception of the current competitiveness of the Group and employees having greater trust in the future viability of the Group. Following the latest survey, the Board of Management again set itself the goal of reducing the uncertainty and scepticism of the workforce with respect to these two factors. This was achieved through the resolute implementation of the 2020 strategy, in which we have made successful progress, and the discussion of the post 2020 strategy in dialogue with managers and employees across all departments and companies (strategy dialogue). In particular, the significant improvement in the perception of the competitiveness and future viability of the company by top and upper management demonstrated that the strategy presented and followed by the Board of Management of the Group has been met with acceptance and support. It was also possible to transfer this increasingly positive image to the remaining management team and employees and integrate them even more strongly into the process.

Areas of focus in HR

The most substantial measures and activities carried out by EnBW and the key subsidiaries are reported in the following areas of focus.

Leadership: The digital energy industry is characterised by a high level of complexity. In order to be able to react and lead appropriately in this environment, new skills are required. The leadership development activities at EnBW concentrate on the themes of managing the business, developing new products, leading people, methodological excellence and self-management as part of the “Digital Leadership” programme. Special importance is being given here to the improvement of cross-departmental cooperation and the formation of effective leadership coalitions, which are also supported by the increased use of agreements on team targets. The “Next Level Leadership” initiative has grown out of the “Digital Leadership” programme: After receiving fundamental guidance on what behaviour and skills are helpful in an increasingly dynamic and less predictable world, employees in leadership positions are provided with advice and offered individual learning experiences. A group of digital pioneers is, for example, being provided with an opportunity to learn about specific digital technologies and business models. In addition, change projects can be mentored through internal and external advice given on the job. For this, we use modern learning formats that enable participants to directly experience contemporary leadership at work. The aim is to realise the digital transformation of the Group more quickly and effectively.

The **Leadership Forum 2018** focused on the theme of “leadership and cooperation in a period of transition” for the successful implementation of the strategy post 2020. More than 700 managers and employees in leadership positions without disciplinary responsibility were able to exchange ideas on the new challenges, common values and individual learning goals at the event.

Alongside the annual management day and continuous training opportunities, the focus at PRE was placed on carrying out Assessment and Development Centres and work assessments based on a competency model. The Development Centre generally defines the development requirements for new or existing managers once a year based on eight managerial skills.

At Stadtwerke Düsseldorf (SWD), the focus in terms of leadership in the reporting year was placed on the continuation of the “Management Dialogue” and “Health-oriented Leadership” formats, as well as the “Kick-start for new managers” and “Equal opportunities in leadership” concepts.

VNG started the “Leadership compass” project in 2017. As part of this project, principles for appreciative leadership were developed together with managers. Eight meetings were held on this theme in 2018. The 180 degree feedback process for all management personnel at the VNG Group, which included a self-assessment by the managers and also an assessment by their superiors and employees, was also carried out. In addition, there were three managerial and employee days held on the theme of leadership and cooperation in the era of digitalisation.

The International VNG P-Community meeting – which enabled a comprehensive exchange of ideas on current and perspective HR issues – was also held for the first time in 2018.

Safeguarding and promoting expertise: An important goal for EnBW is to be an attractive employer so that it can secure the expertise it requires and then retain this expertise within the company. In particular, the concepts and measures developed for this purpose focus on the themes of diversity, the promotion of young talent and the attractiveness of the employer.

Proportion of women and part-time employees at EnBW

in %	2018	2017	Change
Proportion of women in the overall workforce	26.4	26.2	0.2
Proportion of women in management positions	15.3	15.2	0.1
Proportion of women in management positions at EnBW AG			
First level below the Board of Management ¹	0.0	4.3	-4.3
Second level below the Board of Management ¹	15.1	14.0	1.1
Total proportion of part-time employees ²	9.4	9.4	0.0
of which women ²	82.8	82.6	0.2
of which men ²	17.2	17.4	-0.2

1 The values refer to EnBW AG.

2 Excluding those in semi-retirement.

EnBW promotes **diversity** amongst its employees. Under the motto “Diversity generates success”, EnBW relies on a diverse workforce in terms of numerous different criteria such as gender, age, interculturality, sexual orientation and people with disabilities, as well as sector backgrounds, different working models and work organisation. We hope to use the diversity in people and perspectives to better respond to the needs of the market, accelerate the speed of innovation, be an attractive employer and thus shape a successful future. The aim is to utilise the opportunities offered by diversity in all areas of the company so as to generate added value for employees and also for EnBW. In recognition of this diversity, EnBW took part in the Christopher Street Day in Stuttgart for the first time in 2018 with its own float. The motto was “LivingDiversity”. We want to signal through our involvement that our workforce reflects the diversity of society and our customers and that we stand for an open society. In November 2018, the second “Diversity and Innovation” conference was held at the Innovation Campus in Karlsruhe with both internal and external participants. The focus was placed on the theme of “Actively managing diversity – opportunities and challenges”. The aim of the conference was to discuss and promote the current diversity agenda at EnBW.

The fall in the proportion of women at the first level below the Board of Management was due to one person leaving the company without replacement and the fact that no other new appointments were made at this level in 2018. EnBW AG is placing its focus on increasing the number of women at the second level in order to develop suitable candidates for the first level.

The Board of Management has set the goal of further increasing the proportion of women in both management levels below the Board of Management in the period from 1 January 2017 to 31 December 2020. At both the first level (top management) and second level (upper management), the proportion of women should increase to at least 20%. Despite a great deal of effort, these targets were not yet achieved in 2018 (as of 31 December 2018).

Above and beyond the statutory requirements, the Board of Management focuses on diversity when filling management positions at the EnBW Group and also strives to give appropriate consideration to women. A fundamental goal of EnBW is to appoint women at all levels of the hierarchy. After piloting the multi-stage advisory service “CareerCompass” in 2016, the number of women provided with advice increased from 17 in 2017 to 49 in 2018. The advice is specifically designed for women with the potential to assume leadership roles, based on their previous career experience. The internal EnBW women’s network is a well-used platform for female employees with and without leadership responsibility to exchange information and ideas.

In the external recruitment of young female leadership talent, EnBW relies on, amongst other measures, the Femtec network and participates in trade fairs and discussion forums tailored specifically for women. In the “Initiative Chefsache” network, the company has collaborated in five working groups. These include groups focussing on the themes of “Rethinking the development of talent” and “Part-time management” from which the internal pilot scheme “Management on a part-time/job-sharing basis” was derived in 2018 for employees in management positions. In the individual business units, sector-specific events and campaigns are carried out to address relevant requirements. For example, the subsidiary Netze BW holds an annual Women’s Day that is specifically tailored to interested female students.

To ensure the success of the digital transformation at EnBW and find the right employees for growth fields such as electromobility, recruitment activities focus on securing the necessary new talent on the market. It is becoming increasingly difficult to find qualified experts with the required know-how on the external job market. Therefore, EnBW is developing its own active sourcing expertise to actively seek out potential candidates. For this purpose, the placement of advertisements and campaigns together with the channels and media used are oriented towards specific candidates. In addition, EnBW has started an “employees recruit employees” programme in selected areas of the company. An example of the success of our measures is the fact that EnBW AG was also certified by the Top Employers Institute as a Top Employer Germany 2018 based on a comprehensive catalogue of criteria and an external audit.

Promotion of young talent

in %	2018	2017	Change
Proportion of trainees including DH students	4.1	4.3	-0.2
Proportion of working students/interns	5.0	4.2	0.8

Another part of the HR policy is **promoting young talent**. The EnBW Group employed 938 trainees and students from the Cooperative State University (DH) as of 31 December 2018. There are plans to appoint 346 new trainees and DH students in 2019.

SWD launched the “Employer brand” project in 2018. Workshops were used here to assess aspects of cooperation and interaction in the company and compare the current situation with the desired goal. The results from these workshops and interviews are summarised in the positioning statement of the company as an employer. This is then communicated to the workforce and used as the basis for HR marketing.

VNG started discussions with Berufshakademie Sachsen, Staatliche Studienakademie Leipzig (the University of Cooperative Education) in 2017 about replacing the apprenticeship to become an industrial merchant with a dual degree. In particular, the new course should take into account the requirements of the digital world. The aim is for VNG and the university to develop a module on digitalisation together by 2019 that accounts for around 30% of the teaching content. In 2018, three students started their dual degrees at the university. Both internal and external workshops on the theme of digital working were also held. In a list compiled by the business magazine Focus on “The best employers in Saxony 2018”, VNG was ranked in third place.

ED started a competence management project for the operation and maintenance of power plants in 2018 with a focus on the following four aspects: competence matrix, competence assessment, career and succession planning, and functional descriptions. Five information events were held to inform employees about the subject matter and train them to use the tools. A management workshop was then held at the end of November to evaluate the results from these events. In addition, managers were trained on how to handle discussions and evaluations, as well as on general themes dealing with the characteristics required for leadership.

PRE implemented numerous specific measures in 2018 that focussed on the recruitment of new employees in growth fields and the promotion of young talent.

EnBW introduced the new **communication platform Yammer** in 2018. It offers employees a diverse range of opportunities to exchange ideas, share experiences and work together on different themes. Yammer replaces Teamblog, which was introduced as the first digital dialogue medium within the

Group at the end of 2014. Every employee can use the new platform to write articles, start small surveys and exchange ideas and information within public and closed groups. These groups are not tied to the departments and can be directly set up by all employees. The decision to launch Yammer as the official communication channel is the result of a joint project by IT and internal communication in close cooperation with the works council.

Employment conditions and structures: Further **efficiency measures** in some of the operational areas and functional units of EnBW AG are necessary to achieve additional savings up to 2020. In the functional units, the main focus was placed on the realignment of the IT department. In 2018, special emphasis was placed on training employees and recruiting new employees with key skills with respect to digitalisation and further strengthening the business orientation of the IT department. The ongoing efficiency enhancement programme in the area of conventional generation was rigorously continued. In the area of nuclear generation, further measures were agreed for the transition to the dismantling of the power plants. As a response to the increasing market pressure and in order to retain or enhance market viability and competitiveness and thus safeguard jobs, B2C services and activities relating to the third-party market were realigned within the operations business unit. Alongside the optimisation of the organisational structure that was completed on 1 April 2018, this included the successful introduction of new, agile, cross-functional working methods. As part of the further refinement of the organisational structure, another challenging milestone was achieved when the Yello brand went live on the new IT platform. This will make it possible to reduce the number of employees within the planned time period using socially acceptable tools. Other effects were achieved through adjustments to provisions in collective bargaining agreements as of 1 April 2018, such as increasing the weekly working hours, extending the framework working hours and adjustments to classifications.

Despite difficult underlying conditions, EnBW also achieved its ambitious earnings target in 2018. The Board of Management honoured the huge efforts made by the whole EnBW team with its decision to pay a **profit-sharing bonus** in 2018. The existing arrangement – according to which no profit-sharing bonus should be paid in 2018 – was once again suspended in agreement with the works councils.

The union ver.di and the Employers Association for Electricity Power Plants in Baden-Württemberg agreed on 19 February 2018 that remuneration will increase by 3.0% from 1 February 2018. Remuneration will increase uniformly for all trainees by €70. Holiday pay under the collective agreement was increased by 9.0%. This collective remuneration agreement was terminated by the union by the due date of 28 February 2019. The negotiations for a follow-up agreement resulted in an agreement on 28 February 2019 whereby **tariff-based remuneration** will increase in three stages over a period that runs until at least 28 February 2021: by 2.5% from 1 March 2019, by a further 1.9% from 1 November 2019 and by an additional 1.9% from 1 July 2020. The remuneration rates for trainees will increase on these

dates by €80, €50 and then a further €50. The collective bargaining agreement at PRE was extended by two years at the beginning of 2018. The agreed increase in remuneration was above the guaranteed minimum increase in the previous collective bargaining agreement due to the challenges on the Czech labour market.

Health management: The welfare of employees has always been an important issue for EnBW. As part of occupational health and safety management, the company offers a variety of activities in the areas of occupational safety and health protection in the key companies. For example, a **week-long campaign** on the theme of “Don't stress about stress” was held at the Karlsruhe site at the beginning of October 2018 in which employees of EnBW were able to participate in talks and workshops. In addition, employees were able to measure their heart rate variability to obtain information on their own personal stress levels. Another example is provided by the **health days** that were organised by EnBW at the start of the 2018 training year for the new commercial and technical apprentices at the sites in Karlsruhe, Stuttgart, Heilbronn and Biberach. During these health days, the apprentices were able to gain an overview of the health services offered by EnBW – from medical examinations and health courses through to preventative measures for specific target groups. In addition, the police departments at each of the training sites supported the preventative activities offered by EnBW with **talks and workshops** on themes such as addiction to alcohol, drugs, mobile phones, the Internet and gaming, as well as traffic safety, cyberbullying, violence prevention and the correct use of digital media.

All of the teams and departments at ED were surveyed on the subject of “Risk assessment – psychological stress” in 2018 and the first measures were derived from the results. Furthermore, the possibilities for working from home and for mobile working were expanded as part of the measures undertaken for validation of the “berufundfamilie” (“career and family”) certificate. PRE offers, amongst other things, a comprehensive preventative programme that focuses on breast, skin and prostate cancer. SWD has a programme focussing on health-oriented management at the team leader level. There are also numerous opportunities for employees to improve their personal fitness and take advantage of preventative healthcare, such as seasonal flu injections. VNG offers a comprehensive range of preventative occupational medicine in the fields of heart, circulation, metabolism and musculoskeletal illnesses via its company doctors and also carries out eye and hearing tests as well as ECG and laboratory testing. In addition, the company arranges appointments with specialist doctors at short notice in cooperation with a health-care centre in Leipzig.

Sickness ratio

in %	2018	2017	Change
Sickness ratio	5.1	5.0	0.1

The sickness ratio did not change significantly compared to the previous year.

Other performance indicators

Employees of the EnBW Group¹

	31/12/2018	31/12/2017	Change in %
Sales	3,657	3,331	9.8
Grids	8,920	8,858	0.7
Renewable Energies	1,144	1,050	9.0
Generation and Trading	5,419	5,457	-0.7
Other	2,635	2,656	-0.8
Total	21,775	21,352	2.0
Number of full-time equivalents ²	20,379	19,939	2.2

1 Number of employees excluding apprentices/trainees and inactive employees.

2 Converted into full-time equivalents.

As of 31 December 2018, the EnBW Group had 21,775 employees. As new appointments are only being made in strategic growth fields, the number of employees was just slightly higher than the level at the end of 2017. The increase in the Sales segment was mainly due to restructuring within the Group. This was offset to some extent by the withdrawal from the B2B commodity business under the EnBW and Watt brands. The number of employees in the Grids segment increased compared to the previous year's reporting date. This was due to two conflicting developments: on the one hand, the movement of employees to the Sales and Renewable Energies segments as part of the restructuring, and on the other hand, an increase in the number of employees due to the growing importance of the regulated business and the first-time consolidation of Technologie Service Heilbronn GmbH. The reduction in the Generation and Trading segment was mainly due to the deconsolidation of VNG Norge. Restructuring within the Group and the associated transfer of employees to the Sales segment and the planned departure of employees based on earlier restructuring programmes resulted in a decrease in the number of employees in the "Other" segment. However, these two effects were partially balanced out due to the new appointments in the business areas of digitalisation and critical infrastructure.

Turnover

in %	2018	2017	Change
Employee turnover ratio	6.5	7.0	-0.5

In contrast to 2017, there were no new restructuring programmes in 2018. The employee turnover ratio thus fell in comparison to the previous year.

Further performance indicators for employees, such as the regional distribution or age structure of our employees, can be found on our website at www.enbw.com/performance-indicators.

We also refer you to the details provided in the "Report on opportunities and risks" (p. 118).

Occupational safety

The main goals of EnBW in the area of occupational safety are to avoid accidents and work-related illness, to create a safe working environment and clearly regulate responsibilities, roles and processes. In order to achieve these targets, EnBW already founded the Occupational Safety Working Group (AK KAS) in 2003. AK KAS has the task of regulating issues that affect all companies uniformly within the Group. Its scope of application covers those companies that use LTIF as a performance indicator. AK KAS is headed by the Chief Technical Officer of EnBW and has the power to make binding decisions in accordance with the company's rules of procedure.

TOP LTIF

The key performance indicator LTIF is used to measure the number of accidents at work and the resulting days of absence. Every Group company included in the consolidated companies for the LTIF receives an individual target from the Board of Management for the relevant year – the fulfilment of this LTIF target flows into the monetary assessments for the achievement of relevant targets. Above and beyond these targets, the companies also set their own individual targets.

Key performance indicator

	2018	2017	Change in %	Forecast 2018
LTIF ¹	2.3	3.0	-23.3	≤ 3.7 ²

1 Variations in the group of consolidated companies (consideration of all employees at those companies controlled by the Group, except external agency workers and contractors).

2 Three-year target for 2017, 2018 and 2019.

In 2018, the LTIF improved significantly compared to the previous year to 2.3, after this key performance indicator had already experienced a noticeable drop in 2017. However, the average days of absence per accident rose to 22.2 (previous year: 16.8). We believe that the significant improvement in occupational safety at EnBW is the result of consistent and effective activities in the area of occupational safety and health protection.

In the reporting year, there was a fatal accident at a third-party company that was working on behalf of the EnBW Group.

The measures for achieving targets are independently defined by the Group companies. There were various different **activities focussing on occupational safety** in 2018:

The new software EcoWebDesk (EWD) – which has been called Quentic since October 2018 – was introduced into further areas at EnBW. The technical preparations for the deployment of Quentic have largely been concluded. Important elements of Quentic are the documentation of risk assessments and hazardous substance management. The launch of the “Risk & Audit” (audit management) module at our subsidiary Netze BW will begin in 2019.

In the Grids segment, a series of campaigns to further improve the safety culture were carried out in 2018:

- › A meeting of the safety officers to discuss the latest issues was held in April. In addition, some manufacturers presented their products in the area of personal protective equipment at this large event. Seminars have been offered for the safety officers to help them improve their role since the end of 2017.
- › The occupational safety management system was successfully recertified in September.
- › In November, Netze BW carried out a “Flashlight Day” across all sites to raise awareness amongst employees for occupational safety and health protection.
- › The project “Working safely on the grid” (SaiN), which was designed to ensure that employees working on behalf of the grid operating companies are trained to a sufficient level, was concluded in 2018.

In the area of conventional and renewable generation, a two-day campaign called “Occupational safety days” was held at each of the power plant sites. Rescue concepts (rescuing at heights and depths) at the individual sites were also improved further. In addition, the “100 days without accidents” campaign started in 2015 was continued. The 100-day goal was achieved a total of 16 times across a number of power plant sites.

The main focus at SWD was placed on the following activities:

- › As part of the occupational safety and healthcare protection programme OS/HP Programme 2015plus, a concept for dealing with “near accidents” was developed.
- › The workshop covering behavioural aspects was continued as part of the OS/HP Programme 2015plus.
- › As part of the “RheinSchiene” project, a special “safety officers’ day” was held for the first time in Düsseldorf.

We also refer you to the details provided in the “Report on opportunities and risks” (p. 118).

Environment goal dimension

The main subsidiaries of EnBW that have to deal with environmental issues have an environmental management system certified according to DIN EN ISO 14001:2015. These include, amongst others, EnBW AG, Netze BW, Stadtwerke Düsseldorf and Energiedienst Holding. In accordance with the DIN standard, these environmental management systems follow a concept of continuous improvement in environmental performance which is based on the method Plan-Do-Check-Act (PDCA). The systems encompass the definition and realisation of environmental targets with their performance indicators and corresponding measures, the procedures and responsibilities and the identification of environmentally relevant risks and opportunities. Alongside the Group environmental targets, which are modelled with the aid of the key performance indicators, the main subsidiaries that have to deal with environmental issues have also defined additional, quantified environmental targets within the scope of their environmental management systems – especially in the areas of energy saving/efficiency and mobility. Using established due diligence processes and internal audit programmes, the agreed regulations and guidelines are then monitored in terms of legal and other requirements, as well as with regard to the defined environmental targets. In addition, the effectiveness of the measures and targets is examined by external certification bodies as part of the annual conformity audits of the environmental management systems. If necessary, the processes and guidelines, as well as the targets and measures, will be adjusted. The consistent implementation and further development of the environmental management system guarantees that significant negative impacts on the environment can be avoided as well as possible. Risks generally exist in the area of environmental protection due to the operation of power generation and transmission plants and the possible consequences for the air, water, soil and ozone layer. These risks are countered by EnBW using an emergency and crisis management system that has been implemented throughout the Group and includes comprehensive organisational and procedural measures.

Our Group environmental targets are related to the expansion of renewable energies and making our contribution to climate protection. These targets are measured using the key performance indicators “installed output of renewable energies (RE) and the share of the generation capacity accounted for by RE” and CO₂ intensity (Glossary, p. 152).

Expansion of Renewable Energies

Key performance indicator

	2018	2017	Change in %	Forecast 2018
Installed output of RE in GW and the share of the generation capacity accounted for by RE in % ¹	3.7/27.9	3.4/25.8	8.8/8.1	3.6–3.7/27–28
1 The figures for the previous year have been restated.				

Breakdown of the generation portfolio of the EnBW Group¹ (as of 31/12)

Electrical output ^{2,3} in MW	2018	2017
Renewable Energies	3,738	3,351
Run-of-river power plants	1,006	1,004
Storage/pumped storage power plants using the natural flow of water ³	1,507	1,327
Onshore wind	718	540
Offshore wind	336	336
Other renewable energies	171	144
Thermal power plants⁴	9,661	9,656
Brown coal	875	875
Hard coal	3,491	3,523
Gas	1,468	1,431
Other thermal power plants	349	349
Pumped storage power plants that do not use the natural flow of water ³	545	545
Nuclear power plants	2,933	2,933
Installed output of EnBW Group⁵	13,399	13,007
of which renewable in %	27.9	25.8
of which low CO ₂ in % ⁶	15.0	15.2

1 The generation portfolio includes long-term procurement agreements and generation from partly owned power plants.

2 The figures for the previous year have been restated.

3 Output values irrespective of marketing channel, for storage: generation capacity.

4 Including pumped storage power plants that do not use the natural flow of water.

5 In addition, power plants with an installed output of 1,706 MW were registered for decommissioning. However, they were classified as system-relevant by the Federal Network Agency and TransnetBW and are thus used by TransnetBW as reserve grid capacity.

6 Excluding renewable energies; only gas power plants and storage power plants that do not use the natural flow of water.

TOP Installed output of renewable energies (RE) and the share of the generation capacity accounted for by RE

In the reporting year, the installed output of renewable energies increased by 387 MW to around 3.7 GW and was thus within the range of the forecast. This was primarily due to the commissioning of the pumped storage power plant Obervermuntwerk II. In addition, 178 MW was attributable to the expansion and acquisition of several onshore wind farms with a total of 81 wind turbines. An additional 22 MW of output was added at photovoltaic power plants. Overall, the share of the generation capacity accounted for by RE increased – within the range of the forecast – to 27.9%.

Own generation of the EnBW Group¹ by primary energy source

in GWh	2018	2017
Renewable Energies	8,414	8,290
Run-of-river power plants	4,846	5,012
Storage/pumped storage power plants using the natural flow of water	1,030	946
Onshore wind	996	661
Offshore wind	1,233	1,416
Other renewable energies	309	255
Thermal power plants²	45,078	41,904
Brown coal	6,048	6,027
Hard coal	12,868	12,977
Gas	3,518	3,436
Other thermal power plants	198	211
Pumped storage power plants that do not use the natural flow of water	1,790	1,721
Nuclear power plants	20,656	17,532
Own generation of the EnBW Group	53,492	50,194
of which renewable in %	15.7	16.5
of which low CO ₂ in % ³	9.9	10.3

1 Own electricity generation includes long-term procurement agreements and partly owned power plants.

2 Including pumped storage power plants that do not use the natural flow of water.

3 Excluding renewable energies; only gas power plants and storage power plants that do not use the natural flow of water.

Own generation of the EnBW Group increased in 2018 compared to the previous year to around 53.5 TWh. Generation based on renewable energy sources mainly increased due to the expansion of onshore wind power. This was offset to some extent by lower generation from offshore wind power due to unfavourable wind conditions, and at the run-of-river power plants due to low water levels in the second half of 2018. The proportion of own generation from renewable energy sources fell despite the increased generation in comparison to 2017 to 15.7%. The reason for this was an increase in own generation from nuclear energy caused by the extension of the inspection and related production shortfall at KKP 2 in the previous year.

In October 2018, a green bond [Glossary, p. 153] was issued to finance, amongst other things, the further expansion of the onshore wind farm portfolio [p. 85 f.].

Climate protection

Key performance indicator

	2018	2017	Change in %	Forecast 2018
CO ₂ intensity in g/kWh	553	556	-0.5	-10% to 0%

TOP CO₂ intensity

The CO₂ intensity (Glossary, p. 152) of own generation of electricity excluding nuclear power fell slightly in comparison to the previous year by 0.5% to 553 g/kWh and was thus within our forecasted range. This fall was due to the higher generation from renewable sources and the simultaneous almost constant level of electricity generation from fossil fuels in comparison to 2017.

Other performance indicators

In addition to the key performance indicators in the area of the environment, EnBW utilises a broad range of additional environmental indicators for measuring, controlling and presenting the other results of its environmentally relevant activities. The most important performance indicators are presented in the following table on p. 104. A comprehensive presentation of the environmental performance indicators for EnBW can be found on the Internet at www.enbw.com/umweltschutz.

There is also information available here on our wide-ranging measures to improve energy efficiency, the conservation of biological diversity and the protection of nature and species, such as our EnBW amphibian protection programmes or on ecological enhancement measures in the area of our hydro-electric power plants. In addition, further information relating to the Global Reporting Initiative (GRI standards) can be found on the Internet.

Carbon footprint: Direct CO₂ emissions are determined mainly by the deployment of power plants. The slight decrease in electricity generation from coal led to a corresponding reduction in the direct CO₂ emissions from 16.7 to 16.6 million t CO₂eq. Lower indirect CO₂ emissions from grid losses led to a fall in Scope 2 CO₂ emissions from 1.1 million t CO₂ to 1.0 million t CO₂eq. The Scope 3 CO₂ emissions are mainly influenced by the gas consumption of our customers. EnBW has significantly expanded

its gas sales due to the acquisition of VNG. VNG was only fully consolidated in the second quarter of 2017. Gas sales in the first quarter were thus reported for the first time in the 2018 financial year. This resulted in a significant increase in Scope 3 emissions. As a result of the increased generation from renewable energy sources and rise in the use of biomethane, CO₂ emissions avoided rose from 6.3 to 6.9 million t CO₂eq.

Energy consumption: Total final energy consumption includes the consumption of final energy for the business activities of EnBW. It does not include conversion losses during energy generation or grid losses. Total final energy consumption is mostly influenced by pump energy as well as the company's own consumption requirements and the operating consumption of the power plants. It remained almost unchanged at the same level as in the previous year at 3,252 GWh.

The proportion of renewable energies in the final energy consumption increased from 49% in 2017 to 51% in 2018. This was primarily due to an increase in pump energy at the pumped storage power plants operated by Vorarlberger Illwerke, which utilise green electricity.

The energy consumption of our buildings covers the energy required for heating rooms, providing hot water and electricity. The energy consumption of buildings per employee increased from 10,214 kWh in 2017 to 10,482 kWh in 2018. This increase is not due to higher energy consumption, but rather to the fact that VNG was only fully consolidated in the second quarter of 2017. Accordingly, the high amount of energy consumed by VNG for heating due to the weather conditions in the first quarter of 2017 was not included in the figures and resulted in lower energy consumption per employee for the previous year.

Environmental protection expenditure: We report environmental protection expenditure in line with the requirements of the statistical offices and using the guidelines published by our sector association, the BDEW. Investment in the expansion of renewable energies in 2018 was below the level in the previous year. The reason for this development was the sharp expansion in onshore wind farms in 2017. This led to a reduction in investment for environmental protection to €535 million and a drop in the ongoing expenditure relating to environmental protection to €268 million in comparison to the previous year.

Environmental performance indicators

	Unit	2018	2017
Carbon footprint			
Direct CO ₂ emissions [Scope 1] ^{1,2}	millions of t CO ₂ eq	16.6	16.7
Indirect CO ₂ emissions [Scope 2] ³	millions of t CO ₂ eq	1.0	1.2
Other indirect CO ₂ emissions [Scope 3] ⁴	millions of t CO ₂ eq	33.6	23.7
CO ₂ emissions avoided ^{2,5}	millions of t CO ₂ eq	6.9	6.3
CO ₂ intensity of business journeys and travel ⁶	g CO ₂ /km	181	176
Energy consumption			
Total final energy consumption ^{2,7}	GWh	3,252	3,254
Proportion of renewable energies in final energy consumption ^{2,8}	%	51	49
Energy consumption of buildings per employee ^{2,9}	kWh/MA	10,482	10,214
Environmental protection expenditure ¹⁰			
Investment in environmental protection	€ million	535	650
Current environmental protection expenses ²	€ million	268	345

1 Preliminary data.

2 The figures for the previous year have been restated.

3 Includes greenhouse gas emissions through electricity grid losses and through electricity consumption of plants in the gas and electricity grid, water supplies and buildings.

4 Includes greenhouse gas emissions through consumption of purchased electricity volumes by customers, consumption of gas by customers, fuel provision and business travel.

5 Includes CO₂ emissions avoided through the expansion of renewable energies, through energy efficiency projects with customers/partners and through the generation and sale of biogas.

6 Includes all business travel and business activities [Scope 1 and Scope 3].

7 Includes final energy consumption of production including pump energy, energy consumption of grid facilities (electricity, gas and water) excluding grid losses, energy consumption of buildings and vehicles.

8 For electricity consumption for which the proportion of renewable energies is unknown, a proportion of renewable energies in accordance with the current Bundesmix (federal mix) label for electricity of 32% is used. For fuels, a proportion of 5% bioethanol is generally used.

9 Calculated partially on the basis of assumptions and estimations.

10 Pursuant to the German Environmental Statistics Act (UStatG) and BDEW guidelines on the recognition of investment and ongoing expenditure relating to environmental protection (April 2007).

Mobility at EnBW: EnBW further expanded its fleet of electric cars to 167 vehicles in 2018 and continues to follow the goal of being one of the largest electric fleet operators in Germany.

In order to motivate its employees to use alternative, environmentally friendly solutions for the daily trip to work, EnBW introduced attractive incentives for employees in 2018. These included, for example, a subsidy for the purchase of a yearly ticket to use the public transport systems in Karlsruhe and Stuttgart. In the “job bike” scheme, EnBW as an employer offers its employees the opportunity to purchase high-quality bikes and e-bikes at favourable conditions. As part of the “Your BMW i3” campaign, 180 employees were drawn at random from the numerous applicants and were given the opportunity to purchase the latest BMW i3 model at favourable conditions so they can complete their daily commute using electric power in future.

Hydropower: Electricity generated from hydropower protects the climate. At the same time, the use of hydropower also encroaches on nature. Therefore, EnBW is committed to harmonising hydropower with ecology. If power plants cause changes to the natural landscape, we compensate for these effects through ecological enhancement measures. For example, we ensure or improve the continuity of watercourses by constructing or optimising fish passes and fish ladders for fish to ascend or descend the river, such as at the small hydroelectric power plant in Maulburg. By constructing weir turbines, we

guarantee that there is a sufficient level of residual water and also ensure that this water is used for climate-friendly energy generation such as at the hydropower plants in Wyhlen and Ladenburg.

Conservation of biological diversity: EnBW initiated the programme “Stimuli for Diversity” for the protection of amphibian species together with the LUBW (Baden-Württemberg State Institute for the Environment) in 2011. Due to the major success of and positive response to the programme in the first five years, the funding programme was updated in 2016 and has since also included funding for protective measures for reptiles. The EnBW funding programme “Stimuli for Diversity” is part of the project “The economy and business for nature”, which is a component of the state initiative “Active for biological diversity”. It still remains the only conservation programme from a company both in Baden-Württemberg and nationwide that not only funds the protection of one single species but two whole groups of species across the state. In the reporting year, nine further projects were realised. More than 100 measures have been implemented in total across Baden-Württemberg since the start of the funding programme, which have successfully improved the living conditions for many endangered species in the state. EnBW will also continue the funding programme in 2019 based on this tried-and-tested method.

We also refer you to the details provided in the “Report on opportunities and risks” [p. 118 f.].

EnBW AG

The financial statements of EnBW AG have been prepared in accordance with the regulations in the German Commercial Code (HGB), the German Stock Corporation Act (AktG) and the law governing the electricity and gas industries in Germany (Energy Industry Act – EnWG). The regulations for large corporations apply.

The financial statements as audited by the KPMG AG Wirtschaftsprüfungsgesellschaft, Frankfurt am Main, as well as the management report of EnBW AG contained in the Group management report, will be published in the German Federal Gazette (Bundesanzeiger).

For statements that are necessary to understand the position of EnBW AG and which are not explicitly described in the following sections, especially those relating to the strategy of the company and economic and political conditions, please refer to the information provided for the EnBW Group (p. 48 ff. and 72 ff.). The full financial statements of EnBW AG are available for download at (www.enbw.com/report2018-downloads).

The annual net profit which indicates the company's ability to pay a dividend is an important performance indicator for EnBW AG.

Results of operations of EnBW AG

Condensed income statement of EnBW AG

in € million ¹	2018	2017	Change in %
Revenue	24,883.1	16,734.6	48.7
Cost of materials	-24,364.2	-15,969.4	52.6
Amortisation and depreciation	-458.1	-436.4	5.0
Other operating result	-502.6	1,228.7	-140.9
Earnings before interest and taxes	-441.8	1,557.5	-128.4
Financial result	-73.0	673.9	-111.4
Tax	-285.9	-241.7	18.3
Annual net loss/profit	-800.7	1,989.7	-140.4

¹ In accordance with German commercial law.

EnBW AG reports an annual net loss of €800.7 million. The substantial decrease in comparison to the previous year was mainly influenced by €1,999.3 million lower earnings before interest and taxes and the decrease in the financial result of €746.9 million.

The operating result of EnBW AG is primarily determined by the revenues generated from electricity and gas sales, as well as by the associated cost of materials.

In the earnings before interest and taxes, the increase in revenue of €8,148.5 million was offset by an increase in the cost of materials of €8,394.8 million.

The revenue (after the deduction of electricity and energy taxes) of €24,883.1 million primarily includes revenue from electricity sales of €11,904.0 million and from gas sales of €11,771.5 million. Electricity and gas sales comprise both the trading business, involving deliveries to trading partners and stock exchanges, and sales activities in the form of the direct delivery of energy to end customers.

As a result of the significant expansion in trading activities in 2018, the trading business recorded an increase in revenue of

€8,042.6 million to €21,780.3 million. This effect was further strengthened by increasing prices on the energy markets. However, the increase in revenue was also offset by the increase in the cost of materials of €8,177.5 million to €21,207.5 million.

Revenues from sales activities were split into €1,746.0 million for electricity and €189.6 million for gas, which represented an overall drop of €128.5 million.

In the retail and end customer sector (B2C), electricity sales were below the level in the previous year, decreasing by 0.3 billion kWh to 6.9 billion kWh, which was also reflected in the fall in revenue. This was due to, amongst other things, increasing energy efficiency and a slight fall in the contract portfolio. Gas sales of 3.9 billion kWh in the same period were 0.1 billion kWh higher than in the previous year due to the increasing number of contracts. Revenue was thus at around the same level as in the previous year.

Due to the closure of the commodity sales business at a subsidiary, the reserve supply held for B2B customers and the internal supply contracts held within the Group were transferred to EnBW AG. The sales to business customers (B2B)

in the electricity business stood at 0.8 billion kWh as a result and were 0.7 billion kWh above the figure in the previous year. Gas sales in the B2B sector increased in the same period by 0.1 billion kWh to 0.3 billion kWh.

The cost of materials includes costs for electricity procurement of €10,507.8 million and costs for gas procurement of €11,600.4 million.

Alongside scheduled amortisation and depreciation, the amortisation and depreciation item includes impairment losses of €90.4 million.

The considerable decrease in the other operating result was primarily attributable to the positive extraordinary effect in the previous year of the reimbursement of the nuclear fuel rod tax. The share attributable to EnBW AG was €1,340.0 million. Other important effects in the 2018 financial year were lower earnings

from reversals of impairments of €132.5 million and lower earnings from the disposal of assets of €192.6 million in comparison to the previous year.

The negative development of the financial result was mainly influenced by special dividend payments received from funds in the previous year of €364.0 million, higher impairment losses on financial assets of €98.8 million and higher interest expenses for pension provisions of €219.2 million. This mainly includes higher accretion of the provisions of €59.1 million and lower valuation effects within the Contractual Trust Arrangement (CTA) of €144.0 million in comparison to the previous year.

The tax expense in the 2018 financial year was €285.9 million, which represents an increase of €44.2 million. The taxes mainly comprise allocations to the provisions for tax audit risks. The option of recognising a surplus of deferred tax assets was not exercised.

Net assets of EnBW AG

Balance sheet of EnBW AG

in € million ¹	31/12/2018	31/12/2017	Change in %
Assets			
Non-current assets			
Intangible assets	635.4	762.2	-16.6
Property, plant and equipment	1,248.4	1,385.3	-9.9
Financial assets	20,130.5	19,558.1	2.9
	22,014.3	21,705.6	1.4
Current assets			
Inventories	446.7	594.9	-24.9
Receivables and other assets	3,336.4	3,123.1	6.8
Securities	119.2	114.3	4.3
Cash and cash equivalents	628.1	1,655.7	-62.1
	4,530.4	5,488.0	-17.4
Prepaid expenses	1,226.3	545.0	125.0
Surplus from offsetting	268.1	266.1	0.8
	28,039.1	28,004.7	0.1
Equity and liabilities			
Equity			
Subscribed capital	708.1	708.1	0.0
Treasury shares	-14.7	-14.7	0.0
Issued capital	(693.4)	(693.4)	(0.0)
Capital reserve	776.0	776.0	0.0
Revenue reserves	1,872.5	2,124.5	-11.9
Retained earnings	279.1	963.2	-71.4
	3,621.0	4,557.1	-20.6
Extraordinary items	24.0	23.6	1.7
Provisions	11,032.4	10,965.9	0.6
Liabilities	12,414.7	12,044.4	3.1
Deferred income	947.0	413.7	128.9
	28,039.1	28,004.7	0.1

¹ In accordance with German commercial law.

The net assets of EnBW AG as of 31 December 2018 are significantly influenced by the non-current assets (particularly the financial assets), the receivables and other assets, as well as by cash and cash equivalents. These are primarily offset by non-current liabilities and provisions relating to nuclear power and for pensions and similar obligations.

Financial assets primarily consist of shares in affiliated entities to the amount of €13,463.3 million, securities in non-current assets to the amount of €2,751.7 million and equity investments to the amount of €1,914.0 million. The increase in financial assets of €572.4 million includes, on the one hand, shares in affiliated entities primarily as a result of payments into the capital reserve of EnBW Offshore 3 GmbH of €258.0 million and EnBW Renewables International GmbH of €82.7 million. In addition, loans to affiliated entities increased by €134.7 million in comparison to the previous year.

Trade receivables to the amount of €784.2 million mainly comprise receivables for trading activities and consumption accruals for electricity and gas deliveries not yet invoiced and were €587.2 million below the figure in the previous year.

The cash and cash equivalents of EnBW AG totalling €628.1 million mainly consist of bank deposits, which are invested as time deposits to the amount of €492.7 million. More details on the development of this item can be found under "Financial position of EnBW AG".

The provisions for pensions and similar obligations held by EnBW AG to the amount of €4,768.5 million combine obligations from the company pension scheme and other company agreements made by major subsidiaries and EnBW AG. The resulting annual expenses for retirement benefits are paid by the subsidiaries concerned in each case. The increase in the provisions for pensions and similar obligations of €504.5 million was mainly due to the effect of the further decrease in the discount rate as in the previous year. In addition, provisions relating to nuclear power of €3,921.3 million are disclosed, which arise due to public law obligations and requirements in the operating licences.

Of the liabilities totalling €12,414.7 million, €6,470.4 million have a residual term of more than one year. Overall, there are liabilities of €8,233.3 million to affiliated entities, which primarily result from intercompany settlement transactions within the framework of the centralised financial and liquidity management, as well as from loan agreements.

The increase in liabilities by €370.3 million was mainly due to the increase in other liabilities from margin payments of €362.9 million and to option premiums received of €70.9 million. This was offset by the repayment of a bank loan with a volume of €70.5 million.

Non-current liabilities exist to the amount of €2,622.0 million to EnBW International Finance B.V. as part of the Debt Issuance Programme (DIP) (Glossary, p. 152), to the amount of €1,992.6 million from the issuing of three hybrid bonds and to the amount of €668.2 million from loan agreements with credit institutions.

The aim is to cover the non-current pension and nuclear provisions with appropriate financial assets within an economically feasible time period. Overall, financial assets of €20,130.5 million are offset by long-term debt of €14,758.3 million.

The liquidity of EnBW AG on the reporting date guarantees the solvency of the company for the payment of current liabilities from the operating business.

Financial position of EnBW AG

In comparison to the reporting date in the previous year, the liquidity of EnBW AG decreased from €1,655.7 million by €1,027.6 million to €628.1 million.

The cash flows of EnBW AG fundamentally arise from both its own operating business and also those of its subsidiaries which balance payments received and made via the bank accounts of EnBW AG as part of the intercompany cash pooling system (Glossary, p. 152) within the framework of the central financing and liquidity management.

Important business transactions that had an effect on the financial position of EnBW AG in the financial year are summarised below:

An important liquidity-related business transaction in the reporting year was an investment in the area of renewable energies to the amount of €305.9 million.

Bonds issued by EnBW International Finance B.V. as part of the DIP with a total volume of €835.8 million were repaid on time by the company. This was offset by the issuing of a bond with a volume of €500.0 million and a commercial paper (Glossary, p. 152) with a volume of €250.0 million. The associated liability to EnBW International Finance B.V. changed accordingly.

Cash and cash equivalents of €219.1 million were used as collateral for trading transactions.

A total of €135.4 million was distributed to the shareholders of EnBW AG in dividends.

In the 2018 financial year, EnBW AG paid tax arrears for income tax from previous years (including the associated interest) in the amount of €131.3 million.

Overall assessment of the economic situation of EnBW AG and the development of EnBW AG

In our judgement, the development of the results of operations, financial position and net assets of EnBW AG as of 31 December 2018 is satisfactory after taking into account the effects described below that are not relevant to the ongoing management of the company. In the previous year, an annual net loss of €400 million was expected in 2018. The annual net loss for 2018 stands at €800.7 million and was significantly influenced by effects not relevant to the ongoing management of the company, which arose both at EnBW AG itself and also at its subsidiaries which had an impact on EnBW AG due to profit and loss transfer agreements.

The main effects not relevant to the ongoing management of the company were higher interest expenses for pension provisions and provisions relating to nuclear power totalling €571.5 million (€518.0 million of which is reported under interest expense of EnBW AG) resulting from the drop in the discount rate and were thus €33.5 million higher than expected. Furthermore, the allocations to the provisions relating to nuclear power, mainly due to the higher rate of increase of costs, of €284.0 million (of which €208.8 million was reported under the cost of materials of EnBW AG) had a negative effect and were €160.0 million higher than expected. Other negative effects arose from income taxes relating to other periods (mainly from tax audit risks) of €319.9 million, as well as impairment losses on financial assets of €104.3 million and on intangible assets and property, plant and equipment of €90.4 million. Further negative effects on earnings were the extension to the inspection of Block 2 of the Neckarwestheim nuclear power plant (GKN II) and the lower electricity generation from the run-of-river power plants as a result of low water levels caused by the unfavourable weather conditions.

These were mainly offset by the reversal of provisions for onerous contracts of €278.0 million and the reversal of impairment losses on property, plant and equipment and financial assets of €190.2 million.

Based on an annual net loss of €800.7 million and taking account of the profit carried forward of €827.8 million and the withdrawals from other revenue reserves of €252.0 million, retained earnings amounted to €279.1 million.

We anticipate an annual net profit of around €200 million in 2019. The net result for the year will be negatively influenced by high interest expenses for non-current provisions. As a result of the low-interest phase, the average interest rate will fall further in the future. In 2019, we expect a negative impact on earnings due to effects not relevant to the ongoing management of the company of between €500 million and €600 million overall. These negative impacts on earnings will be offset by expected positive effects on earnings that are not relevant to the ongoing management of the company of €500 million. Adjusted for

these effects, the annual net profit will be between €200 million and €300 million. The amount from the valuation of the provisions for pension obligations and the valuation of the dedicated financial assets (Glossary, p. 152) in the CTA that is ineligible for distribution as dividends will stand at around €850 million by 31 December 2019. In 2020 and 2021, we expect the negative impacts on earnings due to the falling average interest rate to lessen.

Opportunities and risks

As the business performance, economic situation and opportunities and risks relating to the future development of EnBW AG do not deviate from the business performance, economic situation and opportunities and risks relating to the future development of the EnBW Group, the management report of EnBW AG is combined with that of the EnBW Group (p. 114 ff.).

Comments on reporting

The consolidated financial statements of EnBW AG are prepared in accordance with section 315 e (1) HGB using the International Financial Reporting Standards (IFRS) set by the International Accounting Standards Board (IASB), the adoption of which is mandatory in the EU as of the reporting date. As a vertically integrated energy company in the sense of EnWG, EnBW AG engages in other activities within the electricity sector, other activities within the gas sector and other activities outside of the electricity and gas sectors in accordance with section 6 b (3) sentence 3 and sentence 4 EnWG.

EnBW share and dividend policy

As a result of the small proportion of EnBW shares in free float (www.enbw.com/shareholder-structure), events on the financial markets and the development of the DAX generally only have a very minor influence on the development of the EnBW share price. The price of EnBW shares was €28.80 at the start of 2018 and stood at €29.20 by the end of the year (www.enbw.com/stock-chart).

The trust placed in EnBW by capital market participants is based on the value generated by the company. Against this background, EnBW pursues the aim of disclosing a positive internal financing capability and refraining from building up any additional net financial debt. The size of the dividend is thus also based on the amount of net investment and the retained cash flow, whereby EnBW strives to generally pay out between 40% and 60% of adjusted Group net profit. Based on the annual net loss of EnBW AG of €800.7 million and taking account of the profit carried forward of €827.8 million and the withdrawals from other revenue reserves of €252.0 million, there are retained earnings of €279.1 million for the financial year and thus dividends will be paid for the 2018 financial year. If approved by the Annual General Meeting, the dividend to be distributed for the 2018 financial year will be €0.65 per share.

Overall assessment of the economic situation of the Group

The energy sector in Germany has been experiencing profound change since 2012 due to the Energiewende. The share of electricity generation accounted for by renewable energies is increasing, driven by regulatory funding mechanisms, the trend towards decentralisation and technological advances. Nuclear electricity generation will cease by 2022. The use of fossil fuels, above all brown coal and hard coal, is currently the subject of intense political debate. Another driver of change in the energy sector are new patterns of demand amongst customers due to an increasing desire for autonomy and sustainability, as well as falling energy consumption due to improved energy efficiency. The energy landscape is becoming increasingly interconnected with other economic sectors, such as in the area of electromobility. As a consequence, energy supply companies require new business models and the revitalisation of their corporate cultures.

EnBW is well on track in its EnBW 2020 strategy to once again achieve the same level of earnings in 2020 as in 2012 – although on the basis of a realigned business portfolio. EnBW confirmed in 2018 that it had turned the corner in terms of earnings and achieved other important steps along the way to achieving the targets in the 2020 strategy.

The operating business of the EnBW Group generally developed in 2018 as expected and forecast at the start of the year. The adjusted EBITDA of the EnBW Group increased by 2.1% in comparison to the previous year. An important positive effect was the full consolidation of VNG in the second quarter of 2017, which had an impact on almost all of the segments. Adjusted for the effects of changes in the consolidated companies, the adjusted EBITDA of the EnBW Group would have stood at almost the same level as in the previous year (-0.4%). The result in the Sales segment developed negatively in the reporting year. The improved result in the Grids segment was mainly attributable to the full consolidation of VNG. In addition, there were higher earnings from the use of the electricity grids. The lower result in the Renewable Energies segment in comparison to the previous year was mainly due to the unfavourable weather conditions. The result in the Generation and Trading segment developed better than expected. This was primarily attributable to positive out-of-period earnings due to the clarification of open issues relating to electricity procurement agreements. In total, the Grids and Renewable Energies segments contributed around two thirds of the adjusted EBITDA of EnBW.

The non-operating result, which includes effects not relevant to the ongoing management of the company, decreased considerably in 2018 in comparison to the previous year. The reason for this development was a series of positive extraordinary items, such as the reimbursement of the nuclear fuel rod tax, in 2017.

In total, these developments – together with the changes in the investment result, financial result and income taxes – resulted in a Group net profit attributable to EnBW shareholders for the 2018 financial year of €334.2 million. In the previous year, the Group net profit attributable to EnBW shareholders was €2,054.1 million. Earnings per share thus fell from €7.58 in the previous year to €1.23 in 2018.

The financial position of the company remains sound. The solvency of the EnBW Group was ensured at all times throughout the 2018 financial year thanks to the company's available liquidity and the external sources available for financing. In October 2018, EnBW issued its first green bond (Glossary, p. 153) with a volume of €500 million that was very well received on the market. The key performance indicator internal financing capability stood at 93.2% in 2018 and was slightly below the target value of $\geq 100\%$ due to a decrease in adjusted retained cash flow. The fall in the key performance indicator ROCE was mainly due to the increase in the average capital employed.

In the customers and society goal dimension, the Reputation Index of EnBW fell slightly in 2018 in comparison to the previous year, which was partly due to the reduced media presence of the themes relevant to EnBW. The satisfaction of the customers of EnBW and Yello remained at a good level but fell in 2018 due to the general trend in the sector, as well as to specific measures such as a price adjustment and a system migration. Supply reliability also remained at a similarly high level in 2018. In the employees goal dimension, the Employee Commitment Index rose due to the improved perception of the current competitiveness of EnBW and employees having greater trust in the future viability of the Group. Occupational safety noticeably improved once again at EnBW in 2018, which was demonstrated by a fall in the LTIF. In the environment goal dimension, the expansion of renewable energies is continuing according to plan. However, the CO₂ intensity (Glossary, p. 152) of own generation of electricity only fell slightly because the generation from renewable energies was impacted by the unfavourable weather conditions.

In the estimation of the Board of Management, the operating business of the EnBW Group developed satisfactorily in 2018. Overall, the operating results increased as expected, although there were deviations from the forecast in individual segments. EnBW is also generally on course in the non-financial goal dimensions. The goals being pursued by EnBW in the 2020 strategy will be achieved with a very high degree of probability.

Forecast

In our forecast we take a look, as far as possible, at the expected future growth and development of EnBW in the years 2019 to 2021.

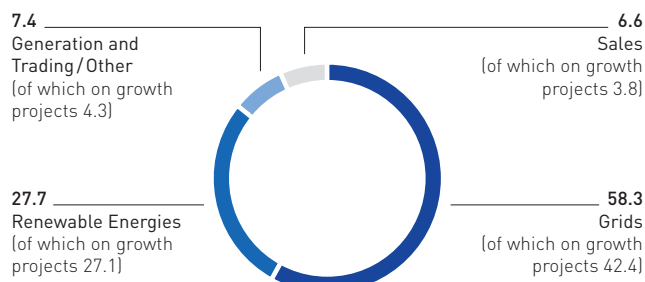
The expected economic, political and regulatory conditions are presented in the chapter “General conditions” (p. 72 ff.). Potential factors influencing the forecast are described in detail in the report on opportunities and risks” (p. 114 ff.).

Expected trends in the finance and strategy goal dimensions

Investment over a three-year period

In order to continue to play an active role in shaping the Energiewende, **total investment** of €6.4 billion is planned for the 2019 to 2021 period. This represents on average €2.1 billion per year. Some €1.4 billion (22%) of this investment will be on existing projects and €5.0 billion (78%) on growth projects. The majority of the total investment will be made in the regulated business (Renewable Energies and Grids).

Total investment 2019–2021
in %



Around 58% of the investment will flow into the **Grids** segment, of which around 42% will be for growth projects and 16% for existing projects. In order to make the transport of renewable energies from the north to the south of Germany possible, funds have been allocated to the transmission grid for the realisation of two HVDC projects ULTRANET and SuedLink that involve our subsidiary TransnetBW and are part of the Network Development Plan (Glossary, p. 154). In addition, extensive investment in the expansion and upgrading of the existing grids is planned.

Around 28% of the total investment will be attributable to the **Renewable Energies** segment – of which 27% will be for growth investment. This includes funds for the realisation of the offshore wind farms EnBW Hohe See and EnBW Albatros with a total output of 609 MW, which should be placed into operation in 2019. In addition, funds have been allocated for the construction of onshore wind farms to achieve the 1,000 MW target by 2020 and for solar parks from our comprehensive project pipeline (p. 50).

Around 7% of the investment will be attributable to the **Sales** segment, split about 50/50 between growth and existing investment. The growth investment is mainly intended for the expansion of electromobility, as well as for the development of energy solutions.

Around 7% of the total investment will be attributable to the **Generation and Trading** segment and **Other**. Growth investment will account for a little more than half of this amount. This mainly comprises investment relating to the invitation to tender for special technical equipment for grids.

This investment programme of the EnBW Group thus reflects our strategy for expanding renewable energies and ensuring security of supply in the regulated areas of the transmission and distribution grids.

It is expected that the target set in the EnBW 2020 strategy of making gross investment of around €14 billion in the period 2012 to 2020 (based on the reference year of 2012) will be exceeded by around €2 billion (p. 49).

In order to finance the entire investment volume of around €6.4 billion, **divestitures** amounting to almost €1 billion are planned in the years 2019 to 2021. This includes divestitures in the onshore sector, which will build on our already realised participation models. The remaining divestitures will involve the receipt of construction cost subsidies and the disposal of the remaining minority share in EWE.

It is expected that the target set in the EnBW 2020 strategy of €5.1 billion in divestitures (based on the reference year of 2012) will be slightly exceeded because divestitures of around €4.4 billion were already realised by the end of 2018 and divestitures of almost €1 billion are still planned (p. 49).

The balance from gross investment and divestitures gives the **net investment**, which is €5.4 billion or €1.8 billion on average per year. The net investment will be fully financed from the company's own funds.

TOP Adjusted EBITDA and the TOP share of adjusted EBITDA accounted for by the segments

Development in 2019 (adjusted EBITDA and the share of adjusted EBITDA accounted for by the segments) compared to the previous year

	Earnings performance (adjusted EBITDA) compared to the previous year		Development of the share of adjusted EBITDA for the EnBW Group accounted for by the segments	
	2019	2018	2019	2018
Sales	€225 to €300 million	€270.6 million	5% to 15%	12.5%
Grids	€1,300 to €1,400 million	€1,176.9 million	50% to 60%	54.5%
Renewable Energies	€425 to €500 million	€297.7 million	15% to 25%	13.8%
Generation and Trading	€350 to €425 million	€428.6 million	10% to 20%	19.9%
Other/Consolidation		€-16.3 million		-0.7%
Adjusted EBITDA, Group	€2,350 to €2,500 million	€2,157.5 million		100.0%

The presentation of the earnings performance (adjusted EBITDA) has been adjusted compared to the previous year to focus on the ongoing transformation of the portfolio at EnBW to a greater extent. The forecasted range for the earnings performance will now be presented in € million instead of as a percentage change.

In the **Sales** segment, we expect earnings in 2019 at the same level as in the previous year. Therefore, we expect a stable share of the adjusted EBITDA for the Group accounted for by this segment.

The adjusted EBITDA for the **Grids** segment will increase further in 2019. It will thus continue to be the segment with the highest earnings. In comparison to the previous year, we expect higher revenue from the use of the grids as we start to see returns on the increased investment activity in projects that are included in the Network Development Plan Electricity and Network Development Plan Gas. The share of the adjusted EBITDA for the Group accounted for by this segment is expected to remain stable.

The adjusted EBITDA for the **Renewable Energies** segment will increase significantly in 2019. In the offshore wind sector, this will be due to the planned commissioning of our offshore wind farms EnBW Hohe See and EnBW Albatros. In addition, the expansion and acquisition of onshore wind farms in 2018 and those planned in 2019, including in Sweden, will make a positive contribution to earnings. The forecast for the volume of electricity generated by the run-of-river power plants is based on the long-term average water levels. The wind-yield forecasts are also based on the long-term average. As 2018 was negatively influenced by poor wind conditions and low water levels, we expect a significantly higher result in 2019 in comparison to the previous year. We expect an increase in the share of the adjusted EBITDA for the Group accounted for by this segment.

The adjusted EBITDA for the **Generation and Trading** segment in 2019 is not expected to exceed the figure achieved in the previous year. In comparison to the previous year, we anticipate lower out-of-period earnings which will mainly be attributable to the clarification of open issues relating to electricity procurement agreements that were recognised through profit or loss in 2018. The loss of the earnings contribution made by VNG Norge AS and its subsidiary VNG Danmark ApS due to their sale

in 2018 will also result in a fall in earnings. This will be offset to some extent by the fact that negative effect of the extension to the inspection of Block 2 of the Neckarwestheim nuclear power plant (GKN II) in 2018 has come to an end. We expect a slight decrease in the share of the adjusted EBITDA for the Group accounted for by this segment.

The **adjusted EBITDA** for the EnBW Group in 2019 will increase further and be between €2,350 million and €2,500 million. This will be due primarily to the areas of growth in the Grids and Renewable Energies segments. In addition, we anticipate that our efficiency target will be achieved early in 2019 with an effect to the amount of €650 million. We also expect a further increase in adjusted EBITDA for the Group in 2020, which will be supported above all by the year-round earnings contribution from the EnBW Hohe See and EnBW Albatros offshore wind farms. This means that we will not only achieve the strategic target for adjusted EBITDA in 2020 of €2.4 billion, but we even expect to exceed it.

The **EBITDA** in 2019 and 2020 will develop in line with the adjusted EBITDA. We do not make any forecasts relating to material non-operating effects.

The **EBT** relevant to remuneration will be between €850 to €950 million in 2019 as a result of the rise in adjusted EBITDA and will thus increase substantially in comparison to the previous year. A further increase in EBT is expected in 2020. The accuracy of the forecast for EBT is, however, still dependent on other exogenous factors that cannot be planned for, such as impairment losses, the reversal of impairment losses or impending losses for onerous contracts for electricity procurement agreements.

Assuming an adjusted EBITDA in the range of €2,350 million to €2,500 million, we expect to achieve an adjusted **retained cash flow** (p. 89) of between €1.3 billion and €1.4 billion. This includes an increase of €245 million from the reimbursement of the nuclear fuel rod tax. Adjusted for this effect and the anticipated dividend payment of around €320 million (including payments from investments to third parties), we expect an FFO of between €1.4 billion and €1.5 billion despite high income tax payments. A further increase in the adjusted retained cash flow is expected in 2020, which will be primarily attributable to the expected increase in the adjusted EBITDA.

TOP Internal financing capability**Key performance indicator**

	2019	2018
Internal financing capability in %	≥ 85	93.2

The internal financing capability will, as communicated, lie above 100% for the whole period from 2017 to 2020. However, it is possible that the internal financing capability may fall below 100% temporarily in individual years. We expect an internal financing capability in 2019 of ≥ 85% due to the fact that the fast growing investment volume for our EnBW Hohe See and EnBW Albatros offshore wind farms and for projects contained in the network development plans will only be partially covered by the increasing adjusted EBITDA. As things currently stand, we expect an internal financing capability of ≥ 100% once again in 2020.

TOP ROCE**Key performance indicator**

	2019	2018
ROCE in %	6.0–7.0	6.5

In the 2019 financial year, ROCE is expected to remain at the same level as in the previous year and thus be between 6.0% and 7.0%. In general, investments tend to lead at first to a fall in ROCE due to a low initial contribution to earnings. In accordance with our strategy, we also expect a high volume of investment with a further increase in earnings in subsequent years. After the commissioning of our offshore wind farms EnBW Hohe See and EnBW Albatros, we expect the ROCE to start increasing again from 2020. An increasing adjusted EBIT due to the growth in the adjusted EBITDA will be offset by a significantly higher capital employed due to planned investment.

The **ROA** will develop in line with the ROCE. In 2019, the ROA is expected to be between 4.5% and 5.5%, while we anticipate that it will increase in 2020 compared to 2019 as things currently stand.

Expected trends in the customers and society goal dimension

Key performance indicators

	2019	2018
Reputation Index	54.1	51.3
Customer Satisfaction Index for EnBW/Yello	114–141/148–159	120/152
SAIDI (electricity) in min./year	15–20	17

TOP Reputation Index

EnBW will strive to noticeably improve its reputation continuously over the next few years, even if a decrease was recorded in 2018. The Reputation Index is an important non-financial performance indicator because this index value is influenced by a whole series of factors that are important to the future viability of our company. The existing reputation management department and the stakeholder team at EnBW that was newly established in 2017 recommend measures for optimising the reputation of the company.

TOP Customer Satisfaction Index

We continue to expect a high level of competitive pressure in 2019 both from direct competitors within the energy industry and to an increasing extent competitors from other sectors that have already entered the energy market or will do so shortly. In addition, exogenous factors could negatively impact customer satisfaction more and more in the future, such as discussions about the future of coal-fired power generation, the development of state levies, increasing costs or delays to the expansion of the grids. To improve the satisfaction of our customers, we are thus also expanding our range of sustainable energy industry services and energy solutions and targeting our sales activities in this direction in 2019. We will combine traditional energy products (electricity and gas) with more household and energy-related products in future, to offer our customers a range of “ecosystem solutions”. Using our new digital skills, we will continue to create up-to-date, convincing and tailor-made customer experiences of the highest quality. On this basis, we are striving to achieve an index value of between 114 and 141 points in the 2019 financial year.

We also want to maintain the satisfaction of Yello customers at a high level in 2019. Following the successfully completed system migration in 2018, Yello has further expanded its range of digital services and will be able to align the product portfolio even better to the requirements of its customers in future. In addition, Yello has had a new marketing campaign both on TV and online since January 2019. On this basis, we are striving to achieve an index value of between 148 and 159 points in the 2019 financial year.

TOP SAIDI

The grid subsidiaries of EnBW have always ensured a highly reliable supply throughout their grid area and for their customers. The corresponding key performance indicator SAIDI, which states the average duration of supply interruptions per connected customer per year, stood at 17 minutes in 2018. We are striving to achieve a value of between 15 and 20 minutes in the 2019 financial year and subsequent years.

Expected trends in the employees goal dimension

Key performance indicators

	2019	2018
Employee Commitment Index (ECI) ¹	63	62
LTIF ²	< 3.7 ³	2.3

- 1 Variations in the group of consolidated companies (consideration of companies controlled by the Group [without ITOs]).
- 2 Variations in the group of consolidated companies (consideration of all employees at those companies controlled by the Group, except external agency workers and contractors).
- 3 Three-year target for 2017, 2018 and 2019.

TOP Employee Commitment Index

The Employee Commitment Index (ECI) increased from 60 to 62 points in 2018. The implementation of the 2020 strategy is well on track and the perception of the competitiveness and future viability of the Group has significantly improved once again. Overall, employee commitment is at a very satisfactory level. Therefore, EnBW has set itself the target of maintaining this level in 2019 and further increasing the ECI to 63 points.

TOP LTIF

Our goal is to continuously improve occupational safety within the company for both our own and third-party employees. Therefore, EnBW has implemented numerous accident prevention measures. In 2019, we are striving to once again keep the value for this key performance indicator for occupational safety below the three-year target. The main focus will be placed on the roll-out of the new Quentic software and a heightened awareness for unsafe situations and conditions. Consistent reporting of these types of occurrences and communication amongst employees about hazardous situations will help EnBW to increase the awareness of employees. EnBW intends to lower the LTIF in small steps in the long term.

Further significant developments

In view of the difficult conditions, it will be important over the coming years to realise further improvements in efficiency across the entire company. There will be a moderate increase in the number of employees in the Renewable Energies and Grids segments as part of the repositioning of our business portfolio. This will be offset by further measures to optimise processes across the entire company with a focus on the functional units, sales and operations of EnBW AG and in the area of thermal power plants.

Expected trends in the environment goal dimension

Key performance indicators

	2019	2018
Installed output of RE in GW and the share of the generation capacity accounted for by RE in %	4.4–4.5/31–32	3.7/27.9
CO ₂ intensity in g/kWh	-10% to 0%	553

TOP Installed output of renewable energies (RE) and the share of the generation capacity accounted for by RE

The installed output of renewable energies in 2019 is expected to increase by between 700 and 800 MW, primarily as a result of the commissioning of the EnBW Hohe See (497 MW) and EnBW Albatros (112 MW) offshore wind farms in the North Sea. As a result, the share of the generation capacity of the Group accounted for by renewable energies will increase appreciably. In subsequent years, we also expect a continuous increase in the installed output of renewable energies. This will also increase the share of the generation capacity accounted for by RE further.

TOP CO₂ intensity

In 2019, we expect an increase in own electricity generation from renewable energy sources due to the further expansion of renewable energies. We also expect the continued good availability of our highly efficient hard coal power plants this year. Important factors for uncertainty in the 2019 forecast include the volatility of the wind and water supplies, the further development of the clean dark spread (Glossary, p. 152) and the utilisation of the power plants for redispatch. We anticipate a positive development overall and expect a reduction in the CO₂ intensity (Glossary, p. 152) of between -10% and 0% in 2019 in comparison to the 2018 reporting year. In the next few years, we expect that the CO₂ intensity will continue to reduce gradually.


















Overall assessment of anticipated developments by the management


We expect an increase in adjusted EBITDA for the Group in 2019 compared to 2018. The shift in earnings between the segments laid out in our strategy will continue in 2019. We are well on the way to achieving our 2020 targets at a Group and segment level. We are adhering to the implementation of our divestiture programme and are able to continue to make sufficient investment funds available to enable us to play an active role in shaping the Energiewende. This also supports our aim to maintain a solid investment-grade rating (Glossary, p. 154). With respect to our non-financial key performance indicators, we expect a stable to positive development in 2019 towards our 2020 targets.

Report on opportunities and risks

Principles of the integrated opportunity and risk management system

Opportunity and risk map

Strategic/sustainability		Operative			Financial		Compliance
Strategy	Sustainability	Business activity	Infrastructure	Implementa- tion of growth fields	Financial management	Corporate financing	Compliance
Sustainable generation structure  	Climate change  	Business processes	Plants/grids/ storage/IT	Renewable Energies  	Market prices	Capital market	Corruption 
Market developments/ social trends 	Environmental protection 	Operating activities	Information security/ confidentiality	Gas/biogas business	Liquidity management	Rating	Antitrust law
System critical infrastructure	Weather/ natural events 	Products/ contracts	Crime/ sabotage/ terrorism	E-mobility/ digitalisation	Earnings management		Data protection
Smart infra- structure for customers	Personnel 	Operational projects		Expansion of the grids	Investment management		Fraud
	Occupational safety/health protection 	Approvals/ licences/ patents					Taxes and levies
	Human rights 	Legislation/ regulation/ litigation 					
	Social issues 						
	Reputation  						

 Task Force on Climate-related Financial Disclosures (TCFD)  Corporate social responsibility (CSR)

The integrated opportunity and risk management system (iRM) of EnBW is based on the internationally established COSO II framework as a standard for risk management systems that span entire companies. The iRM aims, through a holistic and integrated approach, to effectively and efficiently identify, evaluate and manage opportunities and risks (including monitoring) and report on the opportunity/risk position, as well as to ensure the appropriateness and functionality of related processes. Risk management involves measures for avoiding, reducing or transferring risk through adequate accounting provisions, as well as measures for managing risk tolerance. For

this purpose, EnBW defines an opportunity/risk as an event that might cause a potential over-attainment/non-attainment of strategic/sustainability, operational, financial and compliance goals in the future. The iRM process also takes into account the guidelines for a non-financial declaration. In order to identify and categorise opportunities and risks, the opportunity and risk map that is anchored throughout the Group is utilised. The risk map is used to explicitly consider possible opportunities and risks that affect the sustainable orientation of EnBW. As well as focusing on the fulfilment of the requirements for a non-financial declaration, the recommendations of the Task Force on

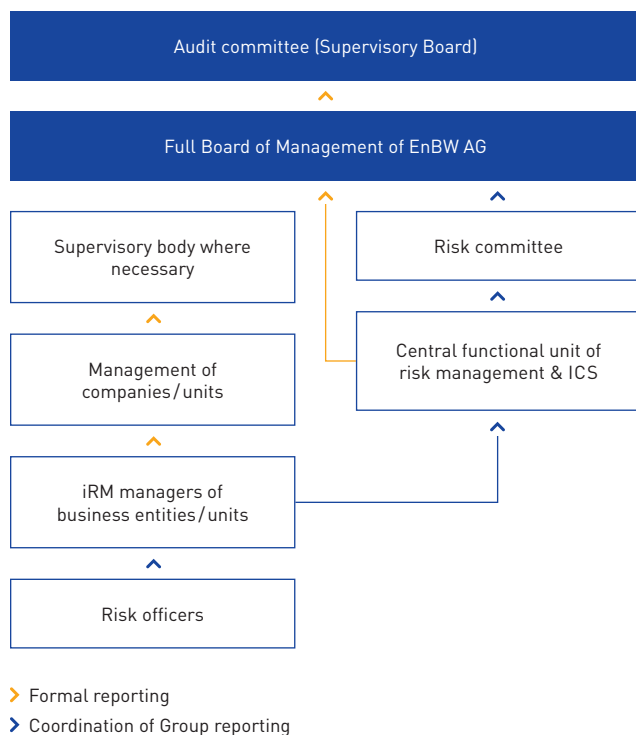
Climate-related Financial Disclosures (TCFD) (Glossary, p. 155) were also taken into account. In addition, the efficiency of the entire iRM processes and reporting was increased further. Amongst other things, this involved further improving the technical aspects of reporting and optimising the process for identifying and evaluating opportunities/risks. In addition, the iRM process was also subject to ongoing development within the scope of digitalisation.

Structure and processes of the integrated opportunity and risk management system

The structures and processes of the iRM are anchored throughout the Group in all relevant business entities, business units and functional units. The central risk management & ICS functional unit is responsible for specifying methods, processes and systems for the whole Group, determining the opportunity and risk position of the Group and for reporting. The central steering body is the risk committee, which – with the involvement of specially selected business units/entities – is responsible for clarifying relevant issues from various Group perspectives, as well as for determining the top opportunities/risks.

The iRM is regularly checked by the Group auditing department and the results of the audit are presented to the Supervisory Board.

Structure and processes of the iRM system



For the purposes of evaluation, all opportunities and risks are firstly assessed with the help of the iRM relevance filter before and after consideration has been taken of both implemented

and envisaged management instruments. The relevance class is determined in each case based on quantitative and qualitative criteria for each of the four dimensions: strategic/sustainability, operational, financial and compliance.

The opportunities and risks allocated to relevance class 5 or higher and with a probability of occurrence of over 50% are generally included in the Group report on opportunities and risks. Insofar as a financial evaluation is possible, this corresponds to a value of €50 million within the medium-term planning period. Long-term opportunities and risks that are of particular importance are then added. The reports are submitted on a quarterly basis in standardised form. In the case of any significant changes, a special report is immediately issued.

The probability of occurrence is split into six levels:

iRM levels for the probability of occurrence	
Description	Level for the probability of occurrence
Very low	0% to 10%
Low	> 10% to 30%
Medium	> 30% to 50%
High	> 50% to 70%
Very high	> 70% to 90%
Almost certain	> 90% to 100%

Those opportunities or risks relevant to the Group report on opportunities and risks are generally evaluated in relation to the current planning period using quantitative methods (e.g. scenario techniques and distribution functions) for the purpose of stochastic modelling. Any possible effects on the adjusted EBITDA, the adjusted EBIT and the capital employed (with any associated impact on the ROCE), the retained cash flow or the adjusted retained cash flow and net investment (with any associated impact on the internal financing capability) are considered. Alongside these financial effects, opportunities and risks can also have impacts on the other key performance indicators (p. 51 ff.), which are discussed with those responsible in the specialist areas.

Any opportunities and risks with a probability of occurrence of up to 50% are subject to an individual review to determine whether they should be taken into account in the next planning session. Opportunities and risks with a probability of occurrence of over 50% are generally taken into account in the planning process and, as far as possible, appropriate accounting measures are taken in the consolidated financial statements in accordance with IFRS.

Alongside the top opportunities/risks, there are a wide variety of other opportunities and risks facing the Group that are allocated to relevant risk categories on the opportunity and risk map (p. 114) and evaluated with the aid of the iRM relevance filter. Alongside the key performance indicators in the finance and strategy goal dimensions, these effects can also have an impact on the key performance indicators in the customers and society, employees and environment goal dimensions. Any impact on the areas of compliance, social engagement and procurement is also examined in the process.

Relevance filter for classifying opportunities and risks

Strategic/sustainability	Operative	Financial	Compliance	Reporting level
Achievement of strategic targets, sustainability targets, e.g. climate protection, environmental protection, reputation	Achievement of business targets, functional processes, retaining added value, customer/external effects	Achievement of financial targets, generally in accordance with medium-term planning or approved (project) budgets	Compliance with legal /official regulations and internal regulations	Reporting level
Company, business and functional unit				
Relevance class 0				
None	None	None	None	
Relevance class 1				
No relevant impact on the achievement of strategic/ sustainability targets	<ul style="list-style-type: none">One operational target for an internal department/area is not achievedShort-term negative impact on a relevant process without a material effect on the maintenance of operations	≤ €0.2 million	Breach of legal/official regulations and/or internal regulations with minor negative consequences for the department/area (trivial breaches)	
Relevance class 2				
The ability to achieve the strategic/sustainability targets of the company/ business units/functional units is negatively impacted	<ul style="list-style-type: none">Several operational targets for an internal department/area are not achievedShort-term negative impact on a relevant process with maintenance of operations negatively impacted	≥ €0.2 million (relevance threshold for small companies/ business units)	Breach of legal/official regulations and/or internal regulations with negative consequences for the department/area	
Relevance class 3				
One strategic/sustainability target for the company/ business units/functional units is not achieved	<ul style="list-style-type: none">One operational target for the company/business units/ functional units is not achievedLong-term negative impact on one/multiple relevant process(es) with maintenance of operations severely impacted	≥ €1 million (relevance threshold for medium-sized companies/business units)	Breach of legal/official regulations and/or internal regulations with negative consequences for the company/business units/ functional units	
Relevance class 4				
Several strategic/sustainability targets for the company/business units/ functional units are not achieved	<ul style="list-style-type: none">Several operational targets for the company/business units/ functional units are not achievedThe value added of the company/business units/functional units is massively disrupted	≥ €5 million (relevance threshold for large companies/ business units)	Breach of legal/official regulations and/or internal regulations with serious negative consequences for the company/business units/functional units	
Relevance class 5				
One strategic/sustainability target for the EnBW Group is not achieved	<ul style="list-style-type: none">One key operational target for the EnBW Group is not achievedThe value added is massively disrupted across the company/ business units/functional units	≥ €50 million (relevance threshold for functional units and EnBW Group)	Breach of legal/official regulations and/or internal regulations with negative consequences for the EnBW Group	
Relevance class 6				
Several or all strategic/ sustainability targets for the EnBW Group are not achieved	<ul style="list-style-type: none">Several or all operational targets for the EnBW Group are not achievedValue added throughout the whole Group is massively disrupted	≥ €250 million	Breach of legal/official regulations and/or internal regulations with serious negative consequences for the EnBW Group	Group

Non-financial declaration

As part of the non-financial declaration, EnBW closely analyses the opportunities and risks for compliance, social engagement, procurement, the customers and society goal dimension, the employees goal dimension and the environment goal dimension. In order to guarantee that the requirements for a non-financial declaration are fulfilled, the iRM established across the Group and the associated process are used. From relevance class 5 and a probability of occurrence of over 50%, opportunities and risks are also reported externally. In this context, the iRM also identifies opportunities and risks relating to climate protection and thus provides important impetus for the implementation of the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) (Glossary, p. 155). You can find further information on this subject on p. 136.

Structure and processes of the accounting-related internal control system

Principles

Alongside the internal control system (ICS) that is anchored within the company's business processes via the iRM, an accounting-related ICS was established at EnBW that is designed to ensure proper and reliable financial reporting. In order to guarantee that this ICS is effective, the appropriateness and functionality of the Group-wide control mechanisms are tested regularly at an individual business entity and Group level.

If any existing weaknesses are identified in the control system and are considered relevant to the financial statements, they are promptly remedied. This accounting-related ICS methodology is based on the COSO II standard – an internationally accepted framework for internal control systems.

Once the control mechanisms have reached a standardised and monitored degree of maturity, and no material control weaknesses can be identified, the accounting-related ICS is deemed to be effective. The materiality of control weaknesses is measured as the probability of occurrence and the extent to which there could be a potential misstatement in connection to those financial statement items concerned. The accounting-related risk management system defines measures for identifying and assessing risks that jeopardise the preparation of compliant financial statements as part of the accounting-related ICS.

Despite having established an ICS, there is no absolute certainty that it will attain its objectives or that it will be complete. In individual cases, the effectiveness of the ICS can be impaired by unforeseeable changes in the control environment, fraud or human error.

Structure

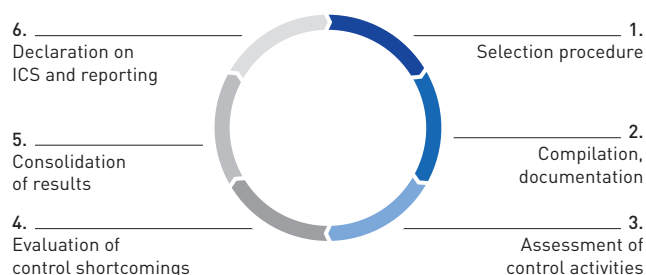
The accounting-related ICS at EnBW is organised at both a centralised and decentralised level. All important business entities, business units and functional units have an ICS officer. These officers monitor the effectiveness of the ICS and evaluate any control weaknesses that may arise. A report on the effectiveness of the ICS is prepared on an annual basis, which is approved by the management of the business entity or unit. The ICS officer at Group level assists the business entities/units with the implementation of standardised procedures and also consolidates collected data.

Processes

Standardised procedures ensure completeness and consistency in the preparation of the financial statements and financial reporting. The accounting-related ICS defines controls designed to ensure compliance with the accounting policies used by the Group, as well as procedures and deadlines for the individual accounting and consolidation processes. During the Group consolidation process, the rigorous implementation of the four-eye principle is observed, while random samples and deviation analyses improve quality. An annual control cycle monitors whether the documentation is up to date and also checks the appropriateness and functionality of the controls. In addition, it identifies and evaluates any control weaknesses that may arise.

A risk-based selection process defines relevant business entities/units, significant items in the financial statements and processes including their associated control measures. This selection process is based on quantitative and qualitative risk indicators.

Phases of accounting-related ICS



The defined processes and controls are recorded in a central documentation system. The effectiveness of the various control activities is then assessed. This includes analysing whether the control activities are generally appropriate for the purpose of reducing the risk of erroneous financial reporting. In addition, regular monitoring of the implementation of the controls and their documentation is carried out to review the functionality of the defined controls, as well as the operational effectiveness of the processes. If any control weaknesses are identified, their effect on the financial statements is evaluated. The results are reported at both a business entity or unit level and at a Group level. Furthermore, the Group auditing department performs ICS reviews as part of its risk-oriented audit planning.

Risks associated with the non-financial declaration

The non-financial declaration describes, amongst other things, the fundamental opportunities and risks connected with the EnBW business model and the activities based upon it that could have a possible impact on any individual issue. Material individual risks with a very high probability of a serious negative impact in relation to any of the following issues do not exist at EnBW.

Compliance

The observance of relevant legal regulations and internal company rules forms the basis of our business activities. Managing compliance risks at EnBW (with a main focus on corruption, antitrust and data protection risks) is the responsibility of the compliance management system, which comprises regular risk assessments of this type. Risks related to fighting corruption and bribery are addressed on p. 57 f. in a cross-segment manner.

Social engagement

There are no risks in the area of social engagement. In fact, we take our social responsibility for civic and social engagement seriously (p. 61 f.).

Procurement

Sustainable procurement – purchasing: In the area of procurement, risks cannot be excluded due to increasing levels of complexity and the large number of suppliers. Purchasing utilises an active risk management system, counters procurement risks and implements the necessary measures for safeguarding against and avoiding risk. These risks are managed using defined processes and, in this context, especially through the pre-qualification process (p. 69 f.).

Raw materials procurement – coal and gas: In the area of raw materials procurement and thus in the associated supply chain, there are above all potential human rights risks. Respect for human rights is ensured using a multi-stage auditing process as part of the procurement process – with all existing and potential suppliers being regularly subjected to a screening process. Other measures that form part of the assessment are carried out in direct cooperation with the compliance department. In coal mining, there are possible human rights risks related to the working and living conditions of people in the coal mining regions. Increasing civil society activity in this context can in turn increase reputational risks. EnBW is in constant contact with representatives from civil society and keeps them informed about the advances made and challenges faced in all sustainability topics (p. 70 f.).

In preparation for future (liquid) gas contracts, EnBW has carried out further preliminary human rights assessments as part of the audit of business partners. No material human rights risks were identified in the supply chain for the USA as a potential supply country, while further in-depth analyses may be required for other business partners.

Customers and society goal dimension

Reputation: All opportunities and risks, as well as non-financial issues, can have a positive or negative impact on reputation and thus on the key performance indicator Reputation Index (p. 94). The reputation management department thus identifies opportunities and risks related to reputation, develops measures to protect and improve reputation, advises the Board of Management and management and provides recommendations for action.

Customer proximity: Risks exist especially in connection with the still high level of competitive pressure both from direct competitors within the energy industry and, to an increasing extent, competitors from other sectors that have already entered the energy market or will do so shortly. This is associated with the risk of a negative impact on the customer base and sales volumes. Opportunities exist above all through the provision of a broader range of customer-specific products and services such as offering hardware bundles (Glossary, p. 152) and product options, as well as through processes more oriented to the customer. EnBW will also continue to expand its range of sustainable energy industry services and energy solutions in 2019 and will target its sales activities in this direction (p. 112).

Employees goal dimension

Employee commitment: Due to competition on the job market, there is a risk when recruiting employees that the company will not be able to secure a sufficient number of employees with the necessary qualifications and expertise in the relevant target groups. In addition, this risk is exacerbated by demographic trends and the stricter conditions facing the energy industry. We believe that regular anonymous employee surveys, from which we derive the Employee Commitment Index (ECI) as a key performance indicator, are an important tool for seizing opportunities early in the areas of employee development and employee loyalty (p. 96 ff.).

Occupational safety: Risks generally exist in the areas of occupational safety and health protection in our business activities. The EnBW Group counters these risks using comprehensive organisational and procedural measures, such as workplace-specific hazard analyses, to protect employees as well as possible against any adverse consequences. EnBW also views these measures as an opportunity to preserve the capacity of its employees to do their work and to maintain the position of EnBW as an attractive employer. Occupational safety is measured in the form of the key performance indicator LTIF within the employees goal dimension (p. 100 f.).

Environment goal dimension

Expansion of renewable energies: In relation to the expansion of renewable energies, there is a general risk posed by the auction process and thus the sluggish expansion of onshore wind power. Due to the fact that the auctions are held on equal terms, we continue to expect a high level of competition. We measure the expansion of renewable energies with our key performance indicator “installed output of renewable energies (RE) and the share of the generation capacity accounted for by RE” (p. 102).

Climate protection: Risks generally exist in the area of environmental protection due to the operation of power generation and transmission plants and the possible consequences for the air, water, soil and ozone layer. The importance of climate protection is taken into account in, amongst other things, the key performance indicator CO₂ intensity (Glossary, p. 152) (p. 103).

EnBW counters these risks using, amongst other things, an environmental management system certified according to DIN ISO 14001, which has been established at key subsidiaries (p. 101). EnBW takes the safety of the population and the protection of the environment very seriously. In this context, risks also exist due to external circumstances, such as extreme weather conditions. These risks are countered by EnBW using an emergency and crisis management system that has been implemented throughout the Group and includes comprehensive organisational and procedural measures. EnBW ensures that the risks posed by crisis and emergency situations are mitigated quickly, effectively and with a coordinated approach through the use of regular crisis management exercises and other measures. Through its diverse range of activities in the areas of environmental, nature and species protection, EnBW also utilises the opportunity – beyond its core activities – to make a substantial contribution to improving environmental protection. Thanks to the positive public perception of these activities, they can also have a positive impact on our key performance indicator Reputation Index (p. 94).

At the same time, EnBW also faces potential risks due to the ongoing process of climate change. For example, more frequent extreme weather conditions leading to highly fluctuating water levels or limits being placed on emissions locally could have an especially negative impact on the operation of power plants and

thus the security of supply (electricity grids). The operation of hydropower plants can be restricted by both a lack of or also an abundance of water. The output from thermal power plants that must be cooled could possibly be impacted by temperature limits on discharged water. Increasing volatility in the availability of wind, water and sun presents challenges in terms of planning certainty for the operation of power plants and the sale of volumes of electricity (p. 49 ff.). For this reason, the top opportunity/top risk wind fluctuations has been reported since the Integrated Annual Report 2016, although these opportunities/risks have no material effect on non-financial issues. In addition, there is uncertainty due to increasing environmental restrictions for the realisation of projects for sustainable energy generation and for the operation of power plants. These risks are managed and mitigated in internal processes using targeted control measures.

Alongside changes in physical climate parameters and other developments relating to or governed by environmental factors, regulatory guidelines and changes in the market also flow into the risk evaluation process. However, there are also opportunities such as changing customer needs (p. 94 ff.) and an increasing demand for climate-friendly products such as e-mobility. These opportunities and risks are regularly and systematically identified Group-wide. The first recommendations from the Task Force on Climate-related Financial Disclosures (TCFD) (Glossary, p. 155) have been implemented and are communicated in the report on opportunities and risks. Building on the revision of the risk map in 2016, special focus will be placed on sustainability aspects – especially climate protection targets – and they will be anchored more deeply in the risk evaluation process in future.

Opportunity and risk position

Top opportunities/risks as of 31/12/2018



The diagram illustrates how the opportunity and risk position is reported to the Board of Management and the audit committee of the Supervisory Board. The arrangement of the top opportunities/risks in the quadrants indicates whether EnBW can employ control measures to exploit the opportunities or to counteract the risks.

On the basis of the individual evaluation of the top opportunities/risks, it is clear – based on the relative level of opportunity/risk – what effects they could likely have on the adjusted EBITDA, adjusted EBIT, capital employed, retained cash flow or adjusted retained cash flow and net investment. The risks are depicted after the implementation of the risk limitation measures.

No new material opportunities and risks emerged in 2018.

Details on the top opportunities/risks, as well as other opportunities/risks relevant to the report, and their potential effects on the relevant performance indicators are listed in the following section.

Cross-segment opportunities and risks

EnBW faces general **risks from legal proceedings** due to its contractual relationships with customers, business partners and employees. To a lesser extent, we are also conducting legal proceedings relating to topics in the area of corporate law. For this purpose, adequate accounting provisions are made or, in the event of a probability of occurrence of < 50%, adequate contingent liabilities. As a consequence, there is also an opportunity of positive effects on earnings if these provisions can be reversed once again. In addition, various court cases, official investigations or proceedings and other claims are pending against EnBW. The probability of these actions being successful is, however, considered very low and thus they are not reported under contingent liabilities and other financial obligations.

In connection with these types of legal proceedings, we also recognise the **water concession risk in Stuttgart**. In the court proceedings dealing with the takeover of the water grid after the water concession in the state capital Stuttgart expires, EnBW is still striving to reach an amicable settlement. The court proceedings have been suspended several times, namely from January 2015 until the end of 2016 and from April 2018 until the end of January 2019, to give the parties the opportunity to reach an amicable settlement. Unfortunately, it was not possible to reach such an agreement due to a difference of opinion on the valuation. The next negotiations are expected to be held in September 2019. Therefore, there continues to be a risk in 2019 of losing the water grid without receipt of adequate compensation.

Strategic opportunities and risks

Participation models (previously the top opportunity/risk “Participation models and divestitures”): Opportunities and risks exist due to surplus or reduced revenue, as well as time

delays, in the investment and divestiture portfolio. The majority of the planned divestitures have now been implemented. Opportunities and risks exist for the years 2019 and 2020 that could have an impact on net investment and thus on the key performance indicator internal financing capability, insofar as the actual income from the participation models and divestitures does not meet our medium-term planning goals. We currently identify a balanced level of opportunity and risk in this area.

Financial opportunities and risks

1 Market prices of financial investments: The financial investments managed by the asset management system (Glossary, p. 152) are subject to opportunities and risks due to price changes and other valuation changes as a result of the volatile financial market environment (p. 84). A significantly higher amount of securities allocated to the dedicated financial assets must, since 2018, be measured at fair value through profit or loss in accordance with IFRS 9. The fluctuation in the value of these securities is recognised in profit or loss and stood at €-38.5 million in the reporting year. Through corresponding effects, this could have both a positive and negative impact in 2019 and 2020 on net debt in the low to mid three-digit million euro range. For the market prices for financial investments, we currently identify an equal level of opportunity and risk due to the increased volatility on the financial markets.

2 Discount rate applied to pension provisions: There is a general opportunity and risk due to any change in the discount rate applied to the pension provisions because the present value of the pension provisions falls when the discount rate increases and increases when the discount rate falls. At the end of 2018, the discount rate remained unchanged from the previous year at 1.8%. The future development of interest rates could have a positive impact in the low three-digit million euro range or a negative impact in the low four-digit million euro range on net debt in 2019 and 2020. Against the background of the expected development of interest rates in future, we currently identify a balanced level of opportunity and risk in this area.

3 Liquidity: Due to unforeseeable developments, especially margin payments, unused project funds or tax issues as well as financial market crashes, the Group’s liquidity planning is subject to uncertainty that could lead to deviations between actual payments and planned payments. In general, there is also a risk of additional liquidity requirements if the rating agencies downgrade the credit rating of EnBW (p. 87). The risk of margin payments is increasing primarily as a result of rising trading volumes, increasing market prices and greater volatility on the energy market. Overall, these effects could have an indirect positive or negative impact in the mid three-digit million euro range on the key performance indicator ROCE in 2019 and 2020. We currently identify a balanced level of opportunity and risk in this area.

Compliance opportunities and risks

Compliance risk assessments focus, in particular, on assessing risks and defining appropriate preventative measures in the compliance risk areas of corruption, antitrust law and data protection.

Risks for which EnBW derives measures for fighting corruption and bribery primarily exist in sales activities relating to local authority/political business when dealing with public officials. Important preventative measures, especially training and advisory services, are described on p. 57 f.

In addition, there are antitrust risks in the sales activities of some subsidiaries that could result in fines and damage reputation and also have significant strategic implications. This risk is countered by the joint preventative measures of the compliance and legal departments.

The incorrect handling, or illicit disclosure or use, of personal data poses data protection risks. This risk exists in view of the digital transformation of many business activities. Advisory and awareness services and process controls are in place to guarantee adherence to legal data protection requirements in the Group. Company-specific measures are coordinated via the compliance and data protection department.

Sales segment

Financial opportunities and risks

4 Competitive environment: There is a risk that the continued tense competitive situation for all EnBW brands in the electricity, gas and energy solutions business could have a negative effect on the customer base, sales volumes and price levels. There is still a willingness amongst customers to switch suppliers and the pressure on prices remains. The EnBW 2020 strategy also covers the development and expansion of system solutions and complete solutions that are specifically tailored to the various customer segments (p. 48 ff.). Alongside the traditional supply of electricity and gas, EnBW sees good opportunities here also for offering its customers innovative energy solutions in the areas of energy technology in the home, e.g. with products such as photovoltaic storage systems, the area of corporate energy efficiency and also electromobility (p. 94 ff.). The aim is to generate corresponding earnings contributions for EnBW. This could result in both a positive or negative effect in 2019 and 2020 on the key performance indicator adjusted EBITDA in the low single-digit million euro range. We currently identify a low level of opportunity and risk in this area.

Grids segment

Strategic opportunities and risks

Recognition of costs for high-voltage direct current (HVDC) transmission technology: TransnetBW plans to set up new connections using high-voltage direct current transmission technology (HVDC) (Glossary, p. 153) with other transmission system operators. A regulation stipulating the use of underground

cabling also applies to the SuedLink project. In both projects, there are currently general risks of potential delays and additional costs, as well as a low level of risk that the necessity for these transmission lines might no longer be confirmed in a new Network Development Plan.

Financial opportunities and risks

Year-end balance on the EEG bank account: The EEG bank account is a separately managed bank account in accordance with section 5 of the German Compensation Mechanism Ordinance (AusglMechV) and is thus kept separate from other areas of activity. In accordance with AusglMechV, a deficit or surplus on the account balance can have a temporary positive or negative effect on the calculation of the net debt of EnBW, respectively. As of the reporting date on 31 December 2018, there was a surplus in the mid three-digit million euro range on the EEG bank account of our subsidiary TransnetBW. Due to the EEG cost allocations (Glossary, p. 153) defined for 2019, we anticipate a positive value for the bank account for 2019.

Renewable Energies segment

Strategic opportunities and risks

5 Political and economic environment in Turkey: EnBW has been commercially active in Turkey for many years in the expansion of energy generation from wind power and hydro-power. In the past few years, the economic and political framework conditions in Turkey have deteriorated noticeably. EnBW is continuing to monitor these developments very closely, especially because it has a duty of care for those employees working in Turkey. There has been an increased security risk for a number of years, although no immediate risk to local employees can currently be identified. EnBW is still in regular contact with the German embassy, the German Consulate General, our partner Borusan and other German companies active in Turkey so that it will be able to identify any negative developments as early as possible and respond in good time.

Financial opportunities and risks

6 Fluctuations in wind energy yield: There is a general opportunity or risk for wind power plants due to wind fluctuations because the amounts of electricity generated by them are subject to fluctuations in the mean annual wind speed. In order to take these wind fluctuations into account in our planning, wind reports were created. In addition, measurement campaigns are being carried out up to the end of 2020 to evaluate wind speeds. Nevertheless, wind fluctuations could by their nature have a positive or negative effect on the key performance indicator adjusted EBITDA and on the key performance indicator internal financing capability in the low double-digit million euro range in 2019 and 2020. We currently identify a generally lower level of opportunity and risk in this area.

Generation and Trading segment

There are general risks associated with the operation and dismantling of nuclear power plants.

During the dismantling of nuclear power plants, there is an additional risk of a delay in the return of waste to the local **intermediate storage facilities**, with possible additional costs as a result of the waste being stored for a longer period of time in Great Britain and France, as well as the risk of further costs for approval and authorisation procedures.

At the end of 2018, the remaining provisions held by EnBW were revalued as part of the regular examination of the discount rate and escalation rate. Due to changes in these kinds of assumptions in the future, we currently identify a low level of opportunity and risk for the remaining **nuclear provisions**. Depending on market developments and the framework conditions related to the Energiewende, there is a general risk of a negative impact on earnings due to **impairment losses on power plants and impending losses for onerous contracts for electricity procurement agreements**.

Operative opportunities and risks

7 Availability of nuclear power plants: There is a general risk that exogenous and endogenous factors will have an influence on the availability of power plants. We strive to counter these risks using preventive measures. Depending on their duration, interruptions to the operation of the power plants can positively or negatively impact the operating result. In the first half of 2019, the risk of a temporary shutdown of KKP 2 will increase due to the upgrading of the reactor building crane. The availability of the nuclear power plants could have a positive or negative impact in the low double-digit million euro range in 2019 and a positive impact in the low single-digit million euro range or a negative impact in the low double-digit million euro range in 2020 on the key performance indicator adjusted EBITDA and the key performance indicator internal financing capability. We currently identify a relatively low level of opportunity and risk in this area.

8 Operation and dismantling of nuclear power plants: At the two power plant blocks GKN I and KKP 1, there is a possibility of delays and additional costs due to an increase in complexity and expenses during the dismantling and disposal process. Deadlines and costs are being permanently monitored and controlled within a strategic dismantling project. This could result in opportunities and risk with an effect on the net debt in the mid double-digit million euro range in 2019 and 2020. We currently identify a relatively low level of opportunity and risk in this area.

Financial opportunities and risks

9 Hedging [Glossary, p. 153]: When selling generated electricity volumes, EnBW is exposed to the risk of falling electricity prices and the risk of the unfavourable development of fuel prices in relation to electricity prices. The concept underlying our hedging strategy not only limits risk but also seeks to exploit opportunities. The hedging instruments utilised in 2018 were forwards, futures and swaps. The EnBW Group has exposure to foreign exchange risks from procurement and the hedging of prices for its fuel requirements, as well as from gas and oil trading business. This could have a positive effect in 2020 on the key performance indicator adjusted EBITDA and on the key performance indicator internal financing capability in the mid double-digit to low three-digit million euro range. We currently identify a high level of opportunity for 2020 in the area of hedging due to increasing fuel and CO₂ prices. Further information can be found in the section "Accounting for financial instruments" in the notes to the consolidated financial statements (www.enbw.com/report2018-downloads).

10 Power plant optimisation: Following the conclusion of the hedging of generation activities, the trading business unit will manage the further deployment of the power plants. This is being carried out as part of power plant optimisation on the forward market [Glossary, p. 153], through the sale of system services [Glossary, p. 154] and through placements on the spot and intraday trading platforms [Glossary, p. 154]. However, regulatory interventions continue to have a strong influence. In particular, fluctuating revenues from system services and volatility on the forward and spot markets [Glossary, p. 153, 154] could have a positive or negative effect on the key performance indicator adjusted EBITDA in 2019 and 2020 in the low double-digit million euro range. We currently identify a low level of risk and opportunity that is dependent on the development of market prices.

Compared with the previous year, the following opportunities and risks were either eliminated or will no longer be included in the Group reporting due to their low level of relevance:

Unplanned shutdown of GKN II: The maintenance work has been completed. This risk – which was reported during the course of the year – thus no longer exists.

Link to the key performance indicators

The top opportunities/risks can have an impact on our key performance indicators, whereby the effects on the non-financial key performance indicators are potential in nature and have thus been shown less boldly in the following diagram. In the past financial year, these links were not monitored individually.

Linking the top opportunities/risks with the key performance indicators

Top opportunities/risks		Key performance indicators													
		Financial performance indicators			Strategic performance indicators				Non-financial performance indicators						
		A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Market prices of financial investments														
2	Discount rate applied to pension provisions														
3	Liquidity			●											
4	Competitive environment	●	●	●	●				○	○	○	○			
5	Political and economic environment in Turkey			●					○						
6	Fluctuations in wind energy yield	●	●	●			●								○
7	Availability of nuclear power plants	●	●	●				●	○						
8	Operation and dismantling of nuclear power plants	●	●	●				●							
9	Hedging	●	●	●				●							
10	Power plant optimisation	●	●	●				●							○
■ Cross-segment		A Adjusted EBITDA			Total share of adjusted EBITDA:				H Reputation Index			L LTIF			
■ Sales		B Internal financing capability			D "Customer proximity" / Sales				I EnBW/Yello Customer Satisfaction Index			M Installed output of RE and share of generation capacity accounted for by RE			
■ Renewable Energies		C ROCE			E Grids				J SAIDI (electricity)			K Employee Commitment Index (ECI)			
■ Generation and Trading					F Renewable Energies							N CO ₂ intensity			
● Direct effect					G Generation and Trading										
○ Potential effect															

Overall assessment by the Group management

The risk situation for the EnBW Group increased slightly in 2018. Changes to the framework conditions for the entire sector of energy companies are continuing. Uncertainties with respect to risk potential and payment flow have reduced. Due to higher fuel prices and a recovery in the CO₂ prices, 2018 was thus also characterised by an upwards trend in electricity prices. EnBW still faces numerous factors that pose a danger to planning certainty and thus the achievement of its economic targets, and that have high risk potential, such as regulatory requirements and laws dealing with sustainable energy generation. This has far-reaching consequences for the operating business of the EnBW Group and places a burden on its earnings potential.

The persisting competitive and market risks could influence the operating result, financial position and net assets. At the same time, the Energiewende offers a multitude of opportunities to develop new models for future business segments. We will

resolutely pursue these with our revised post 2020 strategy – which is based on the EnBW 2020 strategy that has been successfully implemented up to now. For example, the EnBW Group believes there are opportunities in a diverse range of customer-oriented measures such as innovative energy solutions in the areas of energy technology, e.g. photovoltaic storage systems, corporate energy efficiency and electromobility. The commercial development of environmentally friendly and CO₂-efficient energy solutions will be resolutely pushed forward. The implementation of our post 2020 strategy aims to secure the future viability of the company and tap into this potential for growth.

Some risks that exist or existed for EnBW have reduced or been eliminated during the course of 2018. However, additional risks have also emerged or were exacerbated. No risks currently exist that might jeopardise the EnBW Group as a going concern.

Opportunity and risk position 2018



Remuneration report

The remuneration report summarises the principles relevant for determining the remuneration of the members of the Board of Management and explains the structure and level of both Board of Management and Supervisory Board remuneration.

The remuneration report takes the recommendations of the German Corporate Governance Code (DCGK) and the German Accounting Standard (GAS) 17 (amended in 2010) into consideration in this respect. It also contains disclosures required by German commercial law included in the notes pursuant to section 314 of the HGB and the management report pursuant to section 315 HGB.

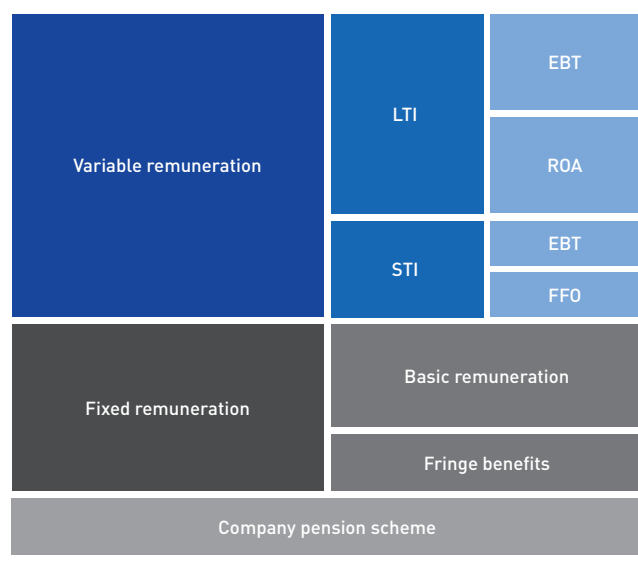
Board of Management remuneration

Based on proposals of the personnel committee, the Supervisory Board passes resolutions on the remuneration of the Board of Management, including the main contract elements, and reviews it on a regular basis. The criteria for determining appropriate remuneration include the responsibilities and performance of the members of the Board of Management, the economic situation, the success and sustainable development of the company and the relationship between the remuneration of the Board of Management and the remuneration of senior management and the workforce as a whole, as well as its development over time.

The current version of the Board of Management remuneration system has been valid since 1 January 2018.

The following diagram shows the structure of the total remuneration:

Components of the target remuneration



The remuneration in 2018 comprises basic remuneration, one-year and multi-year variable remuneration, as well as contributions as part of the company pension scheme. The ratio of single-year to multi-year variable remuneration is 40% to 60%, so that multi-year variable remuneration significantly outweighs single-year variable remuneration. In general, the variable remuneration components have a multi-year measurement basis in accordance with section 4.2.3 sentence 4 DCGK. The single-year variable remuneration component is described below as the Short Term Incentive (STI) while the multi-year variable remuneration component is described as the Long Term Incentive (LTI).

Fixed remuneration

The fixed remuneration comprises basic remuneration and fringe benefits.

Variable remuneration

Short-term variable remuneration (Short Term Incentive – STI)

The STI is paid for a period of one financial year in each case and paid out in the following financial year. The measurement period for the STI is the financial year for which it is paid.

The performance indicators for calculating the extent to which the target for the STI has been achieved are the following non-adjusted corporate performance indicators for the EnBW Group determined for one financial year:

- > EBT (earnings before taxes), adjusted for earnings from the measurement of financial assets allocated to the financial result and outstanding items for derivatives allocated under trading as well as (since the resolution passed by the Supervisory Board of EnBW Baden-Württemberg AG on 5 December 2018 with effect from 1 January 2019) for effects due to the adjustment of the nuclear provisions and to the change in the inflation rate for costs for the operation, dismantling and disposal of the nuclear power plants and in the discount rate
- > FFO (funds from operations), adjusted for the items of income tax paid and income tax received

The Supervisory Board will define the target values for the performance indicators EBT and FFO each year before the start of the single-year measurement period.

The target value for the performance indicator EBT is generally defined on the basis of the figure actually achieved in the previous year, whereby the Supervisory Board can, at its own discretion, make the achievement of the target easier or more difficult by adjusting the figure from the previous year, taking into account extraordinary events in the previous year and

general considerations about the development of earnings (target-actual comparison).

The target value for the performance indicator FFO corresponds to the value defined for the performance indicator in the single-year budget plan approved in the year before the start of the measurement period (plan-actual comparison).

The target remuneration for the STI consists of two equally weighted partial remuneration amounts (50:50). Each partial remuneration amount will be achieved if the target value for the respective performance indicator is achieved to 100%.

The extent to which the individual targets for each of the performance indicators are achieved is based, in case of the underachievement or overachievement of the target value, on the ratio of the defined target value and the actual value for the performance indicator in the measurement period as defined in the consolidated financial statements for the year of payment.

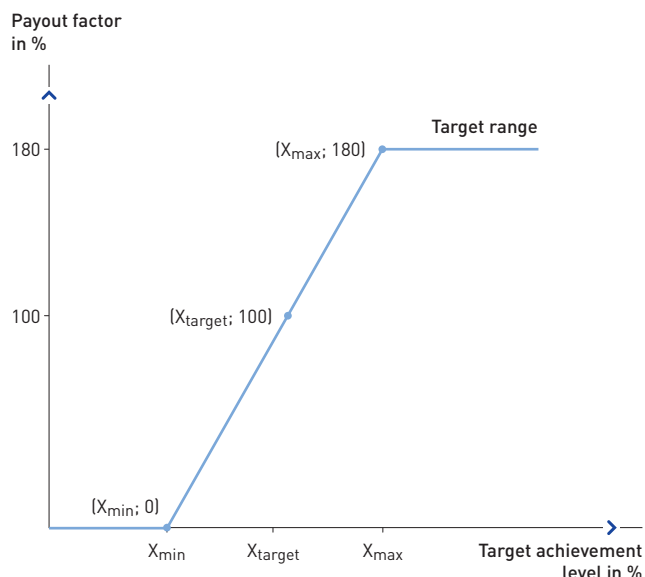
In the event of the overachievement of the target, the maximum possible remuneration that can be paid is limited to 180% of the partial target remuneration defined for each performance indicator (partial remuneration cap). The sum of both partial remuneration caps gives the total STI remuneration cap, which is 180% of the total amount for the STI target remuneration. In the event of the underachievement of the target, STI remuneration has no lower limit and can fall to an amount of €0.

When defining the target values for the short-term remuneration components, the Supervisory Board can also separately define a minimum and maximum value – at its own discretion – and thus the target range for each of the performance indicators on an annual basis.

The target range corresponds to a piecewise linear function, as shown in the adjacent diagram, which is determined by the value of the lowest achievement level X_{\min} in relation to the lowest payout factor and the value of the highest achievement level X_{\max} in relation to the highest payout factor. The relationship between the target value and the minimum and maximum values can be used to determine the lowest and highest achievement levels (X_{\min} and X_{\max}), respectively, while the relationship between the target remuneration and the minimum and maximum remuneration can be used to determine the lowest and highest payout factors, respectively. The partial amount of the short-term variable remuneration for each performance indicator based on the achievement level is calculated by multiplying the actual payout factor by the target remuneration defined for the respective performance indicator.

The actual payout factor is derived using the actual value achieved for the performance indicator and the piecewise linear function for the target range.

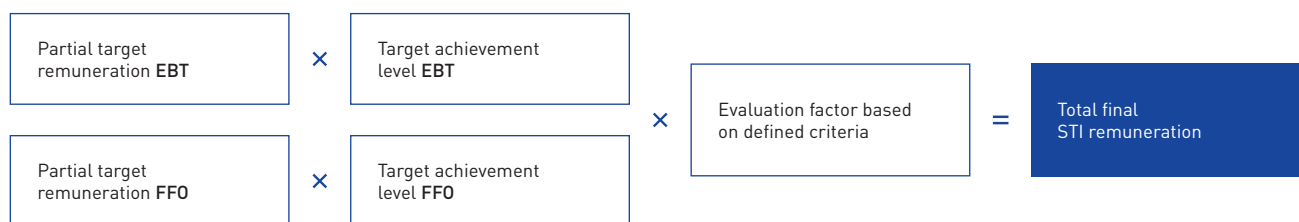
Target range



If the definitions for the performance indicators or accounting policies change, especially as a result of amendments to accounting standards, the target values and ranges will be adjusted correspondingly during the ongoing measurement period, insofar as these changes cause the relevant achievement level to differ by more than +/-5 percentage points in comparison to the value that would have been achieved without these changes. The sum of the partial remuneration amounts for each performance indicator gives the total preliminary STI remuneration.

The amount of the total preliminary STI remuneration, which is calculated exclusively on the basis of financial performance indicators, is then evaluated qualitatively using additional criteria. The adjustment is carried out by multiplying the total preliminary remuneration by a certain factor, whose lowest value is 0.7 and highest value is 1.3. Only one decimal place is used for this factor. If not defined otherwise by the Supervisory Board, the default factor is 1.0. The level of this factor is primarily determined by the Supervisory Board on the basis of an evaluation of criteria that are defined in advance on an annual basis. The sustainable growth of the company is an aspect that is particularly taken into account.

Calculation of the Short Term Incentive (STI)



In the event of extraordinary performance by the whole Board of Management or one member of the Board of Management, the Supervisory Board can at its own discretion grant special remuneration as part of the short-term variable remuneration.

As part of a final evaluation of the short-term variable remuneration, the Supervisory Board also has the discretionary power to appropriately adjust the amount of the STI to take into account extraordinary and unforeseeable events that cannot be controlled by the Board of Management that have had a considerable impact on the financial performance indicators on which the remuneration system is based. This discretionary power does not apply to the success targets or comparative values, the subsequent adjustment of which should be excluded according to the recommendations in section 4.2.3 paragraph 2 DCGK.

If remuneration is granted in accordance with the two previous paragraphs, the total STI remuneration cap of 180% of the target STI remuneration still applies.

Long-term variable remuneration (Long Term Incentive – LTI)

The LTI is paid for a period of one financial year and paid out in the financial year following the conclusion of the measurement period. The measurement period for calculating the LTI covers a period of three financial years which includes the year for which the remuneration is being paid and the two subsequent financial years (performance period).

The performance indicators for calculating the extent to which the target for the LTI has been achieved are the following non-adjusted corporate performance indicators for the EnBW Group determined for one financial year in each case:

- EBT (earnings before taxes), adjusted for earnings from the measurement of financial assets allocated to the financial result and outstanding items for derivatives allocated under trading as well as (since the resolution passed by the Supervisory Board of EnBW Baden-Württemberg AG on 5 December 2018 with effect from 1 January 2019) for effects due to the adjustment of the nuclear provisions and to the change in the inflation rate for costs for the operation, dismantling and disposal of the nuclear power plants and in the discount rate

- ROA (return on assets = return on the capital expenditure for intangible assets and property, plant and equipment based on the relationship between the non-adjusted EBIT [adjusted in line with the regulations for deviations in the performance indicator EBT] and the sum of the intangible assets and property, plant and equipment [adjusted for subsidies related to capital expenditure])

The target values for the performance indicators EBT and ROA for a performance period are defined by the Supervisory Board at its own discretion on an annual basis based on the corporate strategy and with effect for the next performance period that begins in the following year.

The target remuneration for the LTI consists of two equally weighted partial remuneration amounts (50:50). Each partial remuneration amount will be achieved if the target value for the respective performance indicator is achieved to 100%.

The extent to which the individual targets for each of the performance indicators are achieved is based, in case the underachievement or overachievement of the target value, on the ratio of the defined target value and the arithmetic mean of the actual values for the performance indicator as defined in the consolidated financial statements for each individual year of the performance period.

In the event of the overachievement of the target, the maximum possible remuneration that can be paid is limited to 180% of the partial target remuneration defined for each performance indicator (partial remuneration cap). The sum of both partial remuneration caps gives the total LTI remuneration cap, which is 180% of the total amount for the LTI target remuneration. In the event of the underachievement of the target, LTI remuneration has no lower limit and can fall to an amount of €0.

When defining the target values for the long-term remuneration components, the Supervisory Board can also separately define a minimum and maximum value – at its own discretion – and thus the target range for each of the performance indicators on an annual basis (see here the information provided for the STI).

The partial amount of the long-term variable remuneration for each performance indicator based on the achievement level is calculated by multiplying the actual payout factor by the target remuneration defined for the respective performance indicator. The actual payout factor is derived using the actual value achieved for the performance indicator and the piecewise linear function for the target range. The sum of the partial remuneration amounts for each performance indicator gives the total LTI remuneration.

If the definitions for the performance indicators or accounting policies change, especially as a result of amendments to accounting standards, the target values and ranges will be adjusted correspondingly during the ongoing measurement period, insofar as these changes cause the relevant achievement level to differ by more than 5 percentage points in comparison to the value that would have been achieved without these changes.

The regulations for the Board of Management remuneration system that were valid up to 31 December 2017 apply for the long-term variable remuneration in the measurement periods 2015 to 2017, 2016 to 2018 and 2017 to 2019, whereby the Supervisory Board of EnBW Energie Baden-Württemberg AG passed a resolution on 12 July 2018 that a remuneration cap for the total LTI of 110% of the total target remuneration will be introduced for the measurement periods 2016 to 2018 and 2017 to 2019. The LTI value appreciation bonus according to the old remuneration system consisted of a basic LTI, a competition component and a sustainability component. The total value appreciation bonus is the sum of the variable remuneration payments that are calculated from these three components. Target values, lower limits and upper limits are defined in

advance by the Supervisory Board. The basic LTI is determined by the accumulated contribution to value added derived from the three-year medium-term planning. It is calculated from the difference between the performance indicators ROCE and WACC (weighted average cost of capital) multiplied by the average capital employed. The competition component measures the relative performance of the EnBW Group in the respective three-year performance period against a peer group of competitors on the basis of the value spread (= ROCE - WACC). The goal of the sustainable growth of the company in its strictest sense is also taken into account through the LTI sustainability component. In this component, the impact of the sustainable growth of the company on the areas of customers, employees and environment/society is taken into account. The extent to which the targets for all three components have been achieved is determined after the conclusion of the three-year planning period that acts as the basis for the calculations in each case. The Supervisory Board is entitled to adjust the targets if events arise that are not relevant to the ongoing management of the company and thus outside of the sphere of influence of the Board of Management. The size of the value appreciation bonus for 100% achievement of the targets, as well as the maximum and minimum values for the overachievement or underachievement of the agreed targets, can also be found in the table "Target income of members of the Board of Management". The amount based on the achievement of the relevant targets is paid out after the conclusion of the three-year measurement period. With a view to maintaining the previous level of target income, interest of 3% per annum is accrued on the calculated bonus payment for two years and is paid after the conclusion of the three-year calculation period.

Remuneration of members of the Board of Management in the 2018 financial year

in €	Dr. Frank Mastiaux, Chairman		Dr. Bernhard Beck, LL.M.	
	2018	2017	2018	2017
Fixed remuneration				
Basic remuneration	990,000	990,000	515,000	515,000
Other remuneration ¹	17,086	30,933	18,715	32,078
Variable remuneration				
Without long-term incentive	802,705	999,350	413,075	593,950
With long-term incentive	1,198,817 ²	1,282,331	732,021 ²	755,354
Total	3,008,608	3,302,614	1,678,811	1,896,382

¹ Other remuneration includes monetary benefits, particularly from the provision of company cars amounting to €196,687 (previous year: €126,911).

² Current preliminary value appreciation bonus for the performance periods 2017 to 2019 (and 2018 to 2020) is €1,130,000 for Dr. Frank Mastiaux (€1,314,985), €690,000 for Dr. Bernhard Beck (€685,918), €590,000 for Thomas Kusterer (€685,918) and €590,000 for Dr. Hans-Josef Zimmer (€685,918). The exact level of the value appreciation bonus for the performance periods 2017 to 2019 (and 2018 to 2020) can only be determined following the end of the 2019 financial year (and 2020 financial year), and can fluctuate within the LTI spread pursuant to the following table Target income of members of the Board of Management.

Target income of members of the Board of Management ¹

in €	Dr. Frank Mastiaux Chief Executive Officer				Dr. Bernhard Beck, LL.M. Chief Personnel Officer			
	2018	2018 (min.)	2018 (max.)	2017	2018	2018 (min.)	2018 (max.)	2017
Fixed remuneration	990,000	990,000	990,000	990,000	515,000	515,000	515,000	515,000
Fringe benefits	17,086	17,086	17,086	30,933	18,715	18,715	18,715	32,078
Total	1,007,086	1,007,086	1,007,086	1,020,933	533,715	533,715	533,715	547,078
One-year variable remuneration performance bonus	710,000	0	1,278,000	748,000	370,000	0	666,000	455,000
Multi-year variable remuneration LTI 2016 to 2018	1,026,000	0	1,130,000	1,026,000	630,000	0	690,000	630,000
Total	2,743,086	1,007,086	3,415,086	2,794,933	1,533,715	533,715	1,889,715	1,632,078
Pension expenses	546,663	546,663	546,663	545,005	112,847	112,847	112,847	222,398
Total remuneration	3,289,749	1,553,749	3,961,749	3,339,938	1,646,562	646,562	2,002,562	1,854,476

¹ This table illustrates the remuneration in both the reporting year and previous year which arises given 100% achievement of the targets (target income) and the potential minimum and maximum remuneration for the financial year. Remuneration is described for Board of Management members who were appointed at least on a part-time basis in either the reporting year or previous year to the Board of Management at EnBW AG.

Payments to Board of Management members ¹

in €	Dr. Frank Mastiaux Chief Executive Officer		Dr. Bernhard Beck, LL.M. Chief Personnel Officer	
	2018	2017	2018	2017
Fixed remuneration	990,000	990,000	515,000	515,000
Fringe benefits	17,086	30,933	18,715	32,078
Total	1,007,086	1,020,933	533,715	547,078
One-year variable remuneration performance bonus	838,069	892,250	464,059	503,050
Multi-year variable remuneration Deferrals from 2014	–	445,231	–	261,901
LTI 2014 to 2016	–	796,118	–	386,059
LTI 2015 to 2017	1,222,921	–	718,222	–
Total	3,068,076	3,154,532	1,715,996	1,698,088
Pension expenses	546,663	545,005	112,847	222,398
Total remuneration	3,614,739	3,699,537	1,828,843	1,920,486

¹ This table illustrates payments in both the reporting year and previous year pursuant to the German Income Tax Act (Einkommensteuergesetz). Earnings are described for members of the Board of Management who were appointed at least on a part-time basis in either the reporting year or previous year to the Board of Management of EnBW AG.

Thomas Kusterer		Dr. Hans-Josef Zimmer	
2018	2017	2018	2017
515,000	515,000	515,000	515,000
23,594	23,313	39,956	41,309
419,686	514,994	418,477	514,820
625,931 ²	651,327	625,931 ²	651,327
1,584,211	1,704,634	1,599,364	1,722,456

Thomas Kusterer Chief Financial Officer				Dr. Hans-Josef-Zimmer Chief Technical Officer			
2018	2018 (min.)	2018 (max.)	2017	2018	2018 (min.)	2018 (max.)	2017
515,000	515,000	515,000	515,000	515,000	515,000	515,000	515,000
23,594	23,594	23,594	23,313	39,956	39,956	39,956	41,309
538,594	538,594	538,594	538,313	554,956	554,956	554,956	556,309
370,000	0	666,000	390,000	370,000	0	666,000	390,000
535,000	0	590,000	535,000	535,000	0	590,000	535,000
1,443,594	538,594	1,794,594	1,463,313	1,459,956	554,956	1,810,956	1,481,309
380,180	380,180	380,180	320,993	235,725	235,725	235,725	239,981
1,823,774	918,774	2,174,774	1,784,306	1,695,681	790,681	2,046,681	1,721,290

Thomas Kusterer Chief Financial Officer		Dr. Hans-Josef-Zimmer Chief Technical Officer	
2018	2017	2018	2017
515,000	515,000	515,000	515,000
23,594	23,313	39,956	41,309
538,594	538,313	554,956	556,309
445,103	475,294	443,895	475,120
–	235,711	–	235,711
–	349,453	–	349,453
620,561	–	620,560	–
1,604,258	1,598,771	1,619,411	1,616,593
380,180	320,993	235,725	239,981
1,984,438	1,919,764	1,855,136	1,856,574

Compensation agreed with the Board of Management in the event of termination of service

The Supervisory Board of EnBW AG passed a new resolution on 18 March 2016 for the reorganisation of the company pension scheme for the Board of Management, effective as of 1 January 2016.

The regulations that were valid up until then can be found in the following publications:

- The company pension scheme that was valid for members of the Board of Management up until 31 December 2015 is presented in detail in the remuneration report for 2015, which was published in the combined management report of the EnBW Group and EnBW AG for the 2015 financial year.
- The regulations governing the transition of the company pension scheme that was valid for members of the Board of Management up until 31 December 2015 are presented in detail in the remuneration report for 2016, which was published in the combined management report of the EnBW Group and EnBW AG for the 2016 financial year.

The company pension scheme for the members of the Board of Management at the company is a modern and market-oriented pension system that provides members of the Board of Management with flexibility with respect to how the pension benefits are paid out. Following the introduction of the new system, there has been a shift from the previous defined benefit pension plan to a defined contribution pension model. In the new system, annual pension contributions will be paid that accrue interest at a rate oriented to the capital market. In order to ensure that the business risks associated with the pension scheme – especially the interest rate risks and biometric risks – remain calculable in the future, the interest model only contains a relatively low fixed interest entitlement that forms the basic interest rate plus a non-guaranteed surplus that is based on the actual development of interest rates in the life insurance industry.

During the term of the contract, EnBW pays fixed annual contributions to the pension scheme to an individual pension account. Pension contributions are paid for a maximum period of three terms of office (or 13 years in office). The fixed annual contributions are €230,000 for ordinary members of the Board of Management and €390,000 for the Chairman of the Board of Management. In the event of invalidity and as a supplementary risk benefit, age-dependent “notional” contributions will be paid on top of the balance already existing on the pension account until the member reaches the age of 60 – although at the most seven contributions will be paid.

As well as the annual contributions, interest is paid that is oriented to the market and consists of a guaranteed basic interest rate and a non-guaranteed surplus. The guaranteed interest is paid on every contribution in advance until the defined retirement age (63 years old). In addition, annual surplus payments can be paid above and beyond the guaranteed interest. These are based on the current average interest rate for capital investments actually achieved in the past year in the life insurance industry and are not guaranteed.

When the pension is due (age, invalidity, death), payment of the pension assets is generally made in five to ten instalments. Alternatively, a life-long pension payment can be made on the request of the member of the Board of Management – including a 60% entitlement for surviving dependants – or a mixed form of payment. Payment options are also available to the surviving dependants. If the member leaves the Board of Management before the pension is due, the pension account will remain at its current balance plus any surplus payments that are still due to be made.

The members of the Board of Management are entitled to make their own contributions to the pension scheme and supplement the pension provision financed by the employer. For this purpose, a proportion of the annual STI bonus up to a maximum sum of €50,000 p.a. can be converted into a pension entitlement. The regulations described above apply correspondingly to self-financed contributions.

Vested pension entitlements from the old pension scheme: As part of the transfer of the existing pension entitlements from the old pension scheme, the following vested pension entitlements – in accordance with the individual term of service in each case – were determined for the serving members of the Board of Management as of 31 December 2015: Dr. Frank Mastiaux: €80,676 p.a., Dr. Bernhard Beck: €195,846 p.a., Thomas Kusterer: €89,523 p.a., Dr. Hans-Josef Zimmer: €174,636 p.a.

Individual pension contributions that deviate from the regulations for the new pension scheme: From 1 January 2016, the annual pension contributions and the interest on the contributions will generally be paid in accordance with the rules of the new system for new members of the Board of Management appointed in the future. However, a deviation was necessary for the current members of the Board of Management to take account of the transition to the new system, and individual pension contributions and an individual contribution period have been defined. The following individual pension contributions were determined: Dr. Frank Mastiaux: €360,000 p.a., Dr. Bernhard Beck: €170,000 p.a., Thomas Kusterer: €215,000 p.a., Dr. Hans-Josef Zimmer: €120,000 p.a.

Regulation for limiting severance payments: No severance benefit obligations exist in the event of premature termination of service on the Board of Management. However, severance benefits may be payable on the basis of a severance agreement made with the individual. For agreements in place as of the reporting date, it was agreed that payments made to a member of the Board of Management on premature termination of his or her contract without serious cause, including fringe benefits, shall not exceed the value of two years' remuneration (severance cap) and compensate for no more than the remaining term of the contract. In concluding or extending contracts for the Board of Management, care is taken to ensure that no payments will be made to a member of the Board of Management in the event of the premature termination of the contract due to an important reason for which the member of the Board of Management is responsible.

In the event of the premature termination of service on the Board of Management due to a change of control, the possibility

of a severance payment for the member of the Board of Management is limited to the pro rata share of annual remuneration(s) for the residual term of the contract. However, the severance payment must not exceed three times the annual remuneration.

In concluding or extending contracts for the Board of Management in the event of the premature termination of service on the Board of Management due to a change of control, it is agreed that settlement or severance payments should not exceed three times the annual remuneration and must not compensate for more than the residual term of the contract.

Temporary unavailability for work: In the event of temporary unavailability for work on the part of a member of the Board of Management due to illness or any other reason for which the

member of the Board of Management is not responsible, remuneration will be paid for the first six months. The amount of variable remuneration will be calculated from the average of the last three years, and basic remuneration will be paid for a further six months. However, payments in the event of unavailability for work will be made no longer than until the end of the term of the service agreement.

The disclosures for the 2018 financial year concerning post-employment benefits are presented below. This presentation satisfies the requirements of section 285 No. 9a HGB. The disclosures include the vested entitlement as of the reporting date, the annual expenses for pension obligations and the present value of the pension obligations earned as of the reporting date.

Post-employment benefits

in €	Dr. Frank Mastiaux, Chairman		Dr. Bernhard Beck, LL.M.		Thomas Kusterer		Dr. Hans-Josef Zimmer	
	2018	2017	2018	2017	2018	2017	2018	2017
Vested benefit from previous entitlement p.a.	80,676	80,676	195,846	195,846	89,523 ²	89,523 ²	174,636	174,636
Capital from contribution model	1,296,167	877,398	373,116	312,129	777,533	515,493	384,086	254,643
Annual expenses for pension obligations ¹	546,663	545,005	112,847	222,398	380,180	320,993	235,725	239,981
Present value of pension obligations (defined benefit obligations)	3,396,435	2,899,870	5,216,617	4,971,364	3,151,738	2,786,574	4,845,098	4,564,216

¹ Including an addition to capital for pension benefits totalling €128,128 (previous year: €74,580). This is a pension commitment financed through voluntarily waiving part of the salary.

² In addition to the vested pension, Thomas Kusterer also has a special capital component of €135,000.

Annual expenses for pension obligations include both service and interest costs. There are defined benefit obligations in accordance with IFRS of €16.6 million for the current members of the Board of Management (previous year: €15.2 million).

Former members of the Board of Management and their surviving dependants received total remuneration of €4.8 million in the 2018 financial year (previous year: €4.7 million). These pension payments are indexed to the percentage change in remuneration according to the collective bargaining agreement.

There are defined benefit obligations to former members of the Board of Management and their surviving dependants in accordance with IFRS of €99.0 million (previous year: €98.8 million).

As in the previous year, no loans or advances to members of the Board of Management existed at the end of the financial year.

Supervisory Board remuneration

In response to a proposal of the Board of Management and Supervisory Board, the Annual General Meeting on 25 April 2013 revised the regulations for Supervisory Board remuneration. Accordingly, members of the Supervisory Board receive fixed remuneration of €40,000 each payable at the end of the financial year in addition to reimbursement of their expenses for the entire 2018 financial year.

The Chairman of the Supervisory Board receives twice the above, while the Deputy Chairman of the Supervisory Board receives one and a half times the aforementioned amount.

Members of the Supervisory Board receive fixed remuneration of €7,500 each per financial year to offset the additional work involved in any activities in one or more Supervisory Board committees. The Chairperson of one or more committees receives twice the amount of the remuneration for the committee work, unless the respective committee has not met in the financial year concerned. Supervisory Board members who have only belonged to the Supervisory Board or a committee or acted as a Chairperson for part of the financial year are paid remuneration proportionate to the duration of their office or their position in that financial year.

In addition, members of the Supervisory Board receive an attendance fee of €750 for Supervisory Board meetings and committee meetings. Attendance at preliminary meetings is remunerated with €250 per meeting, but only for one preliminary meeting per Supervisory Board meeting.

According to this remuneration system, the members of the Supervisory Board will receive the total remuneration (including attendance fees and remuneration for offices held at subsidiaries) shown in the table for the 2018 financial year.

The disclosures for the remuneration for members of the Supervisory Board include attendance fees amounting to €201,500 (previous year: €227,250) and attendance fees totalling €14,390 included in the remuneration for offices held at subsidiaries (previous year: €20,265). No other remuneration or benefits for services rendered personally, in particular consulting or mediation services, were paid to members of the Supervisory Board, nor did they receive any loans or advances in the reporting year.

The members of the Board of Management and the Supervisory Board are covered by adequate D&O insurance concluded in the interest of EnBW. For this D&O insurance, the deductible for members of the Board of Management and the Supervisory Board is 10% of the claim in each case, but no more than one and a half times the fixed annual remuneration.

Total remuneration for members of the Supervisory Board of EnBW AG

in €	Fixed remuneration (incl. attendance fees)		Remuneration for offices held at subsidiaries		Total	
	2018	2017	2018	2017	2018	2017
Lutz Feldmann, Chairman	110,750	113,000	0	0	110,750	113,000
Dietrich Herd, Deputy Chairman	84,750	88,500	9,500	9,800	94,250	98,300
Dr. Dietrich Birk	57,250	57,250	0	0	57,250	57,250
Stefanie Bürkle ¹	52,000	54,250	0	0	52,000	54,250
Stefan Paul Hamm ²	64,000	66,250	7,513	7,513	71,513	73,763
Volker Hüsken (since 1 October 2018)	13,723	0	2,579	0	16,302	0
Michaela Kräutner ²	46,000	46,000	950	1,500	46,950	47,500
Silke Krebs	56,500	61,000	0	0	56,500	61,000
Marianne Kugler-Wendt ²	56,500	56,500	6,100	6,400	62,600	62,900
Thomas Landsbek	46,000	46,000	0	0	46,000	46,000
Dr. Hubert Lienhard	54,250	55,000	0	0	54,250	55,000
Sebastian Maier	56,500	56,500	6,615	6,615	63,115	63,115
Arnold Messner	63,750	66,250	8,113	8,113	71,863	74,363
Dr. Wolf-Rüdiger Michel ¹	54,250	54,250	0	0	54,250	54,250
Gunda Röstel	64,000	66,250	11,513	11,513	75,513	77,763
Klaus Schörnich (until 30 September 2018)	42,777	56,500	200	11,150	42,977	67,650
Heinz Seiffert ¹	55,750	55,750	0	0	55,750	55,750
Edith Sitzmann ³	54,250	55,750	0	0	54,250	55,750
Ulrike Weindel	56,500	56,500	0	0	56,500	56,500
Lothar Wölfl ¹	63,250	64,750	0	0	63,250	64,750
Dr. Bernd-Michael Zinow	66,250	68,500	12,800	12,200	79,050	80,700
Total	1,219,000	1,244,750	65,883	74,804	1,284,883	1,319,554

1 The regulations in the State Civil Service Act (Landesbeamtengesetz) and the Ancillary Activities Ordinance (Landesnebenberufungsverordnung – LNTVO) of the Federal State of Baden-Württemberg for relinquishing remuneration from secondary employment to the administrative district apply. The regulations in LBeamVG apply instead for Mr Seiffert.

2 In accordance with the regulations of the German Federation of Trade Unions (DGB) on the transfer of supervisory board remuneration, the remuneration is transferred to the Hans Böckler Foundation and ver.di Gewerkschaft Politische Bildung gGmbH.

3 The members of the state government and the state secretaries are obligated to relinquish any remuneration, including attendance fees, received for membership of supervisory boards, executive boards, advisory boards and all other comparable boards to which they have been appointed in connection with their office or to which they are assigned as a member of the state government, applying section 5 LNTVO analogously, provided that the remuneration received in the calendar year exceeds the gross total for level "B6 and higher" (currently €6,100) (council of ministers resolution dated 05/07/2016).

Disclosures pursuant to sections 289a (1) and 315a (1) German Commercial Code (HGB) and explanatory report of the Board of Management

In the following, the Board of Management provides the information prescribed by sections 289a (1) and 315a (1) HGB and explains this in accordance with section 176 (1) sentence 1 AktG.

Composition of the subscribed capital and shares in capital

The composition of the subscribed capital is described and explained in the notes to the annual and consolidated financial statements in the section "Equity". Direct or indirect shares in capital which exceed 10% of the voting rights are described and explained in the notes to the annual financial statements in the sections "Shareholder structure" and "Disclosures pursuant to sections 33 ff. German Securities Trading Act (WpHG)" and the notes to the consolidated financial statements in section "Related parties (entities)".

Information and explanations about the company's treasury shares are presented below and can be found in note 18 of the notes to the consolidated financial statements at www.enbw.com/report2018-downloads.

Restrictions relating to voting rights or transferability of shares

Agreements were reached on 22 December 2015 between, on the one hand, Zweckverband Oberschwäbische Elektrizitätswerke (Zweckverband OEW) and OEW Energie-Beteiligungs GmbH and, on the other, the Federal State of Baden-Württemberg, NECKARPRI GmbH and NECKARPRI-Beteiligungsgesellschaft mbH, which include clauses relating to restrictions of authorisation over EnBW shares held by these parties and a general mutual obligation of both main shareholders to maintain parity investment relationships in EnBW with respect to each other. Restrictions relating to voting rights no longer exist to the knowledge of the Board of Management since the aforementioned direct and indirect EnBW shareholders annulled a shareholder agreement on 22 December 2015 that had previously existed between them.

Legal provisions and statutes on the appointment and dismissal of members of the Board of Management and amendments to the Articles of Association

Pursuant to section 84 AktG in conjunction with section 31 MitbestG, responsibility for the appointment and dismissal of members of the Board of Management rests with the Supervisory Board. This competence is stipulated in section 7 (1) sentence 2 of the Articles of Association of EnBW. If, under exceptional circumstances, a necessary member of the Board of Management is missing, section 85 AktG requires that a member of the Board of Management be appointed by the court in urgent cases.

The Annual General Meeting has the right to make changes to the Articles of Association in accordance with section 119 (1) No. 5 AktG. The specific rules of procedure are contained in sections 179 and 181 AktG. For practical reasons, the right to amend the Articles of Association was transferred to the Supervisory Board where such amendments affect the wording only. This option pursuant to section 179 (1) sentence 2 AktG is embodied in section 18 (2) of the Articles of Association.

Pursuant to section 179 (2) AktG, resolutions by the Annual General Meeting to amend the Articles of Association require a majority of at least three quarters of the capital stock represented when passing the resolution, unless the Articles of Association stipulate a different majority, which however for any amendment of the purpose of the company can only be higher. Pursuant to section 18 (1) of the Articles of Association, resolutions by the Annual General Meeting require a simple majority of the votes cast, unless legal regulations or the Articles of Association stipulate otherwise. If the law requires a larger majority of the votes cast or of the capital stock represented when passing the resolution, the simple majority suffices in those cases where the law leaves the determination of the required majority to the Articles of Association.

Authority of the Board of Management regarding the possibility to issue or redeem shares

No authorised or conditional capital nor any authorisation of the Annual General Meeting pursuant to section 71 (1) No. 8 AktG for the purchase of treasury shares by the company currently exists at EnBW. Therefore, the company may only acquire treasury shares on the basis of other reasons justifying such purchases in accordance with section 71 (1) AktG. As of 31 December 2018, the company holds 5,749,677 treasury shares which were purchased on the basis of earlier authorisations in accordance with section 71 (1) No. 8 AktG. The company's treasury shares can be sold on the stock exchange or by public offer to all company shareholders. The use of treasury shares, in particular their sale, in any other way can only occur within the scope of the resolution issued by the Annual General Meeting on 29 April 2004. The treasury shares held by EnBW do not grant the company any rights in accordance with section 71b AktG.

Material agreements of the company subject to the condition of a change of control as a result of a takeover bid and the resulting effects

The following EnBW agreements are subject to the condition of a change of control following a takeover bid as defined by sections 289a (1) No. 8 and 315a (1) No. 8 HGB:

A syndicated credit line of €1.5 billion, which had not been drawn as of 31 December 2018, can be terminated by the lenders and become due for repayment given a change of control at EnBW. This does not apply if the purchaser of the shares is the Federal State of Baden-Württemberg or Zweckverband OEW or another German state-owned public law legal entity.

A promissory note loan of €200 million, two bilateral bank loans together totalling around €48 million and a syndicated loan, of which €186 million was drawn as of 31 December 2018, taken out by Stadtwerke Düsseldorf AG (SWD) relating to the financing of their CCGT power plant can each become due for repayment given a change of control at SWD, including an indirect change of control. This does not apply if, after the change of control, the majority of shares in SWD are held directly or indirectly by German government entities, and the City of Düsseldorf holds at least 25.05% of the shares in SWD.

A syndicated credit line with a volume of €700 million that was newly agreed with VNG AG in 2018, of which around €59 million was drawn down as of 31 December 2018, can become due for repayment given a change of control at VNG, including an indirect change of control. This does not apply if, after the change of control, the majority of shares in VNG continue to be held directly by German public sector shareholders or indirectly by these shareholders via controlled legal entities.

A bond of JPY 20 billion issued on 12 December 2008 under the Debt Issuance Programme can be terminated by the lenders and become due for repayment given a change of control at EnBW. This does not apply if the purchaser of the shares is EDF (whose legal successor as shareholder has been the Federal State of Baden-Württemberg since February 2011) or Zweckverband OEW or another German state-owned public law corporation.

Two bilateral long-term bank loans, drawn to the value of €375 million and around €364 million as of 31 December 2018, can be terminated by the lender and become due for repayment given a change of control at EnBW, provided the change of control has a negative effect on repayment of the loan in future. This does not apply if the purchaser of the shares is EDF (whose legal successor as shareholder has been the Federal State of Baden-Württemberg since February 2011) or Zweckverband OEW.

Compensation agreements

Compensation agreements pursuant to sections 289a (1) No. 9 and 315a (1) No. 9 HGB concluded with members of the Board of Management to cover any case of a change of control are described and explained in the remuneration report, which is part of the management report.

Nos. 4 and 5 of sections 289a (1) and 315a (1) HGB were not relevant for EnBW in the 2018 financial year.

Index for the non-financial declaration of the EnBW Group and EnBW AG

In accordance with sections 315b and 289b HGB, the EnBW Group and EnBW AG have been obligated to issue a non-financial declaration since the 2017 financial year. EnBW is complying with the requirements in the Act on Strengthening Non-Financial Reporting by Companies in Management Reports and Group Management Reports (CSR Directive Implementation Act) – as in the previous year – through a non-financial declaration that is fully integrated into the Integrated Annual Report as part of the combined management report of the

EnBW Group and EnBW AG. We comply with all of the aspects required by the act and also with other aspects that are material from the perspective of EnBW, such as standing in society, customer satisfaction and supply quality, by providing the respective information in each relevant section of the Integrated Annual Report 2018. The following table describes the relevant aspects that are contained in the integrated report. They each provide explanations of the concepts and processes, measures, performance indicators and risks.

Index for the non-financial declaration of the EnBW Group and EnBW AG

Goal dimension	Themes	Aspects	Section	Page reference
	Compliance	› Fighting corruption and bribery	› Corporate governance › Report on opportunities and risks	page 57 f. page 118
	Social engagement	› Social issues	› In dialogue with our stakeholders › Report on opportunities and risks	page 61 f. page 118
	Procurement	› Respect for human rights	› Procurement › Report on opportunities and risks	page 69 ff. page 118
 Customers and society	Reputation	› Standing in society	› The EnBW Group › Forecast › Report on opportunities and risks	page 94 page 112 page 118
	Customer proximity	› Customer satisfaction	› The EnBW Group › Forecast › Report on opportunities and risks	page 94 ff. page 112 page 118
	Supply reliability	› Supply quality	› The EnBW Group › Forecast	page 96 page 112
 Employees	Employee commitment	› Employee issues	› The EnBW Group › Forecast › Report on opportunities and risks	page 96 ff. page 113 page 118
	Occupational safety	› Employee issues	› The EnBW Group › Forecast › Report on opportunities and risks	page 100 f. page 113 page 118
 Environment	Expansion of renewable energies	› Environmental issues	› The EnBW Group › Forecast › Report on opportunities and risks	page 101 f. page 113 page 118 f.
	Climate protection	› Environmental issues	› Business model › General conditions › The EnBW Group › Forecast › Report on opportunities and risks	page 39 page 73 f. page 103 f. page 113 page 119

The non-financial declaration is issued jointly for the EnBW Group and EnBW AG. Differences between the statements for the Group and EnBW AG are clearly identified in the text. Information on the business model can be found in the section

“Business model” (p. 38 ff.). We have not identified any material individual risks in the 2018 financial year that have a very high probability of a serious negative impact in relation to the relevant non-financial issues.

The reporting of sustainability topics has been based for many years on the standard issued by the Global Reporting Initiative (GRI). Since the 2017 financial year, we have based the reporting on the GRI standards, including the Electric Utilities Sector Supplement (www.enbw.com/gri-index). Our sustainability reporting also complies with the requirements of the Communication on Progress for the UN Global Compact.

Information on the diversity concept can be found in the declaration of corporate management at www.enbw.com/corporate-governance.

KPMG AG Wirtschaftsprüfungsgesellschaft is commissioned to audit the consolidated financial statements and the combined management report including the contents of the non-financial declaration with reasonable assurance and then to issue an audit opinion following the conclusion of the audit.

The full consolidated financial statements and the combined management report for the 2018 financial year are accessible to the public on the website at www.enbw.com/report2018-downloads.

Index for the Task Force on Climate-related Financial Disclosures (TCFD)

EnBW started to implement the recommendations from the TCFD in 2017. This work has continued in the 2018 financial year and is being continuously developed in each of the four key

elements. The index also includes other themes besides these where we are working on the further implementation of the TCFD recommendations.

Task Force on Climate-related Financial Disclosures (TCFD)

Issue	Contents	Page reference
Governance	<ul style="list-style-type: none"> > Corporate management > Materiality analysis > Investment guidelines > Climate protection initiatives > Overall assessment by the Group management > Board of Management remuneration 	page 56 page 59 f. pages 60 and 88 pages 60 and 73 page 109 page 124 ff.
Strategy	<ul style="list-style-type: none"> > Robustness of business model/scenario analysis > Strategy, strategic development > Interdependencies > Materiality analysis > Green bonds > General conditions, climate protection > Environment goal dimension: internal control system 	page 39 pages 48 and 50 f. page 53 ff. page 59 f. page 85 f. page 73 f. page 117 f.
Risk management	<ul style="list-style-type: none"> > Integrated opportunity and risk management including opportunity and risk map > Environment goal dimension: opportunities and risks 	page 114 ff. page 118 ff.
Performance indicators and targets	<ul style="list-style-type: none"> > Sustainability rating > Key performance indicators and long-term targets > Environment goal dimension: key performance indicators and other performance indicators 	page 60 page 51 ff. page 101 ff.

Condensed financial statements of the EnBW Group

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Note

The full set of financial statements of the EnBW Group 2018 including the notes to the consolidated financial statements and the unqualified auditor's report form part of the Integrated Annual Report 2018 – Extended Version, which is available in PDF format on our website at www.enbw.com/report2018-downloads.

Income statement

in € million ¹	Notes	2018	2017	Change in %
Revenue including electricity and energy taxes		21,193.1	22,622.7	-6.3
Electricity and energy taxes		-575.6	-648.7	-11.3
Revenue	(1)	20,617.5	21,974.0	-6.2
Changes in inventories		13.9	22.7	-38.8
Other own work capitalised		102.1	134.9	-24.3
Other operating income	(2)	1,116.7	2,750.3	-59.4
Cost of materials	(3)	-16,657.6	-18,189.3	-8.4
Personnel expenses	(4)	-1,871.8	-1,777.1	5.3
Impairment losses	(24)	-36.7	-	-
Other operating expenses	(5)	-1,194.5	-1,163.1	2.7
EBITDA		2,089.6	3,752.4	-44.3
Amortisation and depreciation	(6)	-1,213.8	-1,248.4	-2.8
Earnings before interest and taxes (EBIT)		875.8	2,504.0	-65.0
Investment result	(7)	100.9	159.3	-36.7
of which net profit/loss from entities accounted for using the equity method		(-24.1)	(43.3)	-
of which other profit/loss from investments		(125.0)	(116.0)	7.8
Financial result	(8)	-380.4	194.6	-
of which finance income		(295.5)	(704.1)	-58.0
of which finance costs		(-675.9)	(-509.5)	32.7
Earnings before tax (EBT)		596.3	2,857.9	-79.1
Income tax	(9)	-128.7	-681.6	-81.1
Group net profit		467.6	2,176.3	-78.5
of which profit/loss shares attributable to non-controlling interests		(133.4)	(122.2)	9.2
of which profit/loss shares attributable to the shareholders of EnBW AG		(334.2)	(2,054.1)	-83.7
EnBW AG shares outstanding (million), weighted average		270.855	270.855	0.0
Earnings per share from Group net profit (€) ²	(23)	1.23	7.58	-83.7

¹ We publish the full set of consolidated financial statements at www.enbw.com/report2018-downloads.

² Diluted and basic; in relation to profit/loss attributable to the shareholders of EnBW AG.

Statement of comprehensive income

in € million ¹	2018	2017	Change in %
Group net profit	467.6	2,176.3	-78.5
Revaluation of pensions and similar obligations	-110.0	86.6	-
Income taxes on other comprehensive income	31.8	-14.7	-
Total of other comprehensive income and expenses without future reclassifications impacting earnings	-78.2	71.9	-
Currency translation differences	5.1	46.0	-88.9
Cash flow hedge	-143.8	4.5	-
Financial assets at fair value in equity	-16.2	-	-
Available-for-sale financial assets	-	103.8	-
Entities accounted for using the equity method	1.0	-4.1	-
Income taxes on other comprehensive income	81.5	-33.1	-
Total of other comprehensive income and expenses with future reclassifications impacting earnings	-72.4	117.1	-
Total other comprehensive income	-150.6	189.0	-
Total comprehensive income	317.0	2,365.3	-86.6
of which profit/loss shares attributable to non-controlling interests	(132.6)	(135.6)	-2.2
of which profit/loss shares attributable to the shareholders of EnBW AG	(184.4)	(2,229.7)	-91.7

¹ Further information is available in the notes under (18) "Equity". We publish the full set of consolidated financial statements at www.enbw.com/report2018-downloads.

Balance sheet

in € million ¹	Notes	31/12/2018	31/12/2017
Assets			
Non-current assets			
Intangible assets	(10)	1,748.7	1,905.9
Property, plant and equipment	(11)	15,867.5	15,597.4
Entities accounted for using the equity method	(12)	1,600.2	1,388.6
Other financial assets	(13)	5,426.5	5,985.7
Trade receivables	(14)	302.0	320.9
Other non-current assets	(15)	741.8	611.7
Deferred taxes	(20)	1,059.3	956.4
		26,746.0	26,766.6
Current assets			
Inventories		1,192.0	958.1
Financial assets	(16)	774.7	588.1
Trade receivables	(14)	4,515.7	4,408.7
Other current assets	(15)	3,788.9	2,847.1
Cash and cash equivalents	(17)	2,249.4	3,213.3
		12,520.7	12,015.3
Assets held for sale	(22)	342.3	3.0
		12,863.0	12,018.3
		39,609.0	38,784.9
Equity and liabilities			
Equity	(18)		
Shares of the shareholders of EnBW AG			
Subscribed capital		708.1	708.1
Capital reserve		774.2	774.2
Revenue reserves		4,676.4	3,636.6
Treasury shares		-204.1	-204.1
Other comprehensive income		-1,976.7	-1,367.4
		3,977.9	3,547.4
Non-controlling interests		2,295.4	2,315.5
		6,273.3	5,862.9
Non-current liabilities			
Provisions	(19)	13,246.0	13,124.5
Deferred taxes	(20)	774.8	799.4
Financial liabilities	(21)	6,341.4	5,952.0
Other liabilities and subsidies	(21)	1,674.7	2,043.8
		22,036.9	21,919.7
Current liabilities			
Provisions	(19)	1,549.9	1,598.7
Financial liabilities	(21)	654.8	1,306.8
Trade payables	(21)	5,039.8	4,838.1
Other liabilities and subsidies	(21)	4,033.1	3,258.7
		11,277.6	11,002.3
Liabilities directly associated with assets classified as held for sale	(22)	21.2	0.0
		11,298.8	11,002.3
		39,609.0	38,784.9

¹ We publish the full set of consolidated financial statements at www.enbw.com/report2018-downloads.

Cash flow statement

in € million ¹	2018	2017
1. Operating activities		
EBITDA	2,089.6	3,752.4
Changes in provisions	-394.6	-472.3
Result from disposals	-88.4	-317.8
Other non-cash-relevant expenses/income	-27.6	-68.1
Change in assets and liabilities from operating activities	-480.7	-4,671.4
Inventories	(-201.7)	(-27.3)
Net balance of trade receivables and payables	(49.6)	(277.6)
Net balance of other assets and liabilities	(-328.6)	(-4,921.7)
Income tax paid/received	-270.7	81.1
Cash flow from operating activities	827.6	-1,696.1
2. Investing activities		
Capital expenditure on intangible assets and property, plant and equipment	-1,369.5	-1,419.2
Disposals of intangible assets and property, plant and equipment	77.3	52.8
Cash received from subsidies for construction costs and investments, and tax refunds from recognised exploration expenditure	86.1	113.8
Acquisition of subsidiaries, entities accounted for using the equity method and interests in joint operations	-297.6	-227.9
Sale of subsidiaries, entities accounted for using the equity method and interests in joint operations	297.9	235.4
Cash paid for investments in other financial assets	-750.4	-721.2
Sale of other financial assets	765.3	3,491.0
Cash received/paid for investments in connection with short-term finance planning	10.5	44.3
Interest received	94.4	452.1
Dividends received	190.2	139.6
Cash flow from investing activities	-895.8	2,160.7
3. Financing activities		
Interest paid for financing activities	-247.0	-425.6
Dividends paid	-312.8	-84.7
Cash received for changes in ownership interest without loss of control	4.6	1.5
Increase in financial liabilities	1,125.1	302.3
Repayment of financial liabilities	-1,425.4	-1,279.8
Payments from alterations of capital in non-controlling interests	-51.8	-55.0
Cash flow from financing activities	-907.3	-1,541.3
Net change in cash and cash equivalents	-975.5	-1,076.7
Change in cash and cash equivalents due to changes in the consolidated companies	6.6	300.3
Net foreign exchange difference	5.5	-1.9
Change in cash and cash equivalents due to risk provisions	0.2	0.0
Change in cash and cash equivalents	-963.2	-778.3
Cash and cash equivalents at the beginning of the period ²	3,212.6	3,991.6
Cash and cash equivalents at the end of the period	2,249.4	3,213.3

¹ Further information is available in the notes under [31] "Notes to the cash flow statement". We publish the full set of consolidated financial statements at www.enbw.com/report2018-downloads.

² Explanation in the "Changes in accounting policies".

Statement of changes in equity

in € million ¹				Other comprehensive income							
	Sub- scribed capital and capital reserve ²	Revenue reserves	Treasury shares	Revaluation of pensions and similar obligations	Currency translation differences	Cash flow hedge	Financial assets at fair value in equity	Entities accounted for using the equity method	Shares of the share- holders of EnBW AG	Non-con- trolling interests	Total
As of 01/01/2017	1,482.3	1,582.5	-204.1	-1,784.6	-48.2	-97.7	383.1	4.4	1,317.7	1,898.5	3,216.2
Other comprehensive income				67.7	36.2	-11.5	87.3	-4.1	175.6	13.4	189.0
Group net profit		2,054.1							2,054.1	122.2	2,176.3
Total comprehensive income	0.0	2,054.1	0.0	67.7	36.2	-11.5	87.3	-4.1	2,229.7	135.6	2,365.3
Dividends									0.0	-84.7	-84.7
Other changes									0.0	366.1	366.1
As of 31/12/2017/ 01/01/2018	1,482.3	3,636.6	-204.1	-1,716.9	-12.0	-109.2	470.4	0.3	3,547.4	2,315.5	5,862.9
Changes in accounting policies		842.7					-459.5		383.2	11.7	394.9
As of 01/01/2018 after changes in accounting policies	1,482.3	4,479.3	-204.1	-1,716.9	-12.0	-109.2	10.9	0.3	3,930.6	2,327.2	6,257.8
Other comprehensive income				-74.6	3.2	-68.2	-11.2	1.0	-149.8	-0.8	-150.6
Group net profit		334.2							334.2	133.4	467.6
Total comprehensive income	0.0	334.2	0.0	-74.6	3.2	-68.2	-11.2	1.0	184.4	132.6	317.0
Dividends		-135.4							-135.4	-139.2	-274.6
Other changes ³		-1.7							-1.7	-25.2	-26.9
As of 31/12/2018	1,482.3	4,676.4	-204.1	-1,791.5	-8.8	-177.4	-0.3	1.3	3,977.9	2,295.4	6,273.3

1 Further information is available in the notes under [18] "Equity". We publish the full set of consolidated financial statements at www.enbw.com/report2018-downloads.

2 Of which subscribed capital €708.1 million (31/12/2017: €708.1 million, 01/01/2017: €708.1 million) and capital reserve €774.2 million (31/12/2017: €774.2 million, 01/01/2017: €774.2 million).

3 Of which changes in revenue reserves due to changes in ownership interest of subsidiaries without loss of control of €-1.7 million (31/12/2017: €0.0 million, 01/01/2017: €0.0 million). Of which changes in non-controlling interests due to changes in ownership interest of subsidiaries without loss of control amounting to €6.2 million (31/12/2017: €0.0 million, 01/01/2017: €0.0 million).

Information on the result of the audit of the consolidated financial statements and the combined management report of the company and the Group for the 2018 financial year

The condensed financial statements for the 2018 financial year that form part of the Integrated Annual Report do not include the notes to the consolidated financial statements and the declaration of corporate management 2018 of the EnBW Group and EnBW AG including the corporate governance report 2018. The full set of consolidated financial statements – including the notes to the consolidated financial statements – and the combined management report for the company and the Group, both for the 2018 financial year, were audited by KPMG AG Wirtschaftsprüfungsgesellschaft as the auditor and Group

auditor elected by the Annual General Meeting of EnBW Energie Baden-Württemberg AG on 8 May 2018. Based on its audit, KPMG AG Wirtschaftsprüfungsgesellschaft arrived at the overall conclusion that the audit did not lead to any reservations and issued an unqualified audit opinion. The full set of consolidated financial statements and the combined management report for the company and the Group, both for the 2018 financial year, as well as the unqualified audit opinion issued by the auditor, can be accessed on the website of EnBW Energie Baden-Württemberg AG.

Corporate bodies

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The Supervisory Board

Members

- **Lutz Feldmann, Bochum**
Independent business consultant
Chairman
- **Dietrich Herd, Philippsburg**
Chairman of the Group works council for the EnBW Group as well as Chairman of the central works council for the "generation sector" and Chairman of the Philippsburg nuclear power plant works council for the "generation sector" of EnBW Energie Baden-Württemberg AG, Karlsruhe, Deputy Chairman
- **Achim Binder, Stuttgart**
Deputy Chairman of the Group works council for the EnBW Group, Chairman of the central works council for the "grids sector" of EnBW Energie Baden-Württemberg AG and Chairman of the regional service works council of Netze BW GmbH, Stuttgart (since 1 January 2019)
- **Dr. Dietrich Birk, Göppingen**
Managing Director of the Verband Deutscher Maschinen- und Anlagenbau e.V. (VDMA), Regional Association for Baden-Württemberg
- **Stefanie Bürkle, Sigmaringen**
District Administrator of the Sigmaringen district
- **Stefan Paul Hamm, Gerlingen**
Union Secretary/Head of the Department for Utilities and Waste Management, ver.di Baden-Württemberg
- **Volker Hüsgen, Essen**
Member of the Group works council for the EnBW Group as well as Chairman of the works council and first Deputy Chairman of the Supervisory Board of Stadtwerke Düsseldorf AG (since 1 October 2018)
- **Michaela Kräutter, Stutensee**
Union Secretary for Utilities and Waste Management, ver.di Central Baden/North Black Forest district
- **Marianne Kugler-Wendt, Heilbronn**
Regional Director of ver.di for the districts Heilbronn-Neckar-Franconia and Rhine-Neckar
- **Thomas Landsbek, Wangen im Allgäu**
Member of the Group works council for the EnBW Group as well as Chairman of the central works council for the "market sector" and Chairman of the Stuttgart works council for the "market sector" of EnBW Energie Baden-Württemberg AG, Karlsruhe
- **Dr. Hubert Lienhard, Heidenheim an der Brenz**
Supervisory Board
- **Marika Lulay, Heppenheim**
Chairwoman of the Managing Directors (CEO) and member of the Board of Directors at GFT Technologies SE, Stuttgart (since 14 February 2019)
- **Dr. Wolf-Rüdiger Michel, Rottweil**
District Administrator of the Rottweil district
- **Gunda Röstel, Flöha**
Commercial Director of Stadtentwässerung Dresden GmbH and Authorised Officer of Gelsenwasser AG
- **Jürgen Schäfer, Bissingen**
Member of the Group works council for the EnBW Group and Deputy Chairman of the works council for TransnetBW GmbH, Stuttgart (since 1 January 2019)
- **Harald Sievers, Ravensburg**
District Administrator of the Ravensburg district (since 1 January 2019)
- **Edith Sitzmann MdL, Freiburg**
Minister for Finance of the Federal State of Baden-Württemberg and member of the State Parliament of Baden-Württemberg
- **Ulrike Weindel, Karlsruhe**
Chairwoman of the Karlsruhe works council for "functional units" of EnBW Energie Baden-Württemberg AG, Karlsruhe
- **Lothar Wölfle, Friedrichshafen**
District Administrator of the Lake Constance district
- **Dr. Bernd-Michael Zinow, Karlsruhe**
Head of the functional unit Legal Services, Auditing, Compliance and Regulation (General Counsel) at EnBW Energie Baden-Württemberg AG, Karlsruhe
- **Silke Krebs, Berlin**
Since 1 April 2018, Executive Consultant for Political Communication for the Alliance 90/Green Party parliamentary group in the German Bundestag
Until 31 March 2018, freelance consultant (strategic and organisational consultancy) (until 31 December 2018)
- **Sebastian Maier, Ellenberg**
Member of the Group works council for the EnBW Group and Chairman of the works council at EnBW Ostwürttemberg DonauRies Aktiengesellschaft (until 31 December 2018)
- **Arnold Messner, Aichwald**
Manager for special tasks at Netze BW GmbH, Stuttgart
Until 26 April 2018, Deputy Chairman of the Group works council for the EnBW Group and, until 26 April 2018, Chairman of the central works council of Netze BW GmbH (until 31 December 2018)
- **Klaus Schörnich, Düsseldorf**
Until 30 September 2018, member of the Group works council for the EnBW Group and, until 24 April 2018, Chairman of the works council of Stadtwerke Düsseldorf AG (until 30 September 2018)
- **Heinz Seiffert, Ehingen**
District Administrator (retired) (until 31 December 2018)

Status

- Active member
- Inactive member

Further information is available at:
www.enbw.com/supervisory-board

Committees

Personnel committee

- > **Lutz Feldmann**
Chairman
- > Achim Binder (since 1 January 2019)
- > Stefan Paul Hamm
- > Dietrich Herd
- > Edith Sitzmann (since 1 January 2019)
- > Lothar Wölfle
- > Silke Krebs (until 31 December 2018)
- > Arnold Messner (until 31 December 2018)

Audit committee

- > **Gunda Röstel**
Chairwoman
- > Stefanie Bürkle (since 1 January 2019)
- > Volker Hüsgen (since 1 October 2018)
- > Marianne Kugler-Wendt
- > Thomas Landsbek (since 1 January 2019)
- > Dr. Hubert Lienhard
- > Dr. Wolf-Rüdiger Michel
- > Ulrike Weindel
- > Sebastian Maier (until 31 December 2018)
- > Klaus Schörnich (until 30 September 2018)
- > Heinz Seiffert (until 31 December 2018)

Ad hoc committee (since 7 June 2010)

- > **Dr. Bernd-Michael Zinow**
Chairman
- > Dietrich Herd
- > Gunda Röstel
- > Harald Sievers (since 1 January 2019)
- > Stefanie Bürkle (until 31 December 2018)

Finance and investment committee

- > **Lutz Feldmann**
Chairman
- > Achim Binder (since 1 January 2019)
- > Dr. Dietrich Birk
- > Stefan Paul Hamm
- > Dietrich Herd
- > Edith Sitzmann
- > Lothar Wölfle
- > Dr. Bernd-Michael Zinow
- > Arnold Messner (until 31 December 2018)

Nomination committee

- > **Lutz Feldmann**
Chairman
- > Dr. Dietrich Birk
- > Dr. Wolf-Rüdiger Michel
(since 1 January 2019)
- > Gunda Röstel
- > Edith Sitzmann (since 1 January 2019)
- > Lothar Wölfle
- > Silke Krebs (until 31 December 2018)
- > Heinz Seiffert (until 31 December 2018)

Mediation committee (committee pursuant to section 27 (3) German Co-determination Act (MitbestG))

- > **Lutz Feldmann**
Chairman
- > Dietrich Herd
- > Thomas Landsbek
- > Edith Sitzmann (since 1 January 2019)
- > Silke Krebs (until 31 December 2018)

Digitalisation committee (since 1 January 2019)

- > **N. N.**
Chairman
- > Michaela Kräuter
- > Dr. Hubert Lienhard
- > Marika Lulay (since 14 February 2019)
- > Jürgen Schäfer
- > Harald Sievers
- > Ulrike Weindel

Status

- > Active member
- > Inactive member

Offices held by members of the Board of Management

- | | |
|--|---|
| <ul style="list-style-type: none"> > Dr. Frank Mastiaux
Chairman > Dr. Bernhard Beck <ul style="list-style-type: none"> – EnBW Kernkraft GmbH (Chairman) – Energiedienst AG – Stadtwerke Düsseldorf AG (Chairman) – BKK VerbundPlus, Körperschaft des öffentlichen Rechts (alternating Chairman) – Energiedienst Holding AG – Pražská energetika a.s. | <ul style="list-style-type: none"> > Thomas Kusterer <ul style="list-style-type: none"> – Netze BW GmbH – VNG AG (Chairman) > Colette Rückert-Hennen
(from 1 March 2019) > Dr. Hans-Josef Zimmer <ul style="list-style-type: none"> – EnBW Kernkraft GmbH – Netze BW GmbH (Chairman) – terranets bw GmbH (Chairman) – TransnetBW GmbH (Chairman) – Vorarlberger Illwerke AG |
|--|---|

Status

- > **Active member**
- > **Inactive member**

Disclosures of office holders pursuant to section 285 No. 10 German Commercial Code (HGB)

- Membership in other statutory supervisory boards
- Membership in comparable domestic and foreign control bodies of business enterprises

Further information is available at:
www.enbw.com/board-of-management

Other offices held by members of the Supervisory Board

- > **Lutz Feldmann**
Chairman
 - Villa Claudius gGmbH (Chairman since 1 October 2018)
 - Thyssen'sche Handelsgesellschaft mbH
- > **Dietrich Herd**
Deputy Chairman
 - EnBW Kernkraft GmbH
- > **Achim Binder**
 - Netze BW GmbH
 - NetCom BW GmbH (until 30 July 2018)
- > **Dr. Dietrich Birk**
 - SRH Holding (SdbR)
- > **Stefanie Bürkle**
 - SWEG Südwestdeutsche Landesverkehrs-AG
 - Hohenzollerische Landesbank
 - Kreissparkasse Sigmaringen, Anstalt des öffentlichen Rechts (Chairwoman)
 - Flugplatz Mengen Hohentengen GmbH (Chairwoman)
 - SRH Kliniken Landkreis Sigmaringen GmbH (Chairwoman)
 - Sparkassenverband Baden-Württemberg, Anstalt des öffentlichen Rechts
 - Verkehrsverbund Neckar-Alb-Donau GmbH (naldo) (Chairwoman)
 - Wirtschaftsförderungs- und Standortmarketinggesellschaft Landkreis Sigmaringen mbH (Chairwoman)
 - Zweckverband Oberschwäbische Elektrizitätswerke (Deputy Chairwoman)
 - Zweckverband Thermische Abfallverwertung Donautal (TAD) (Deputy Chairwoman)
- > **Stefan Paul Hamm**
 - Netze BW GmbH
- > **Volker Hüsgen**
 - AWISTA GmbH (since 1 October 2018)
 - Netzgesellschaft Düsseldorf mbH (since 12 July 2018)
 - Stadtwerke Düsseldorf AG
 - RheinWerke GmbH (since 7 June 2018)
- > **Michaela Kräutter**
 - NetCom BW GmbH (until 30 July 2018)
 - Netze BW GmbH (since 14 August 2018)
- > **Marianne Kugler-Wendt**
 - Bausparkasse Schwäbisch-Hall AG
 - EnBW Kernkraft GmbH
 - SLK-Kliniken Heilbronn GmbH
 - Heilbronner Versorgungs GmbH
 - Stadtwerke Heilbronn GmbH
- > **Thomas Landsbek**
 - Gemeindewerke Bodanrück GmbH & Co. KG
 - BürgerEnergiegenossenschaft Region Wangen im Allgäu eG
- > **Dr. Hubert Lienhard**
 - Heraeus Holding GmbH
 - SGL Carbon SE (until 29 May 2018)
 - SMS Group GmbH
 - Voith GmbH & Co. KGaA (since 1 April 2018)
 - Voith Management GmbH (since 1 April 2018)
 - Voith Turbo Beteiligungen GmbH (Chairman) (until 31 March 2018)
 - Broetje Automation (Chairman) (since 27 July 2018)
 - Heitkamp & Thumann KG (since 24 April 2018)
 - Voith Hydro Holding GmbH & Co. KG (Chairman) (until 31 March 2018)
 - Voith Turbo GmbH & Co. KG (Chairman) (until 31 March 2018)
 - Voith Digital Solutions Holding GmbH (Chairman) (until 31 March 2018)
- > **Marika Lulay**
 - Wüstenrot & Württembergische AG
- > **Dr. Wolf-Rüdiger Michel**
 - Kreisbaugenossenschaft Rottweil e.G. (Chairman)
 - ITEOS, Anstalt des öffentlichen Rechts (since 1 July 2018)
 - Kreissparkasse Rottweil, Anstalt des öffentlichen Rechts (Chairman)
 - Schwarzwald Tourismus GmbH
 - SMF Schwarzwald Musikfestival GmbH
 - Sparkassen-Beteiligungen Baden-Württemberg GmbH
 - Sparkassenverband Baden-Württemberg, Körperschaft des öffentlichen Rechts
 - Wirtschaftsförderungsgesellschaft Schwarzwald-Baar-Heuberg mbH
 - Zweckverband Bauernmuseum Horb/Sulz
 - Zweckverband Kommunale Informationsverarbeitung Reutlingen-Ulm (until 30 June 2018)
 - Zweckverband Oberschwäbische Elektrizitätswerke (Deputy Chairman)
 - Zweckverband Protec (until 31 December 2018)
 - Zweckverband Ringzug Schwarzwald-Baar-Heuberg
 - Zweckverband RBB Restmüllheizkraftwerk Böblingen (since 1 January 2019)
 - ZTN-Süd Warthausen (since 1 January 2019)

Status

- > **Active member**
- > **Inactive member**

Disclosures of office holders pursuant to section 285 No. 10 German Commercial Code (HGB)

- Membership in other statutory supervisory boards
- Membership in comparable domestic and foreign control bodies of business enterprises

Further information is available at:
www.enbw.com/supervisory-board

- > **Gunda Röstel**
 - Universitätsklinikum Carl Gustav Carus Dresden an der Technischen Universität Dresden, Anstalt des öffentlichen Rechts (Deputy Chairwoman)
 - VNG AG
 - Netze BW GmbH
 - Hochschulrat der Technischen Universität Dresden, Körperschaft des öffentlichen Rechts (Chairwoman)
 - Stadtwerke Burg GmbH
- > **Jürgen Schäfer**
- > **Harald Sievers**
 - Oberschwabenklinik GmbH (Chairman)
 - Gesellschaft für Wirtschafts- und Innovationsförderung Landkreis Ravensburg mbH (WiR) (Chairman)
 - Ravensburger Entsorgungsanlagen-gesellschaft mbH (REAG) (Chairman)
 - Bodensee-Oberschwaben Verkehrsverbundgesellschaft mbH (Deputy Chairman)
 - Bodensee-Oberschwaben-Bahn VerwaltungsGmbH
 - Kreissparkasse Ravensburg (Chairman of the Administrative Board)
 - SV SparkassenVersicherung – Lebensversicherung AG
 - Zweckverband Oberschwäbische Elektrizitätswerke
- > **Edith Sitzmann**
 - Landesbank Baden-Württemberg, Anstalt des öffentlichen Rechts (Deputy Chairwoman)
 - Landeskreditbank Baden-Württemberg, Förderbank, Anstalt des öffentlichen Rechts (Chairwoman of the Administrative Board) (Chairwoman of the Advisory Board)
 - Kreditanstalt für Wiederaufbau, Anstalt des öffentlichen Rechts
 - Baden-Württemberg Stiftung gGmbH
- > **Ulrike Weindel**
- > **Lothar Wölfle**
 - Abfallwirtschaftsgesellschaft of the Bodenseekreis and Konstanz districts (Chairman)
 - Verkehrsverbund Bodensee-Oberschwaben der Landkreise Bodenseekreis, Lindau und Ravensburg (Chairman) (until 31 December 2018)
 - Bodensee-Oberschwaben-Bahn Verkehrsgesellschaft mbH
 - Sparkasse Bodensee (Chairman)
 - Zweckverband Oberschwäbische Elektrizitätswerke (Chairman)
 - Zweckverband Tierkörperbeseitigung Protec (Deputy Chairman) (until 31 December 2018)
 - Wirtschaftsförderungsgesellschaft Bodenseekreis GmbH (Chairman)
 - Regionales Innovations- und Technologietransfer Zentrum GmbH (RITZ) (Chairman) (until 31 December 2018), (Deputy Chairman) (since 1 January 2019)
- > **Dr. Bernd-Michael Zinow**
 - TransnetBW GmbH
 - VNG AG
- > **Silke Krebs**
- > **Sebastian Maier**
 - EnBW Ostwürttemberg DonauRies AG (until 31 December 2018)
 - NetCom BW GmbH (until 31 December 2018)
 - Netzgesellschaft Ostwürttemberg GmbH (until 31 December 2018)
- > **Arnold Messner**
 - Netze BW GmbH (until 31 December 2018)
- > **Klaus Schörnich**
 - AWISTA GmbH (until 30 September 2018)
 - Netzgesellschaft Düsseldorf mbH (until 30 September 2018)
- > **Heinz Seiffert**

Status

- > **Active member**
- > **Inactive member**

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Financial calendar 2019

Intelligently networked – infrastructure of the future

Financial terms

Adjusted EBITDA

The operating earnings of companies are often measured based on adjusted EBITDA (earnings before interest, taxes, depreciation and amortisation). It describes earnings before the investment and financial results, income taxes and amortisation, adjusted for non-operating effects. The key performance indicator adjusted EBITDA is the central earnings indicator for EnBW.

Adjusted earnings figures

Adjusted earnings figures are operational earnings figures that are adjusted for non-operating effects. They include, amongst others, adjusted EBIT and adjusted Group net profit.

Adjusted retained cash flow

The adjusted retained cash flow is the > retained cash flow adjusted to take into account the extraordinary effect of the reimbursement of the > nuclear fuel rod tax in 2017. In the 2018 financial year, the reimbursed funds were used for the repayment of debt and for strategic investments. We plan to distribute the remaining amount on a straight line basis in the period 2019 to 2020, also for the purpose of strategic investment. Accordingly, this will lead to an increase in the adjusted retained cash flow over the period 2018 to 2020.

Capital employed

Capital employed comprises all assets from the operating business. At EnBW, it primarily comprises property, plant and equipment in the form of power plants or grids. Non-interest-bearing liabilities – such as trade payables – are deducted.

EBIT

EBIT stands for earnings before interest and taxes.

EBITDA

EBITDA stands for earnings before interest, taxes, depreciation and amortisation.

EBT

EBT stands for earnings before taxes.

Free cash flow

The cash flow freely available to the company for the distribution of dividends and for the repayment of debt.

Funds from operations (FFO)

Funds from operations (FFO) is the cash-relevant earnings from operating activities that is available to the company for investments, the distribution of dividends and the repayment of debt.

Internal financing capability

The key performance indicator internal financing capability describes the > adjusted retained cash flow in relation to the cash-relevant > net investment and is the most significant performance indicator for the Group's ability to finance its activities internally.

Net financial debt

Net financial debt comprises the financial liabilities (including financial leasing) taken on by the company less cash and cash equivalents and financial assets that are available to the company for its operating business. Financial liabilities are adjusted for valuation effects from interest-induced hedging transactions and for the portion of equity for the hybrid bonds.

Net (cash) investment

Cash-relevant net investment describes the overall cash-relevant investment less the overall cash-relevant divestitures in the relevant financial year.

Net debt

Net debt comprises > net financial debt and the > net debt relating to pension and nuclear obligations.

Net debt relating to pension and nuclear obligations

Net debt relating to pension and nuclear obligations comprises the provisions for pensions and similar obligations and provisions relating to nuclear power. These provisions are netted against receivables relating to the dismantling of nuclear power plants and the > dedicated financial assets.

Non-operating figures

The non-operating figures include effects that cannot be predicted or cannot be directly influenced by EnBW and as such are not relevant to the ongoing management of the company. They include, amongst others, non-operating EBIT and non-operating Group net profit/loss.

Retained cash flow

The retained cash flow is decisive for the > internal financing capability of EnBW. After covering ongoing costs and dividend payments, it is available to the company for investment without the need to raise additional debt.

ROCE

ROCE is the return on capital employed in a company. The key performance indicator ROCE describes the relationship between adjusted EBIT including the adjusted investment result and the average capital employed and is thus the central value-oriented performance indicator of EnBW for assessing the return on capital employed in the relevant financial year.

WACC

WACC stands for the weighted average cost of capital and is used in combination with value-based performance indicators. The cost of capital is determined based on the weighted average cost of equity and debt together.

Glossary

A

Asset liability management (ALM) model

A model for asset liability and cash flow management. A cash flow-based model is used to determine the effects of the pension and nuclear provisions on the balance sheet, income statement and cash flow statement over the next 30 years. This ensures that the Group can cover its long-term pension and nuclear provisions within an economically viable time period using corresponding financial investments (so-called > [dedicated financial assets](#)).

Asset management

A financial asset management system facilitates the active management of investments that are used to cover pension and nuclear provisions. The central focus of this activity is to generate appropriate returns while taking into account the risks incurred.

B

Base

Base load product. The constant base level of supply/demand over a period of time.

Broadband infrastructure

EnBW supports local authorities and municipal associations with tasks ranging from broadband planning and the installation of the infrastructure through to operation, as well as with the associated end-customer business (Internet, telephone and television).

Bundle

Product bundling (bundle offer) describes offering multiple products or services together in one package. Customers receive a suitable add-on in addition to their purchase.

C

Cash pooling

Daily pooling of the cash or cash equivalents of one or multiple companies within a Group with the target of concentrating and transparently depicting them at the level of the parent company in order to optimise the interest result.

Certified Emission Reduction (CER)

Certified emission reductions from Clean Development Mechanism (CDM) projects. Pursuant to the Kyoto protocol, investors in industrialised countries earn these in developing countries with CDM emission reduction projects. 1 CER corresponds to 1 t CO₂. CERs can be used by companies to meet the obligation to return allowances under the European emissions trading system.

Clean Dark Spread (CDS)

The difference between the electricity price and the generation costs for a typical coal power station, which is calculated using the coal price, CO₂ allowance price and the degree of efficiency of the power station.

CO₂ allowances

CO₂ allowances have been traded on the Leipzig electricity exchange since 2005. If a company purchases a CO₂ allowance, it is entitled to emit 1 t CO₂.

CO₂ intensity

In the energy sector, CO₂ intensity refers to CO₂ emissions connected with electricity generation. It is measured in terms of g/kWh or t/MWh. CO₂ intensity as referred to here in the energy sector should not be confused with the meaning used in the wider economy.

Commercial paper (CP) programme

The CP programme is a flexible financing instrument and serves to issue unsecured bonds on the money market for the purpose of short-term financing.

Community energy cooperatives

Community energy cooperatives are players in the energy industry with the legal form of a cooperative, mostly with the aim of decentralised, independent and ecological energy generation. They are a form of citizen participation, primarily at a local authority or regional level. Community energy cooperatives offer citizens the opportunity to contribute to the Energiewende and climate protection through investment in local and regional energy projects.

Coverage ratio

Coverage of the pension and nuclear provisions of the Group by financial assets in the > [dedicated financial assets](#).

CSR performance

CSR performance provides an indication of a company's entire sustainability performance. It examines measures to protect the environment and human rights, promote good working conditions and fight corruption within the traditional dimension of corporate social responsibility (CSR) and also focuses on which processes a company has established to guarantee them.

D

Debt Issuance Programme (DIP)

The DIP, also known as EMTN (Euro Medium Term Notes), is a standardised documentation platform for raising debt through the issuing of medium and long-term bonds on the capital market.

Dedicated financial assets

Dedicated financial assets are cash and cash equivalents and financial assets that are held to cover the pension and nuclear obligations.

Derivatives

Financial instruments whose price or market rate is derived from its underlying asset.

District development

District development deals with smart and sustainable urban planning, as well as connecting up, constructing and operating modern residential districts. It comprises urban infrastructure themes such as energy, grids, e-mobility, digital networking, safety and smart services.

E

EEG cost allocations

Cost allocations under the EEG (Renewable Energies Act) are charged by the transmission system operators (TSO). On the one hand, the cost allocations cover the difference between the income generated by the transmission system operators from selling the electricity from EEG plants and the expenses incurred by the transmission system operators for the fixed feed-in remuneration and market premium payments to direct marketers of EEG plants, while on the other hand, they also cover the costs of implementing the EEG. More than half of the electricity price for household customers today consists of taxes, duties and cost allocations. The EEG cost allocation accounts for the largest share.

Electromobility charging infrastructure

There are currently four different types of electrical connectors for charging electric vehicles. An AC charging station provides alternating current with up to 3.6 kW of electricity via a Schuko connector and up to 22 kW of electricity via a type-2 connector at each charging point. An AC/DC charging station (quick-charging station) is equipped with a CCS and CHAdeMO connector providing up to 50 kW (DC = direct current) of electricity and with a type-2 connector providing up to 43 kW (AC = alternating current) of electricity. A charging station can have multiple charging points. The actual charging output is dependent on how quickly a vehicle can charge. Starting in 2019, existing locations will be upgraded with quick-charging stations with a charging output of up to 150 kW.

Energy saving contracting

The cross-discipline optimisation of building technology together with building operation based on cooperation in partnership. Investments in renovations or efficiency enhancement measures are financed through energy cost-savings.

Energy supply contracting

The outsourcing, for a specific period and for a specific area, of tasks relating to energy optimisation or utility energy supplies to a third party.

EPEX

The European Power Exchange (EPEX SPOT SE) is a stock exchange for the short-term wholesale trading of electricity in Germany, France, Austria, Switzerland and Luxembourg.

EU allowance (EUA)

EU emission allowance. An EUA entitles a company to emit 1 t CO₂. Each EU state allocates its supply of EUAs (1 EUA = 1 t CO₂) to its national companies either free of charge or via auctions.

F

Forward market

Market on which the supply and procurement of electricity, fuel and CO₂ allowances are traded for a future period. Usual periods include weeks, months, quarters and years. Settlement can be either physical or financial. The forward market has the primary function of acting as a price hedge.

G

GASPOOL

GASPOOL Balancing Services GmbH, based in Berlin, is one of two market area managers on the German natural gas market. Market area managers are joint ventures formed by multiple independent transmission system operators. The gas grid operators GASCADE Gastransport GmbH, Gasunie Deutschland GmbH & Co. KG, ONTRAS Gastransport GmbH and Dong Energy Pipelines GmbH combined their respective market areas in 2009 and thus created a cross-regional market area co-operation. The company GASPOOL Balancing Services GmbH was founded for this purpose.

Green bonds

Green bonds are issued exclusively to finance climate-friendly projects. The proceeds from the bond are invested in sustainable environmental and climate protection projects, such as wind farms, photovoltaic power plants or environmentally friendly mobility concepts. The Green Bond Principles define minimum requirements with respect to the integrity and transparency of these bonds, including the selection process for the projects, disclosing the use of the funds and defining reporting requirements. EnBW issued its first green bond taking into account the Green Bond Principles.

Greenhouse gas emissions

The increase in the concentration of various greenhouse gases, especially carbon dioxide (CO₂), increases the greenhouse effect and leads to global warming, which itself has many consequences. Alongside carbon dioxide, other greenhouse gases include methane, nitrous oxide, fluorinated hydrocarbons, sulphur hexafluoride and nitrogen trifluoride.

Grid topology

Grid topology describes the structure of the supply network and is developed primarily based on the criteria of security of supply, investment and operating costs, load density, spatial conditions and the function of the grids (transmission grid, distribution grid). Common grid topologies are star, ring and mesh networks, as well as mixed forms of these basic structures.

H

Hedging

Hedging is a structured approach for securing against financial risks through financial transactions. Hedging involves engaging in countertrade transactions to offset a transaction or an existing position. This is usually carried out in the form of futures contracts.

HVDC

High-voltage DC transmission lines (HVDC) are used to transport electrical energy across large distances. The transmission lines use direct current for transportation as the transmission losses are lower.

Independent Transmission Operator (ITO)

The "Independent Transmission Operators" must fulfil the European unbundling regulations for greater liberalisation of the electricity and natural gas markets (3rd EU internal energy market package), that were implemented in the German Energy Industry Act (EnWG) in 2011. The aim of the unbundling regulations defined in the EnWG is to increase competition on the European energy market. An important prerequisite here is that the transmission grids are made available to all market participants as a neutral platform in a non-discriminatory way.

Intraday trading

Intraday trading of electricity is carried out on both the EPEX SPOT in Paris and the OTC (Over-the-Counter) market, i.e. via contracts negotiated off-exchange between electricity purchasers and sellers. It describes the continuous purchase and sale of electricity that is delivered on the same day. Therefore, it is also described as short-term wholesale electricity trading.

Investment-grade rating

An investment-grade rating exists if a credit rating of at least Baa3 (Moody's) or BBB- (Standard & Poor's) has been issued.

N

NCG

NetConnect Germany, a market area operator on the German natural gas market; NetConnect Germany GmbH & Co. KG (NCG), based in Ratingen, is one of two market area managers on the German natural gas market. Market area managers are joint ventures formed by multiple independent transmission system operators.

Network Development Plan Gas (NDP Gas)

In the NDP Gas, German gas transmission system operators calculate the transportation capacities that they will require in the future. The plan is prepared every two years in close cooperation with the German Federal Network Agency (BNetzA) and in consultation with relevant market participants.

Network Development Plan Electricity (NDP Electricity)

This plan describes the measures that need to be deployed over the next 10 and 20 years to expand and restructure the German land-based high-voltage grid to ensure the secure operation of the network. These measures make a significant contribution to the integration of rapidly growing renewable energies and thus also to the Energiewende. The NDP Electricity is prepared jointly by the four German transmission system operators every two years (since 2016), before being submitted to the German Federal Network Agency (BNetzA) as the responsible regulator.

Nuclear fuel rod tax

This tax was imposed from 2011 to 2016 at a rate of €145/g of nuclear fuel employed. However, it was declared unconstitutional on 7 June 2017 and also repaid to all energy supply companies in 2017.

P

Pari passu clause

A pari passu clause (Latin "pari passu" = on equal footing) is an obligation in financial agreements (for example, in bond agreements or loan agreements). The debtor/issuer obligates themselves during the term of the uncollateralised financial liability (for example, bond or loan) to the principle of equality, meaning future uncollateralised financial liabilities will not be given precedence over the existing financial liability.

R

Repowering

Old power plants for generating energy are replaced by newer and more efficient ones. The term is mainly used in connection with wind turbines.

S

Sectoral productivity factor (Xgen)

The sectoral productivity factor (Xgen) reflects the difference between cost developments in the efficient operation of electricity and gas grids and the development of prices within the whole economy. It is used as an adjustment factor for the consumer price index and is taken into account in the revenue cap for the grid operators.

Sector coupling

Sector coupling is the networking of electricity, heating, mobility and industrial processes for the purpose of lowering carbon dioxide emissions. As sector coupling offers synergy effects in the integration of high proportions of renewable energies, it is viewed as a key concept for the Energiewende and the development of energy systems using 100% renewable energies. There is a general consensus that sector coupling is necessary for the implementation of the Energiewende and the achievement of climate protection targets.

Smart grid

The smart electricity grid: a communication and control network that monitors and optimises the operation of its interconnected elements – from electricity generators, storage systems, consumers of electricity and network operating equipment in energy transmission and distribution grids. The aim is to optimise the supply of energy by operating the system efficiently, reliably and cost-effectively.

Smart meters

A combination of a modern measurement system and a data communication module (smart meter gateway). The smart meter can be securely integrated into a communication network.

Spot market

Market on which electricity supply and procurement quantities are offered and requested for the following day.

Spread

This term describes here the difference in the electricity price and the costs for coal, gas or brown coal and emissions allowances used for the generation of electricity.

System services

The complete set of services required to ensure the quality of electricity supplies: provision of operating reserves, maintaining frequency stability, maintaining voltage levels, re-establishing supply, management services.

T

TCFD (Task Force on Climate-related Financial Disclosures)

The Task Force on Climate-related Financial Disclosures (TCFD) has developed recommendations for the climate-related opportunity and risk reporting by companies. Companies are encouraged to disclose climate-related information – in the four key areas of Governance, Strategy, Risk Management and Metrics and Targets – where such information is considered material for the company. EnBW is represented on the international task force appointed by the G20 through its Chief Financial Officer Thomas Kusterer (www.fsb-tcfd.org).

TEG (Technical Expert Group on Sustainable Finance)

The European Commission set up an expert group in July 2018 with the task of drawing up key aspects for the development of a sustainable financial system for the European internal market. Alongside the development of a taxonomy for sustainable economic activity, the aim is to develop minimum standards for green bonds and sustainability benchmarks, as well as to update the non-binding guidelines on non-financial disclosure while paying particular consideration to climate-related information. The Chief Financial Officer of EnBW, Thomas Kusterer, was appointed to the expert group.

Treasury

Department of the company that deals with liquidity management (disposition, liquidity planning, money markets), currency management (hedging against foreign exchange risks, obtaining foreign currencies) and interest management (hedging against risks due to changes in interest rates, managing the interest rate position).

V

Virtual power plant

A virtual power plant is a business segment where products are marketed through a single platform that increases the value of decentralised energy plants – renewable energies, storage systems, loads – by bundling, marketing and optimising them together.

Multi-year overview

Financial and strategic performance indicators

EnBW Group		2018	2017	2016	2015	2014
Earnings						
External revenue	in € million	20,618	21,974	19,368	21,167	21,003
TOP Adjusted EBITDA	in € million	2,158	2,113	1,939	2,110	2,167
EBITDA	in € million	2,090	3,752	731	1,918	2,137
Adjusted EBIT	in € million	958	999	1,025	1,182	1,291
EBIT	in € million	876	2,504	-1,663	277	0
Group net profit/loss ¹	in € million	334	2,054	-1,797	158	-466
Earnings per share from Group net profit/loss ¹	in €	1.23	7.58	-6.64	0.58	-1.72
Balance sheet						
Non-current assets	in € million	24,643	24,878	23,382	24,388	25,995
Total assets	in € million	39,609	38,785	38,535	38,158	38,312
Equity	in € million	6,273	5,863	3,216	5,123	4,546
Equity ratio	in %	15.8	15.1	8.3	13.4	11.9
Net financial debt	in € million	3,738	2,918	3,654	3,329	4,403
Coverage ratio ALM ²	in %	51.8	53.3	60.8	74.2	— ³
Cash flow						
Retained cash flow	in € million	999	3,050	950	1,718	— ³
TOP Internal financing capability	in %	93.2	111.9	72.1	347.8	— ³
Total investments	in € million	1,770	1,770	2,585	1,462	1,957
Profitability						
TOP Return on capital employed (ROCE) ²	in %	6.5	7.3	7.8	9.5	10.0
Weighted average cost of capital before tax	in %	6.3	6.3	6.9	6.9	7.2
Average capital employed ²	in € million	16,053	15,120	13,761	13,627	13,424
Value added ²	in € million	32	151	124	354	376
Sales						
Electricity ⁴	in billions of kWh	137	122	115	115	126
Gas	in billions of kWh	328	250	139	135	117

Financial and strategic performance indicators

EnBW Group		2018	2017	2016	2015	2014
Sales						
Electricity sales	in billions of kWh	37	40	44	48	48
Gas sales	in billions of kWh	57	57	54	82	72
External revenue	in € million	7,061	7,354	7,771	9,061	9,067
TOP Adjusted EBITDA	in € million	271	330	250	255	231
Grids						
External revenue	in € million	3,215	7,472	6,644	6,351	6,231
TOP Adjusted EBITDA	in € million	1,177	1,046	1,004	747	886
Renewable Energies						
Electricity sales	in billions of kWh	2	2	3	3	4
External revenue	in € million	478	508	511	447	407
TOP Adjusted EBITDA	in € million	298	332	295	287	191
Generation and Trading						
Electricity sales	in billions of kWh	97	80	68	65	75
Gas sales	in billions of kWh	272	193	85	53	45
External revenue	in € million	9,856	6,631	4,434	5,300	5,290
TOP Adjusted EBITDA	in € million	429	377	337	777	900

1 In relation to the profit/loss attributable to the shareholders of EnBW AG.

2 The figures for the 2017 financial year have been restated.

3 No figures for the comparative period 2014 are available for the new performance indicators.

Non-financial performance indicators

EnBW Group		2018	2017	2016	2015	2014
Customers and society goal dimension						
TOP Reputation Index		51.3	52.1	50.0	48.5	- ¹
TOP EnBW/Yello Customer Satisfaction Index ²		120 / 152	143 / 161	132 / 150	136 / 152	114 / 145
TOP SAIDI (electricity) in min./year		17	19	16	15	15
Employees goal dimension						
TOP Employee Commitment Index (ECI) ³		62	60	59	60	56
TOP LTIF ⁴		2.3	3.0	3.9	3.8	4.3
Environment goal dimension						
TOP Installed output of renewable energies (RE) in GW and the share of the generation capacity accounted for by RE in % ⁵		3.7 / 27.9	3.4 / 25.8	3.1 / 23.1	3.1 / 23.6	2.6 / 19.1
TOP CO ₂ intensity in g/kWh		553	556	577	606	- ¹

1 No figures for the comparative period 2014 are available for the new performance indicators.

2 EnBW has been working together with a new market research company since 2017. Despite using the same survey methodology and random sampling, current and earlier values are only comparable to a limited extent.

3 Variations in the group of consolidated companies (consideration of companies controlled by the Group [without ITOs]).

4 Variations in the group of consolidated companies (consideration of all employees at those companies controlled by the Group, except external agency workers and contractors).

5 The figures for the 2017 financial year have been restated.

Highlights 2018



EnBW achieved a series of successes in 2018. They included, amongst other things, the construction and expansion of charging infrastructure.



Expansion of e-mobility

EnBW made further progress in the area of e-mobility in 2018. This included, amongst other things, the construction and expansion of charging infrastructure with other cooperation partners, such as Tank & Rast, OMV, EURONICS, ECE and hagebau, the award-winning EnBW mobility+ app with new functions, the BMW i3 leasing offer for EnBW employees, the start of the "E-Mobility Avenue" pilot project in Ostfildern by Netze BW and the award of the "SAFE" project funding to a consortium consisting of EnBW, public utilities and local authorities.

Bosch and EnBW inaugurate new battery storage system

The battery storage system with a 5 MW output that was jointly developed by Bosch and EnBW was inaugurated at the Heilbronn power plant site in April. It will enable the power plant to respond better to fluctuating decentralised feed-ins from renewable energies.

EnBW strengthens its position on the growth market for decentralised energy solutions

EnBW became a full-service provider for home energy solutions by acquiring Deutsche Energieversorgung GmbH (DEV). DEV has sold more than 20,000 electricity storage systems under the name SENEK and is one of the most important suppliers on the German home electricity storage market. DEV was renamed as SENEK GmbH in autumn.

EnBW receives fourth and final approval for the dismantling of the Obrigheim nuclear power plant

In April, EnBW received the fourth and final dismantling approval for the Obrigheim nuclear power plant (KW0) from the Baden-Württemberg Ministry for the Environment. The dismantling work is due to be completed within the guidelines laid down by the Atomic Energy Law by the mid-2020s. Overall, all five of the EnBW nuclear power plants are now already involved in the dismantling process.

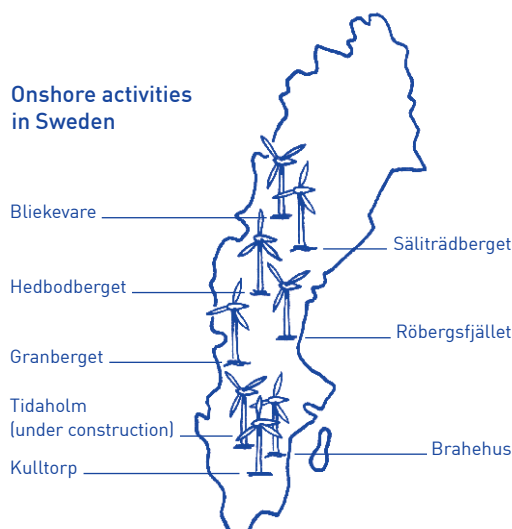
Start of construction of the EnBW Hohe See and EnBW Albatros wind farms

Since April 2018, our offshore wind farms EnBW Hohe See and EnBW Albatros have been under construction in the German North Sea. The combined total of 87 wind turbines with an output of 609 MW are due to be placed into operation by the end of 2019, generating around 2.5 billion kWh of electricity. EnBW is continuing to focus on its core country of Germany for expansion but is also looking at international markets, working with partners on offshore projects in North America and Taiwan and onshore in Sweden, France and Turkey.



EnBW issues its first green bond

EnBW successfully issued its first green bond with a volume of €500 million and a term to maturity of 15 years on the capital market in October. It was thus one of the first German companies to issue a green bond of this magnitude. The proceeds from the bond will flow into wind power, photovoltaic and electromobility projects.



Photovoltaic auction proves successful for EnBW

In the first joint auction for photovoltaic and onshore wind energy projects held by the Federal Network Agency, EnBW had bids for three solar parks with a total output of 18 MW accepted. The EnBW solar parks Löffingen and Ingoldingen with a total output of around 7 MW were placed into operation in 2018.

Major contract for RBS wave as general planner for expansion of broadband network in the Rastatt district

In the promising broadband business, the company RBS wave, a subsidiary of Netze BW, secured the contract in a Europe-wide tender process in July to develop a broadband network for the Rastatt administrative district as the general planner. In the largest project to date in the history of the company, RBS wave will plan, amongst other things, the fibre-optic backbone network.

EnBW acquires 7 wind farms in Sweden

Following the foundation of the Swedish subsidiary EnBW Sverige AB and the start of construction of a wind farm with an output of around 11 MW, EnBW acquired two operating companies with seven wind farms in Sweden at the end of the year – with a total installed output of 105 MW. EnBW also founded a branch office in France in June in order to expand into the onshore wind and photovoltaic sectors in the country.

Sweden is the second foreign market within Europe that EnBW has selected for further growth in the area of onshore wind energy over the next few years.

Important notes

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The complete consolidated financial statements prepared by EnBW Energie Baden-Württemberg AG and audited by KPMG AG Wirtschaftsprüfungsgesellschaft, Frankfurt am Main, and the management report, which is combined with the Group management report, will be published in the German Federal Gazette ("Bundesanzeiger") together with the unqualified audit opinion. The necessary documents will be submitted to the German Federal Gazette ("Bundesanzeiger") by 30 April 2019 at the latest.

No offer or investment recommendation

This report has been prepared for information purposes only. It does not constitute an offer, an invitation or a recommendation to purchase or sell securities issued by EnBW Energie Baden-Württemberg AG (EnBW), a company of the EnBW Group or any other company. This report also does not constitute a request, invitation or recommendation to vote or give consent. All descriptions, examples and calculations are included in this report for illustrative purposes only.

Forward-looking statements

This report contains forward-looking statements which are based on current assumptions, plans, estimates and forecasts made by the management of EnBW. Forward-looking statements of this kind are therefore only valid at the time they were first published. Forward-looking statements are indicated by the context, but may also be identified by the use of the words "can", "will", "should", "plans", "intends", "expects", "thinks", "estimates", "forecasts", "potential", "continued" and similar expressions.

By nature, forward-looking statements are subject to risks and uncertainties that cannot be controlled or accurately predicted by EnBW. Actual events, future results, the financial position, development or performance of EnBW and the companies of the EnBW Group may therefore diverge considerably from the forward-looking statements made in this report. Therefore, it cannot be guaranteed nor can any liability otherwise be assumed that these forward-looking statements will prove complete, correct or precise, or that expected and forecast results will actually occur in the future.

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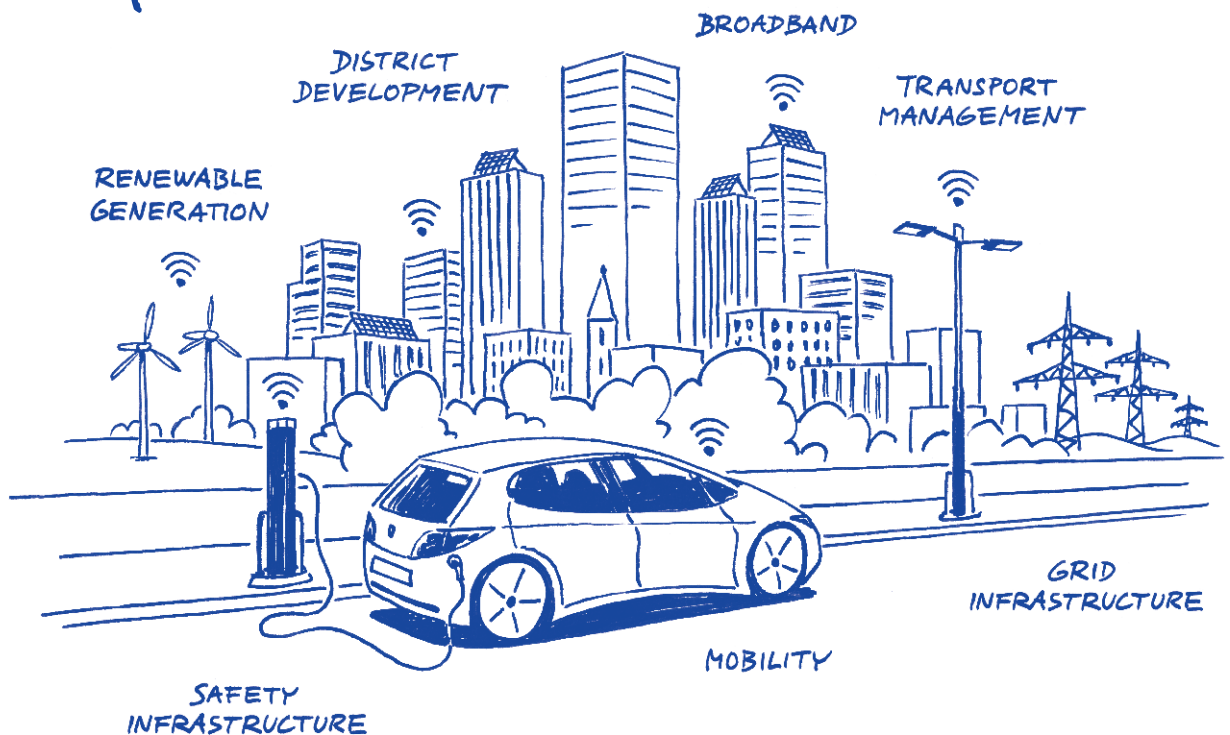
EnBW assumes no obligation of any kind to update the information contained in this report or to adjust or otherwise update forward-looking statements to future events or developments. This Annual Report can also be downloaded from the Internet in German or English. In cases of doubt, the German version shall be authoritative.



Financial calendar 2019

- **28 March 2019**
Publication of the Integrated Annual Report 2018
- **8 May 2019**
Annual General Meeting 2019
- **10 May 2019**
Publication of the Quarterly Statement January to March 2019
- **25 July 2019**
Publication of the Six-Monthly Financial Report January to June 2019
- **8 November 2019**
Publication of the Quarterly Statement January to September 2019

Intelligently networked - infrastructure of the future



All areas of our lives are becoming more interlinked and the boundaries between living, working and free time are less well defined. EnBW has the tools to handle these changes: energy and the infrastructure for each task.

Using our core expertise, we are focussing on, for example, the development of sustainable mobility and safe transport management, as well as stable communications and innovative concepts for cities and urban districts.

We are prepared. The future of energy is changing – and we're changing with it.

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The future of mobility is electric

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Navigation

The integrated management of EnBW comprises financial and non-financial goals in the dimensions:

				
Finance	Strategy	Customers and society	Employees	Environment

TOP Our key performance indicators are labelled with this symbol.

The cross-references take you to further information within this report or to the definition of terms in the glossary.

We have also published an online version of the Integrated Annual Report 2018 at: www.enbw.com/report2018.

