



# EnBW Climate Transition Plan

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# 1 Board Statement

Dear Readers,

Last year was the warmest since records began.<sup>1</sup> But that's not all: for the first time, the average global temperature over a twelve-month period was 1.5 degrees Celsius above the pre-industrial reference value and thus above the threshold for long-term warming set at the Paris Climate Conference in 2015.<sup>2</sup> The measured values and the increase in extreme weather events around the world leave no room for doubt: As a society, we need to significantly step up our efforts to protect the climate. This is the only way to mitigate the effects of climate change, while averting more serious consequences for people and the environment.

As an integrated energy company along the entire value-added chain, EnBW is acutely aware of its responsibility. And we are taking it seriously: in just over a decade, we want to phase out fossil energy generation and become climate neutral with respect to our own emissions (Scopes 1 and 2) by 2035. This will require huge investment in the entire energy infrastructure, including the expansion of renewable energies, the transmission and distribution grids for electricity, the natural gas and hydrogen infrastructure and charging infrastructure for climate-friendly electromobility. We are also offering our customers – both private households and local authorities – sustainable and digital energy solutions to reduce their carbon footprint. Our reduction path has been validated by the Science Based Targets Initiative (SBTi) as be-

ing in line with a science based pathway to the targets of the Paris Agreement.

In order to guarantee the electricity supply, we are initially switching from coal to lower-emission natural gas before moving onto climate-friendly gases such as low-carbon or green hydrogen. We are countering the phaseout of nuclear energy and coal with the expansion of climate-friendly alternatives.

At EnBW, we are playing our part in this development. In the realignment of our company in 2012, we set ourselves the goal of increasing the renewable share of our generation capacity to 40 percent within eight years. At 40.1%, we achieved this only slightly later in 2021, and the share is expected to exceed the 50% threshold as early as 2025. To this end, we have invested around €20 billion in the energy transition since 2012. And we are not slowing down: we plan to invest a further €40 billion in the energy transition by 2030. We combine all of this with economic stability and good, secure jobs.

With this Climate Transition Plan, we want to provide all stakeholders with transparent information about our activities on the path to climate neutrality. And we hope that it will promote an exchange of ideas and allow us to learn from one another. Because the climate crisis can only be stopped by working together.

Dr. Georg Stamatelopoulos    Thomas Kusterer




Dirk Güsewell



Colette Rückert-Hennen



<sup>1</sup> <https://climate.copernicus.eu/copernicus-2023-hottest-year-record>

<sup>2</sup> <https://climate.copernicus.eu/copernicus-2024-world-experienced-warmest-january-record>

While this breach of 1.5°C for a twelve-month period does not signify the breach of the long-term threshold of the Paris agreement, which is based on a 30-year average, it clearly illustrates the continued rise of global mean surface temperatures.

# 1 Board Statement



**Dr. Georg Stamatelopoulos**  
Chief Executive Officer and Chief Operating Officer  
Sustainable Generation Infrastructure

**Thomas Kusterer**  
Deputy Chief Executive Officer and  
Chief Financial Officer

**Dirk Güsewell**  
Chief Operating Officer System Critical Infrastructure

**Colette Rückert-Hennen**  
Chief Sales and Human Resources Officer

**"We take our responsibility seriously. Our goal: to phase out fossil energy generation in just over a decade and become climate neutral with respect to our own emissions by 2035."**

**"We are continuing to accelerate the energy transition and plan to invest around €40 billion in the period from 2024 to 2030."**

**"The distribution and transmission grids are the backbone of the energy transition. In cooperation with our grid subsidiaries, we are making the infrastructure fit and smart enough for the future."**

**"EnBW stands for the future of energy - and the future of its employees. That is why we combine meaningful and secure jobs with innovative training and further education."**

# 2 Climate emergency

## 2.1 Urgency of the climate crisis—a year of broken records

Global climate change continues unabated. This is reflected not least by the growing number of meteorological records that are being broken at an ever faster rate. In addition to the development of global mean surface temperature, also ocean surface temperatures, sea levels and the summer retreat of Antarctic sea ice set unprecedented records.

In Germany, these developments have been even more pronounced in some cases. The past decade was already 2°C warmer than the first decades on record and 7 of the 10 hottest years on record were between 2013 and 2023. As a result, the number of heat events has risen significantly and dry periods are becoming much more frequent. Extreme weather events were also experienced around the world again, with sometimes catastrophic physical and socio-economic consequences.

## 2.2 Climate challenges

Following a temporary decline in global emissions due to the coronavirus pandemic and the effects of the energy crisis as a result of Russia's war of aggression on Ukraine, a new record for global greenhouse gas emissions of 57.4 Gt CO<sub>2</sub> equivalent was set in 2022.<sup>2</sup> As the United Nations Environment Programme stated in the run up to the COP28 Climate Change Conference in Dubai at the end of 2023, the Earth is on track for a near 3°C warming above pre-industrial levels based on the currently announced national climate protec-

tion measures – above all due to the insufficient emission reductions by developed industrialized countries, which are responsible for a large part of historical emissions.

Greater efforts and a faster pace of transformation on the path to decarbonization are thus urgently needed and will require support not only from countries but also, in particular, the global economy. Relevant packages of measures to support these efforts and decisively shape the economic framework conditions include, for example, the EU Green Deal and its “Fit for 55” package of measures and the Inflation Reduction Act in the USA, which will provide massive support for the energy transition in the country.

At the same time, organizations such as the Science Based Targets Initiative and, via this de facto standard, also capital market players in particular are calling on companies to develop ambitious climate protection pathways in line with the goals of the Paris Agreement.

This also determines the way forward for EnBW in its business activities.

## 2.3 Role of the energy sector

Against the backdrop of the global contribution made by energy-related emissions to the global greenhouse gas balance and the fact that a new high of 37.4 Gt CO<sub>2</sub> was reached in 2023, which corresponds to around 75% of total global emissions, the important role played by the energy industry and its responsibility are clear. In its Net Zero Roadmap, which

outlines a possible pathway for meeting the 1.5°C target, the International Energy Agency (IEA) expects the global electricity sector to play a leading role in achieving net zero emissions – and at a significantly earlier stage than all other sectors. For example, electricity generation must be fully decarbonized in developed economies by 2035 and then in China and other emerging economies by 2040 and 2045, respectively. At the same time, increasing electrification will cause global electricity demand to rise sharply – by a factor of 2.5 in the IEA scenario. Alongside massive investment in renewable generation infrastructure – with the current rate of expansion of 2.5% having to increase to 3.5% per year – the IEA believes that annual investment in grid infrastructure will need to double as a result.

## 2.4 EnBW's ambition: a target-oriented energy transition

A fast and consistent energy transition is the key to ensuring that we continue to get the energy supply we need in the future. In order to master this balancing act, we are completely rebuilding our energy system for Germany's industrialized economy by 2035.

EnBW is committed to actively supporting the Paris Climate Agreement and the resulting decarbonization targets for the EU and Germany. Achieving the German climate protection targets involves all stages of the electricity and gas value chains in which EnBW is active, from switching generation away from fossil fuels and towards renewable sources such as wind and solar power to expansion of the grid infrastruc-

ture, and all the way through to customer-focused areas such as energy efficiency, e-mobility and energy services for households.

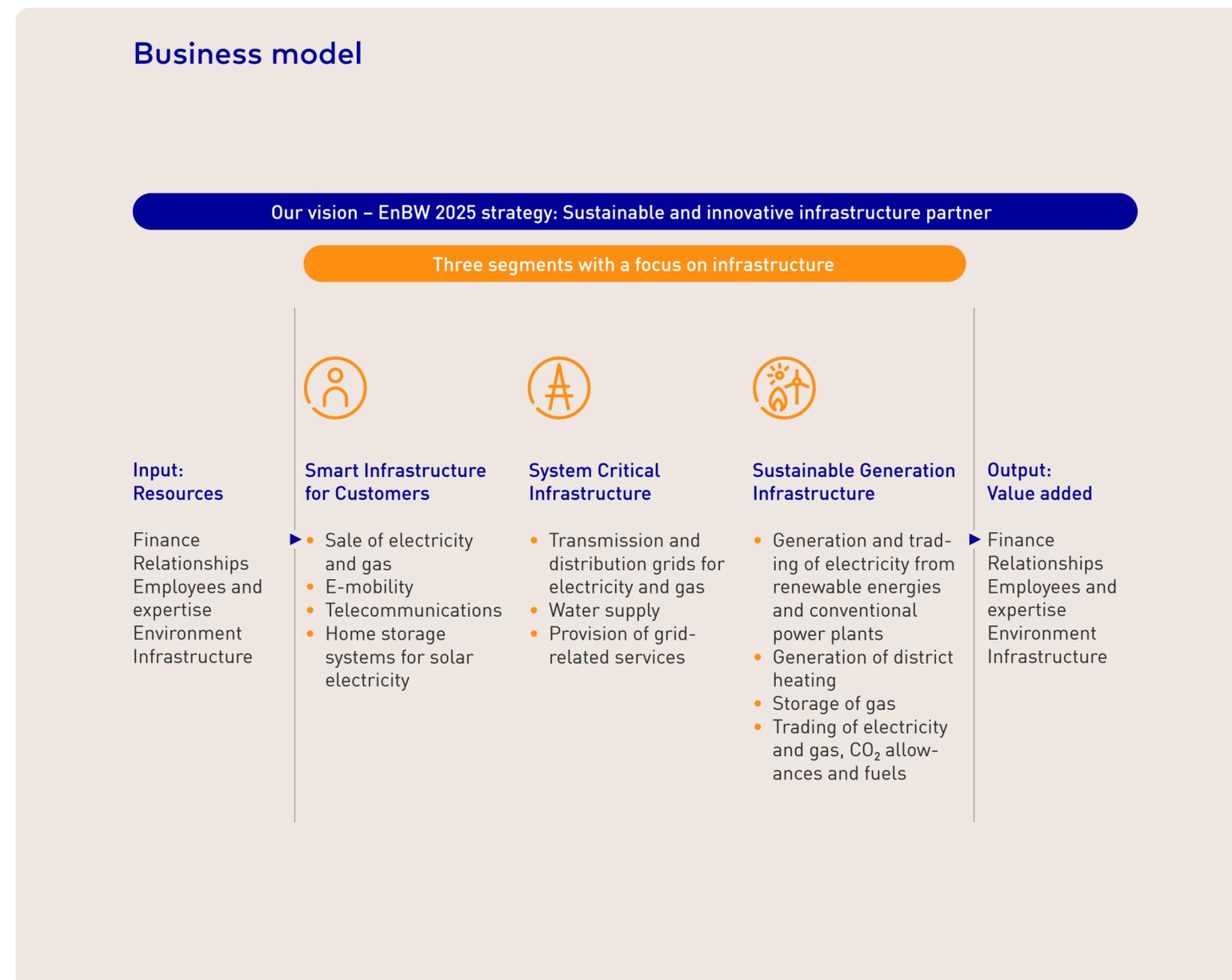
As an operator of systemically relevant infrastructure, we have a particular responsibility and are required to plot the path toward climate neutrality in a manner that guarantees security of supply. We combine this – as part of a just transition – with economic stability and good, secure jobs.

## 3.1 Our portfolio

Our business portfolio is split into **three segments** that encompass the following activities:

- The **Smart Infrastructure for Customers** segment comprises the sale of electricity and gas, the provision and expansion of quick-charging infrastructure and digital solutions for electromobility, activities in the telecommunications sector and other household-related solutions such as photovoltaics and home storage systems.
- The transmission and distribution of electricity and gas are the main components of the **System Critical Infrastructure** segment. Our activities in this segment are designed to guarantee the security of supply and system stability. The provision of grid-related services and the supply of water are other activities in this segment.
- The **Sustainable Generation Infrastructure** segment encompasses our activities in the areas of renewable energies and conventional generation, district heating, waste management and energy services. In order to guarantee the security of supply, we maintain the power plants that have been transferred to the grid reserve. In addition, this segment includes the storage of gas and the trading of electricity, gas, CO<sub>2</sub> allowances and fuels, as well as the direct distribution of renewable energy power plants.

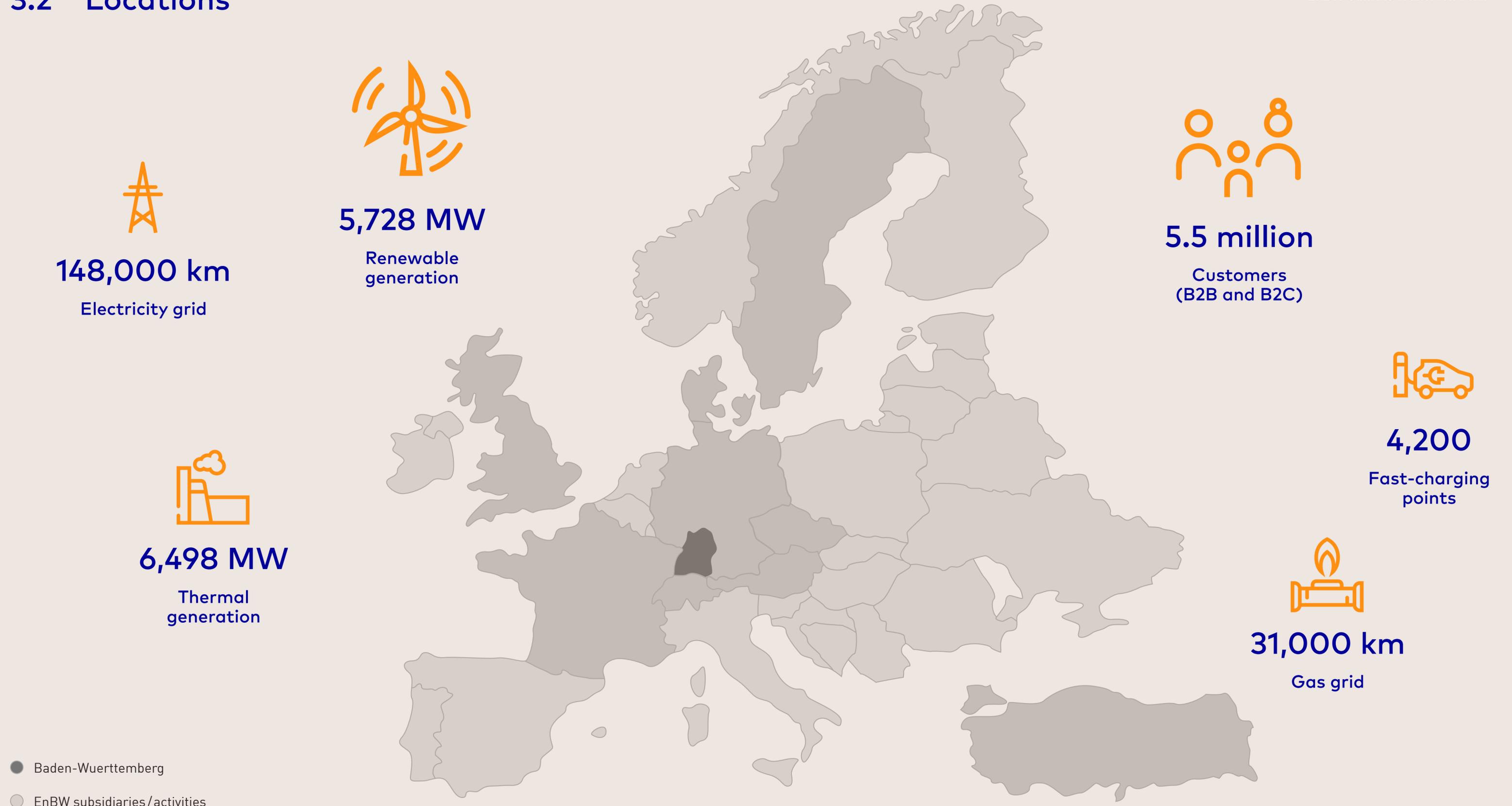
A main goal is to develop a balanced and diversified business portfolio along the entire value-added chain via these three growth fields. Our portfolio is also characterized by a high proportion of stable, regulated business and an attractive risk-return profile.



## 3.2 Locations

EnBW's roots lie in Baden-Wuerttemberg, Germany, where it is positioned as a market leader. The EnBW Group consists of EnBW AG as the parent company and 256 fully consolidated companies, 25 companies accounted for using the equity method and 3 joint operations. We also operate throughout the rest of Germany and in selected markets abroad via our various subsidiaries. We are pushing forward the expansion of renewable energies through Valeco, the French project developer and operator of wind farms and solar parks, in our neighboring country. We are also represented by our subsidiaries Connected Wind Services (CWS) in Denmark and EnBW Sverige in Sweden. In Turkey, we work together in the renewable energies sector with our partner Borusan. In Great Britain, we have secured the rights to build several offshore wind farms together with our partner bp and are pushing forward their development. The companies Naturenergie in Switzerland and Pražská energetika (PRE) in the Czech Republic, in both of which EnBW has held participating interests for many years, also have a strong focus on renewable energies.

## 3.2 Locations



### 3.3 EnBW's contribution to sustainable development

The aim of our corporate activities 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 and the application of a variety of different resources. The efficient usage of these resources creates 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.

With respect to the **environment**, we generate energy using the natural resources wind, water, sun, biomass and geothermal energy. We generate value in this area by improving our carbon footprint, expanding our renewable energy power plants and connecting them to the grid, developing energy-efficient products and ensuring that we engage in sustainable and responsible procurement.

Our resources related to **infrastructure** comprise the expansion and operation of power plants, grids and gas storage facilities. Furthermore, we are continuing to expand our quick-charging infrastructure and the telecommunications and broadband business. EnBW mainly generates value here by pushing forward the energy and mobility transition.

#### Value added 2023 for EnBW and its stakeholders

##### Input: Resources

Finance	Relationships	Employees and expertise	Environment	Infrastructure
Solid financial structure	Focus on stakeholders	People as the main focus	Use of natural resources	Sustainable infrastructure partner
Non-current assets €36.6 billion	Procurement volume of around €6.3 billion	Employees at the Group: 28,630	Total investment / of which in renewable energies (RE) €4,902.6 million / €1,174.2 million	Grid lengths Electricity 148,000 km Gas 31,000 km
Equity €15.9 billion	Proportion of suppliers using the EnBW Supplier Code of Conduct, measured by procurement volume: 97%	Proportion of women in management positions at EnBW AG in the first and second levels below the Board of Management 15.4%/24.7%	Total final energy consumption / of which RE 1,146 GWh / 20.6%	Installed output / of which RE 12,226 MW / 46.9%

##### Business model



##### Output: Value added

Finance	Relationships	Employees and expertise	Environment	Infrastructure
<b>TOP</b> Adjusted EBITDA €6.4 billion	<b>TOP</b> Customer Satisfaction Index 130 / 161	<b>TOP</b> People Engagement Index 82	<b>TOP</b> Installed output of RE and share accounted for by RE 5.7 GW / 46.9%	<b>TOP</b> SAIDI Electricity 19.3 min./a
<b>TOP</b> Debt repayment potential 41.3%	<b>TOP</b> Reputation Index 55	<b>TOP</b> LTIF for companies controlled by the Group / overall 2.4 / 3.7	<b>TOP</b> CO <sub>2</sub> intensity 347 g / kWh	Transmission volumes <sup>2</sup> Electricity 55,800 GWh Gas 29,100 GWh
<b>TOP</b> Value spread 10.2%				Own generation / of which RE 26,552 GWh / 47.8%

##### Outcome: Contribution to sustainability

Economy	Ecology	Society and social
<ul style="list-style-type: none"> <li>Securing <b>profitability</b>, managing the financial profile and increasing Group value</li> <li>Developing <b>sustainable, innovative services</b></li> <li>Integrating sustainability criteria into the <b>investment approval process</b></li> </ul>	<ul style="list-style-type: none"> <li>Expansion of <b>renewable energies, grids and charging infrastructure</b></li> <li>Gradual phaseout of coal planned by 2028</li> <li><b>Climate neutral</b> with respect to Scopes 1 and 2 by 2035</li> <li>Certification of Paris-compliant climate protection targets in all Scopes (1 – 3) by the <b>Science Based Targets initiative (SBTi)</b></li> <li>Transformation of the natural gas business towards <b>climate-neutral gases</b> (biogas, hydrogen)</li> </ul>	<ul style="list-style-type: none"> <li>Guaranteeing the <b>security of supply</b></li> <li><b>Sustainable purchasing and responsible raw materials procurement</b></li> <li><b>People as the main focus</b> – diversity, qualifications, leadership and skills</li> <li>Assuming our <b>social responsibility</b></li> </ul>

##### Contribution made by EnBW to the Sustainable Development Goals (SDGs)



1 For further information including KPI definitions refer to EnBW's Integrated Annual Report 2023  
2 In System Critical Infrastructure segment.

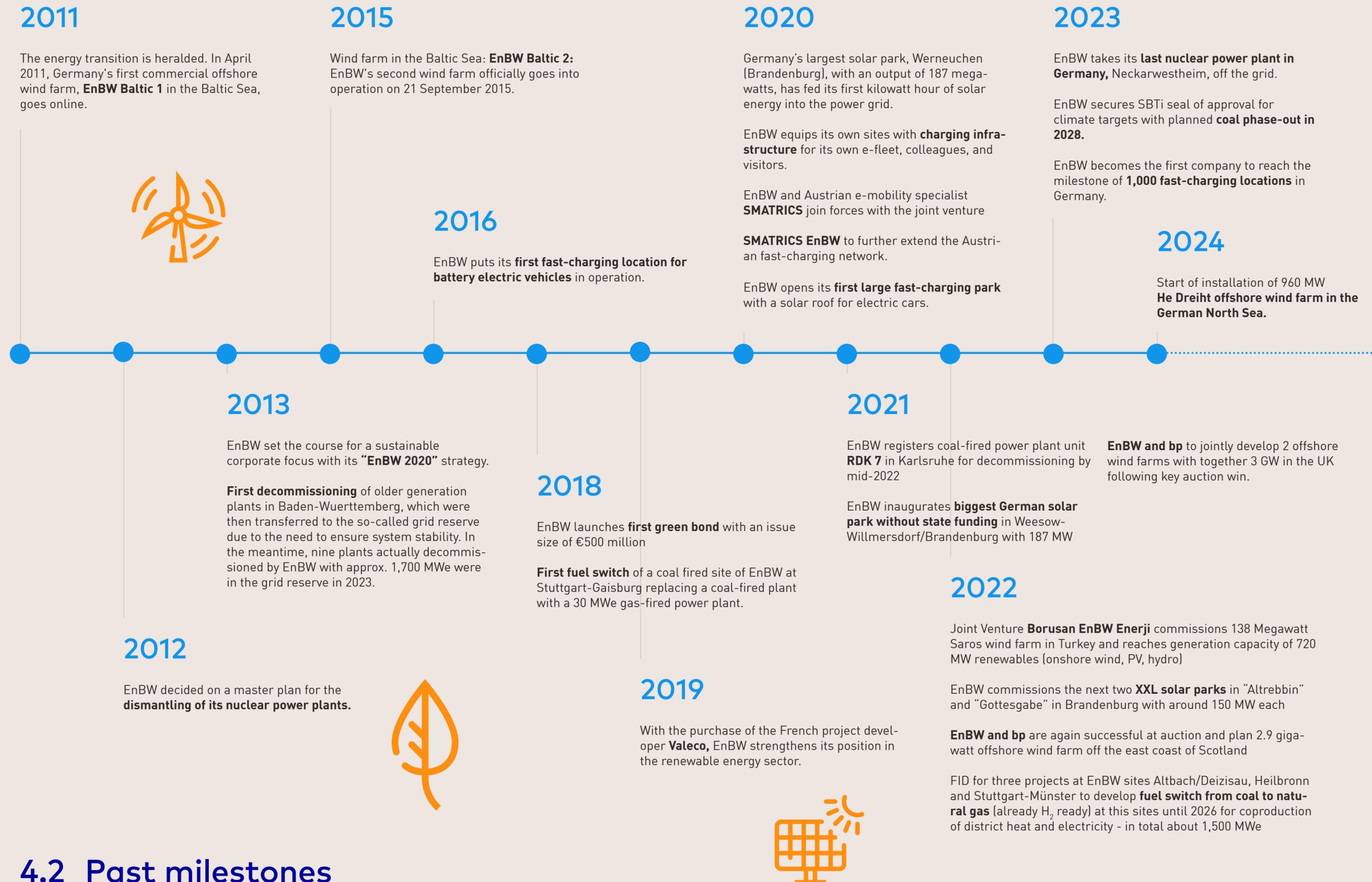
# 4 Decarbonization journey

We actively support the Paris Agreement and the resulting decarbonization targets set by the EU and Germany. At the core of EnBW's transition to a sustainable utility and infrastructure company lies the decarbonization of its portfolio.

## 4.1 Where we started

We started rigorously transforming and realigning our portfolio in 2013 with a corporate strategy that focused on sustainability. Since then, we have not only increased the share of our generation plants accounted for by renewable energies from almost 19 percent to over 40 percent – with an installed output currently of around 5,700 megawatts – but have also divested ourselves of 2,700 megawatts of carbon-intensive generation.

Since 2012, we have invested around €7.5 billion in renewable energies – in Germany and internationally. Between 2024 and 2030, we will invest a further 40 billion euros in the energy transition. 50% of the installed capacity of our generation portfolio will consist of renewable energies by 2025.



## 4.2 Past milestones

# 5 Our targets

## 5.1 Status quo – Overview of the carbon footprint 2023

EnBW calculates and reports on its carbon footprint in accordance with the international Greenhouse Gas Protocol standard and takes into account Scope 1, Scope 2 and Scope 3 emissions.

The Scope 1 emissions from burning fossil fuels are calculated based on the guidelines issued within the European Emission Trading System (EU ETS). These guidelines are mainly based on the EU regulation on the monitoring and reporting of greenhouse gas emissions (in short: Monitoring Regulation, MRR) (EU Regulation 2018/2066). The emission factors are taken from the current “Guidance for preparing monitoring plans and emission reports for stationary installations” from the German Emissions Trading Authority (DEHSt) and publications issued by the German Environment Agency (UBA). The CO<sub>2</sub> equivalents of the greenhouse gases are calculated based on their global warming potential GWP100 according to the Sixth Assessment Report (AR6) from the IPCC.

We measure market-based Scope 2 emissions using specific emission factors according to the designation of the electricity and heating supplies to our plants and buildings. In order to determine location-based Scope 2 emissions, we apply the energy designations used in the respective country, such as the Bundesmix (federal mix) of the general electricity supply according to section 42 German Energy Industry Act.

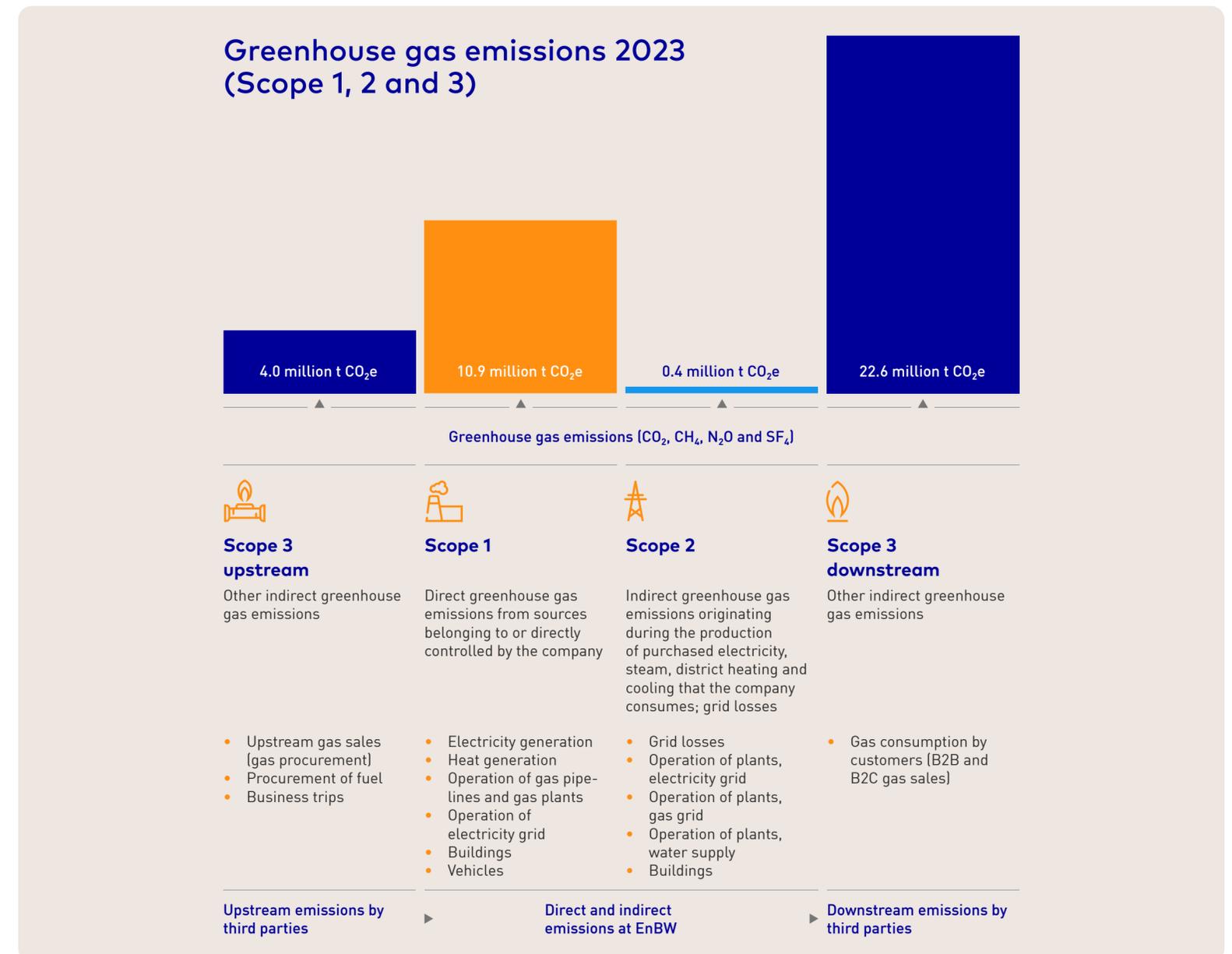
We are currently working with a general emissions factor of 29 g CO<sub>2</sub> eq/kWh for the upstream Scope 3 emissions of our gas sales and the gas consumption at our gas power plants

based on information from the German Environment Agency and the DBI Gas and Environmental Technology Institute. We calculate the upstream CO<sub>2</sub> emissions for procured fuel used for the generation of power and heating in our power plants using GEMIS factors. The Scope 3 emissions for our flights and train trips are based on data we receive from the booking agents and the German rail company Deutsche Bahn. For the gas combustion of our customers, we use an emissions factor of 201 g CO<sub>2</sub>/kWh natural gas in accordance with Annex 2 of the Emissions Reporting Ordinance 2030.

Direct CO<sub>2</sub> emissions in Scope 1 are determined mainly by the deployment of our power plants. The volume of electricity generated by our thermal generation plants fell in comparison to the previous year and led to a corresponding decrease in direct CO<sub>2</sub> emissions from 17.5 million t CO<sub>2</sub>eq in 2022 to 10.9 million t CO<sub>2</sub>eq in 2023.

Scope 2 emissions are dominated by indirect emissions from grid operation. Lower indirect CO<sub>2</sub> emissions from grid losses were the main reason for the decrease in Scope 2 CO<sub>2</sub> emissions from 0.5 million t CO<sub>2</sub>eq to 0.4 million t CO<sub>2</sub>eq.

Scope 3 CO<sub>2</sub> emissions are mainly influenced by the gas consumption of our customers and thus by gas sales in the B2C and B2B sectors. As a result of lower gas sales, Scope 3 emissions fell significantly in the 2023 financial year from 37.7 million t CO<sub>2</sub>eq in the previous year to 26.6 million t CO<sub>2</sub>eq.



## 5.2 Our medium-term targets

EnBW is transforming itself from an energy supply company into a sustainable and innovative infrastructure partner. Sustainability is an important element of our business model and also a feature of our strategic alignment.

### 5.2.1 EnBW's SBTi commitment

The EnBW Group already announced the development of science-based climate protection targets as part of the Science-Based Targets initiative (SBTi) in October 2021. We concluded this process in early 2023 and the targets were validated by the SBTi. We have thus aligned our climate protection targets with the targets of the Paris Agreement. The reduction targets follow a 1.5 degree-aligned path for Scope 1 and 2 emissions and a "well below 2 degrees"-aligned path for Scope 3 emissions.

The aim is to reduce specific CO<sub>2</sub> emissions in the Group in Scopes 1 and 2 by 87,4 % per MWh of energy generated (including power and heat) by 2035 (based on the reference year 2018). This translates to an 83 % reduction in absolute Scope 1 and Scope 2 emissions. Additionally, EnBW commits to reduce specific emissions from all sold electricity (including Scope 1 emissions related to electricity generation as well as Scope 3 Category 3: Fuel- and Energy-Related Activities not included in Scope 1) by 87,4 % per MWh by 2035.

In the same period, the EnBW Group aims to reduce its emissions from gas sales (Scope 3 Category 11: Use of sold products), which account for the majority of its overall Scope 3 emissions, by 43 % in comparison to the reference year 2018.

This target includes corresponding fuel and energy-related Scope 3 Category 3 emissions.

### 5.2.2 Intermediate targets

Along our emission reduction path, we have also defined intermediate targets and milestones: We will reduce our Scope 1 and 2 emissions by 50 % by 2027 and by 70 % by 2030 (based on the reference year of 2018). For specific Scope 1 emissions from electricity generation, a range of 380–440 g CO<sub>2</sub> e/kWh will be reached in 2025 and 90–110 g CO<sub>2</sub> e/kWh in 2030.

### 5.2.3 Long-term targets – Towards a net zero goal

Acknowledging our responsibility to continue increasing our efforts to fight climate change, we have started defining reduction pathways beyond our 2035 targets to achieve a net zero goal in all three scopes.

As part of our strategy and in accordance with the recommendation of the SBTi to "take mitigation action that falls outside a company's value chain," EnBW intends to offset any residual Scope 1 and 2 emissions in the period after 2035 on a transitional basis by purchasing CO<sub>2</sub> certificates and thus supporting recognized climate change mitigation projects until the emissions within EnBW's value chain have been completely reduced to zero.<sup>1</sup>

<sup>1</sup> These offsets cannot and are not counted towards the achievement of EnBW's SBTi targets, but are a voluntary commitment that is additional to the reductions of EnBW's own emissions as part of its SBTi reduction pathway.

## EnBW's Science Based Targets (SBTs) for climate protection

Base year (2018)	Today (2023)	Intermediate targets (2027)	Intermediate targets (2030)	Medium term targets (2035)
Scope 1 (absolute) 16.63 million t CO <sub>2</sub> e	Scope 1 (absolute) -34.34 % 10.91 million t CO <sub>2</sub> e	Scope 1 (absolute) -50 % 8.32 million t CO <sub>2</sub> e	Scope 1 (absolute) -70 % 4.99 million t CO <sub>2</sub> e	Scope 1 + 2 (absolute) -83 % 2.99 million t CO <sub>2</sub> e
Scope 2 <sup>1</sup> (absolute) 0.96 million t CO <sub>2</sub> e	Scope 2 (absolute) -56.3 % 0.42 million t CO <sub>2</sub> e	Scope 2 (absolute) -50 % 0.48 million t CO <sub>2</sub> e	Scope 2 (absolute) -70 % 0.29 million t CO <sub>2</sub> e	
Scope 1 + 2 (intensity) 453 g CO <sub>2</sub> e/kWh	Scope 1 + 2 (intensity) -18.3 % 370 g CO <sub>2</sub> e/kWh			Scope 1 + 2 (intensity) -87.4 % 57 g CO <sub>2</sub> e/kWh
Scope 1 + 3 C3 All sold electricity (intensity) 514 g CO <sub>2</sub> e/kWh	Scope 1 + 3 C3 All sold electricity (intensity) -17.9 % 422 g CO <sub>2</sub> e/kWh			Scope 1 + 3 C3 All sold electricity (intensity) -87.4 % 65 g CO <sub>2</sub> e/kWh
Scope 3 C11 from use of sold product + corresponding C3 (absolute) 49.51 million t CO <sub>2</sub> e	Scope 3 C11 from use of sold product + corresponding C3 (absolute) -47.6 % 25.92 million t CO <sub>2</sub> e			Scope 3 C11 from use of sold product + corresponding C3 (absolute) -42.5 % 28,347 million t CO <sub>2</sub> e

The target boundary includes biogenic land-related emissions and removals from bioenergy feedstocks.

In view of the growing importance of climate-related risks, EnBW's strategic considerations take into account the requirements of the energy transition and the profound changes that will take place due to the transformation towards climate neutrality with the effects they will have on all business sectors and private households. We place particular focus on the expansion of renewable energies, electricity consumption, the expansion of the grids, grid stability and the security of supply.

## 6.1 Climate protection in all business segments

We apply sustainability criteria when making investment decisions even more resolutely than before and are aligning our growth accordingly. The strategies in our three segments are as follows:

### 6.1.1 Smart Infrastructure for Customers

Our Smart Infrastructure for Customers segment encompasses our end customer business. In the next few years, we will especially focus on the growth area of electromobility. We aim to further expand our fast-charging infrastructure to around 30,000 fast-charging points by 2030 in order to promote electromobility, maintaining our position as the market leader in this sector in the process. And in the area of B2C sales for electricity and gas, we will continue to rely on digitalization to deliver an improved customer experience and increase our cost efficiency. We are also expanding our household-related energy solution business (such as in the area of photovoltaics and storage systems). With our activities in this

segment, we enable our customers to reduce their greenhouse gas emissions and thus contribute to the European climate protection targets.

### 6.1.2 System Critical Infrastructure

In the System Critical Infrastructure segment, our grid subsidiaries for electricity and gas will further expand the transmission grids as they form an important cornerstone of our earnings alongside the distribution grids. In addition, our grid companies will upgrade the electricity distribution grids so that they are ready to meet the challenges of the future and ensure they are prepared for the additional demands that will be placed on them by electromobility, the increasing number of heat pumps and the decentralized feed-in of energy. Numerous local authorities have invested in our distribution grids via the "EnBW connects" participation model. To support the decarbonization of the gas sector, our grid companies are preparing their grid infrastructure for the use of climate-friendly and climate-neutral gases in the future, such as hydrogen.

The main focus of this investment is the expansion of the grids, especially the central SuedLink and ULTRANET projects of our grid subsidiary TransnetBW for the future energy supply in Germany. These projects will provide the foundations for increasing the share of renewable energies in the grid and thus make a significant contribution to the national climate protection targets.

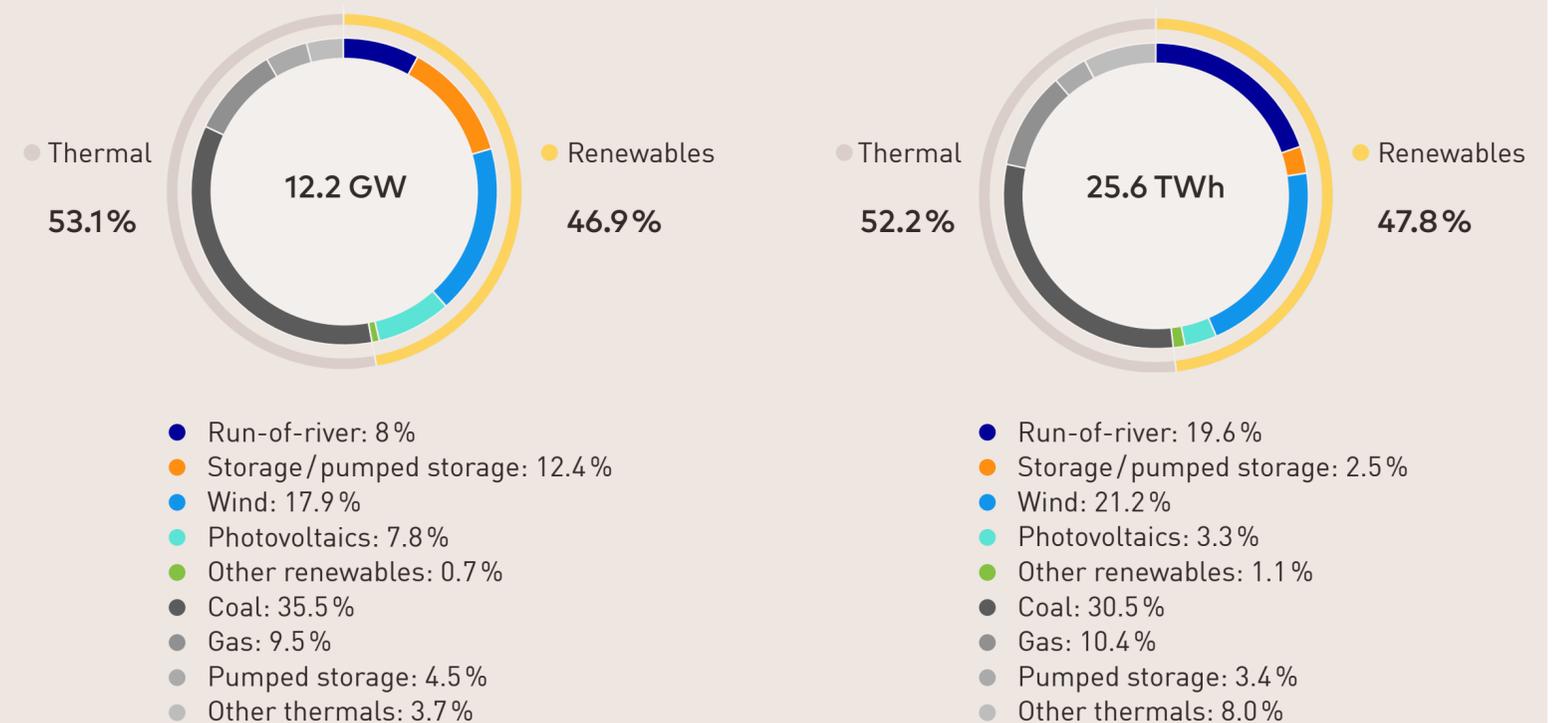
### 6.1.3 Sustainable Generation Infrastructure

In the Sustainable Generation Infrastructure segment, the main focus is the expansion of renewable energies and dispatchable capacity, i.e., flexibly deployable power plants. The

expansion of renewable energies will cover further selective internationalization and the realization of projects without state funding. The generation capacity of our wind power plants is due to increase to **4.0 GW** by 2025 and our portfolio of photovoltaic projects to **1.2 GW**. In addition, EnBW and bp

plan to build three offshore wind farms through joint ventures that will have a total capacity of 5.9 GW and lie off the coast of Great Britain. They will be placed into operation from 2029. Long-term power purchase agreements (PPAs) with industrial customers will be used to safeguard this investment.

## Renewables as a main driver of sustainability already account for almost half our generation capacity



With respect to coal-based conventional generation, we plan to phase out coal by 2028 based on the assumption that renewable energies will be ramped up as necessary and that the significant progress in expanding the grids in accordance with the plans announced by the German government can be achieved. As a replacement for several of our coal power plants and to secure our portfolio of renewable energies, we already decided in 2022 to build gas power plants (fuel switch) that could also be operated using hydrogen in the future (H<sub>2</sub>-ready). These projects are aligned to the EU taxonomy. We are adapting our trading activities to the changes in our generation portfolio and the energy markets and further expanding our market position with a focus on Europe.

## 6.2 Delivering on our targets

Our climate protection targets are in line with the requirements and targets of the Paris Agreement. They should also strike a balance between the different expectations of our stakeholders, with whom we remain in constant dialogue. This includes above all the provision of affordable and climate-friendly energy and ensuring the security of supply.

### 6.2.1 Reducing Scope 1 emissions

The most important step for achieving our climate protection goals is the early phaseout of coal. Based on the assumption that renewable energies will be ramped up as necessary and the significant progress in expanding the grids in accordance with the plans announced by the German government will be achieved, we plan to phase out EnBW coal power plants with around 2,000 MW of generation capacity that are still on the market by 2028.

Another milestone for reducing our CO<sub>2</sub> emissions will be the fuel switch at the power plants in Heilbronn, Altbach/Deizisau and Stuttgart-Münster. Specific emissions from electricity generation will be reduced by around 60% as a result of the switch from hard coal to natural gas. The conversion work at the plants is already underway and is due to be completed in 2026. The aim is to operate the plants from the middle of the 2030s onwards with low carbon gases, primarily green hydrogen, so that they will then generate climate-friendly energy.

<sup>1</sup> Subject to framework conditions – see 6.2.1



### 6.2.2 Reducing Scope 2 emissions

Various measures will be required to reduce our indirect emissions from purchased or acquired energy (Scope 2). The CO<sub>2</sub> emissions from the general electricity mix will be reduced in the coming years by the expansion of renewable energies and the gradual phaseout of fossil fuel-fired generation. This will also lead to a reduction in our Scope 2 emissions. Furthermore, we plan to specifically utilize green electricity for grid losses and other internal energy demands.



### 6.2.3 Reducing Scope 3 emissions

When it comes to reducing our Scope 3 emissions, the volume of our gas sales is particularly important. For a large part, this will be dependent on various developments in the heating sector. Important aspects in connection EnBW's business segments are a further increase in the use of heat pumps, the partial mixing of natural gas for heating with climate-neutral gases and the expansion of climate-neutral district heating. Additionally there will be a general reduction in gas demand for heating due to energy-efficient refurbishment and a fall in the average age of the residential building stock.

About 20% of CO<sub>2</sub> emissions in Germany originate from industrial processes. Accounting for about a third of these emissions, natural gas is still the most important energy carrier for the industry. Where natural gas is currently used in industrial processes both electrification and a switch to green gases are viable options that will decrease natural gas demand in the future. The relative importance of both approaches remains to be seen. In basic production processes of e.g. steel or cement, in the future hydrogen will be an important energy carrier to achieve decarbonization. In applications where natural gas is used as a feedstock and in particular where it is used to produce grey hydrogen, green gases and specifically green hydrogen in many cases will be indispensable as a substitute.

We will push forward these developments as a partner, especially when establishing a hydrogen infrastructure. Here not only access to a hydrogen grid but also sufficient availability will be key. To ensure this, EnBW is developing projects with international partners to import green gases. This will enable us to offer our gas customers a more environmentally

**Reducing Scope 3 emissions**

**Electrification of heating**



**Expand and decarbonize district heating**



**Supplier of green gases**



friendly energy supply in the future as we align our sales portfolio and trading activities towards green gases.

### 6.2.4 The role of carbon offsetting

To reach our target of carbon neutrality from 2035, we are planning to temporarily offset the remaining Scope 1 and 2 emissions through high-quality mitigation projects (Gold Standard) until we reach net zero emissions (see 5.2.3).

In order to minimize the risks that can be associated with offset certificates (e.g., double counting, insufficient permanence, unclear additionality), we will develop company-wide guidelines regarding the detailed quality criteria, eligible project types and locations. These guidelines will take account of scientific recommendations and best practices as well as the final stipulations in the future regulation based on Article 6 of the Paris climate agreement that is still pending.

Regardless of the type of offsetting chosen, we see this as an important but temporary and limited complementary measure to our ambitious decarbonization efforts in which we are making emissions reductions within our value chain and towards a future net zero goal.

### 6.2.5 Key operational metrics related to climate protection

Our Group environmental targets – which are integrated into the Group strategy – relate to the expansion of renewable energies and to 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 CO<sub>2</sub> intensity.

Installed renewables capacity and the share of the generation capacity accounted for by renewable energies are a measure for the expansion of renewable energies and refer to the installed capacity rather than the weather-dependent contribution to total generation.

Calculation basis for the Top-KPI CO<sub>2</sub>-Intensity are CO<sub>2</sub> emissions linked to the Group's own electricity generation as well as the generated electricity excluding contributions from nuclear generation. The KPI is the ratio of emissions and generated electricity and hence is a measure for the specific amount of CO<sub>2</sub> emitted per kilowatt hour generated. By excluding nuclear generation, the indicator is not influenced by the nuclear phase-out in 2023.

2026

Commissioning of fuel switch sites

2025

6.5–7.5 GW

Renewables

2025

380–440 g CO<sub>2</sub>e/kWh

Scope 1 CO<sub>2</sub> intensity from electricity generation

2027

-50%

Absolute Scope 1 & Scope 2 emissions

2025

4 GW

Onshore wind

2025

1.2 GW

Photovoltaics



## 6.3 Capital allocation

### 6.3.1 Outlook 2030

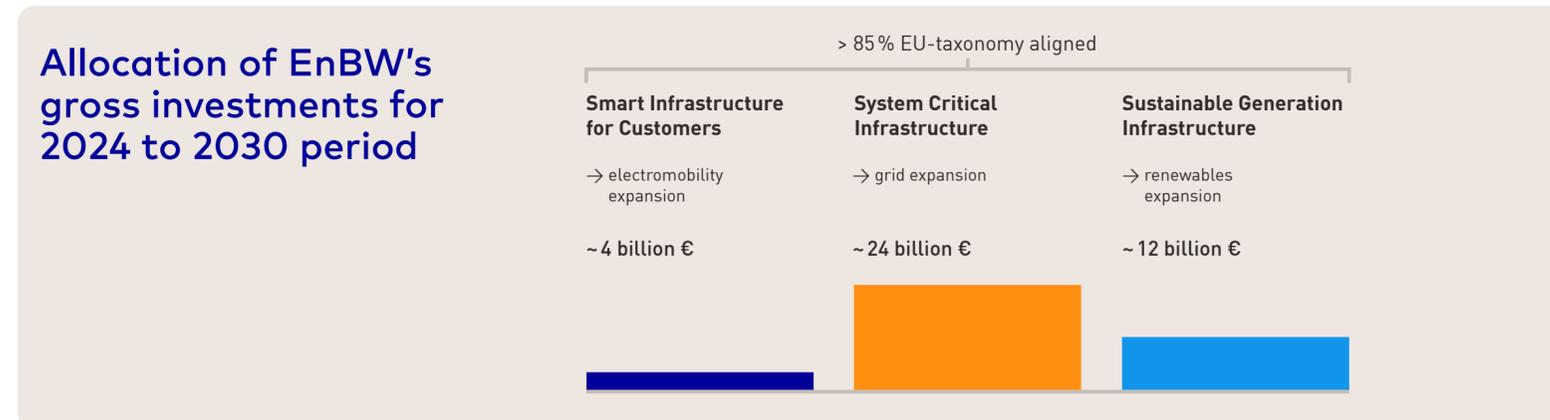
In the period from 2024 to 2030, we are planning gross investment totaling around €40 billion. Approximately 60% of this investment will be in the expansion of the grids in the System Critical Infrastructure segment and around **30% will be on the expansion of wind farms and solar parks and the construction of climate friendly, hydrogen-ready power plants** in the Sustainable Generation Infrastructure segment. The remaining amount of around 10% will primarily flow into the **expansion of electromobility** in the Smart Infrastructure for Customers segment. The vast majority of the investment will be made in Germany, while about **10%** will be in our other markets. EnBW will further accelerate the pace of the energy transition with its planned investment up to 2030. In doing so, we aim to meet the strict sustainability criteria of the EU Taxonomy with more than 85% of taxonomy-aligned capex.

### 6.3.2 EU taxonomy

We have accompanied and supported the development and introduction of the taxonomy from the very beginning.

Since the 2021 financial year, we have already been reporting in full on the taxonomy alignment of our activities based on all of the final taxonomy criteria that were available at the time the Integrated Annual Report was prepared, insofar as it was possible to report on them and uncertainties with respect to the interpretation of the criteria have been removed. We report on the obligatory key performance indicators revenue, capex and opex as well as voluntarily publish information on the other performance indicators that are relevant to the ongoing management of the EnBW Group: adjusted EBITDA and capex including the proportion for entities accounted for using the equity method (expanded capex).

We only report on activities that are taxonomy-eligible with respect to the EU's environmental objective of "climate change mitigation."



### Activities examined for the EU Taxonomy Regulation



#### Smart Infrastructure for Customers

- E-mobility



#### System Critical Infrastructure

- Electricity distribution grids
- Electricity transmission grids
- Water grids
- Water supply
- Gas distribution grids
- Gas transmission grids

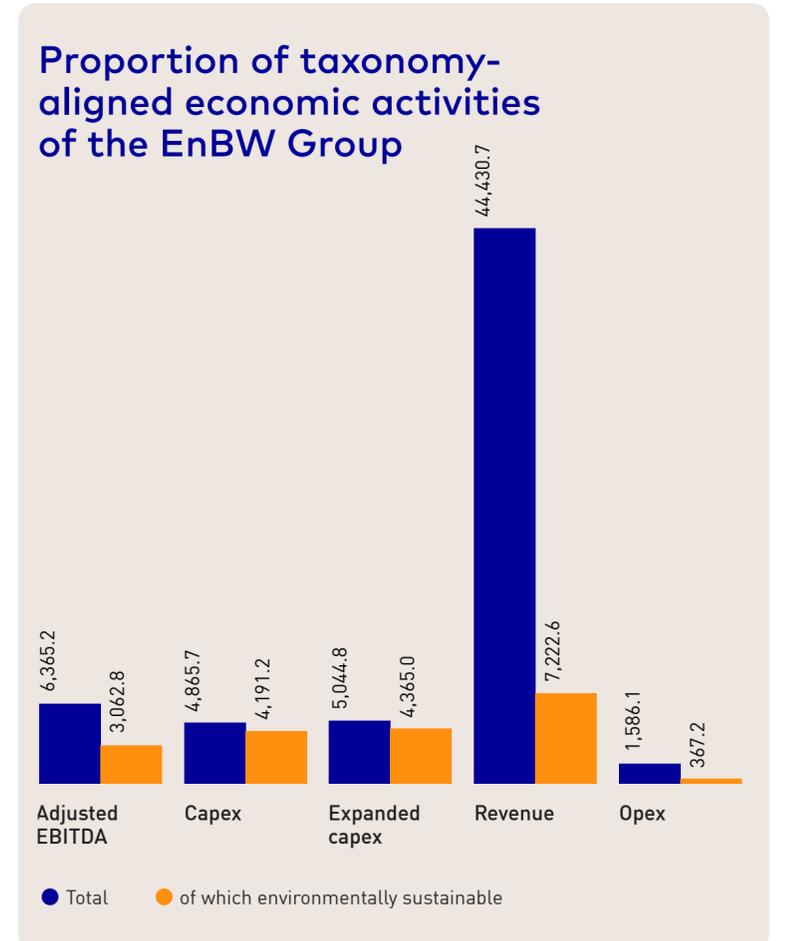


#### Sustainable Generation Infrastructure

- Onshore wind
- Offshore wind
- Solar
- Run-of-river
- Biomass
- Pumped storage
- District heating
- Electricity generation from gas
- Combined heat and power

The following chart provides an overview of the shares of taxonomy-aligned business activities in relation to adjusted EBITDA,<sup>1</sup> capex, extended capex, revenue and opex.

<sup>1</sup> In addition to capex, revenue and opex, EnBW voluntarily reports on taxonomy alignment of adjusted EBITDA and extended capex (i.e. capex including companies valued at equity)



We closely examine the significance of sustainability and climate protection themes for the business model and implement measures and set targets to orientate our opportunity and risk management system even more towards climate-related opportunities and risks.

## 7.1 Our approach to risk management

The integrated opportunity and risk management system (iRM) of EnBW is based on the internationally established COSO<sup>1</sup> framework as a standard for risk management systems that span entire companies, as well as the requirements of the Institute of Public Auditors in Germany (IDW). 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 and 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, we define 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.

<sup>1</sup> Committee of Sponsoring Organizations of the Treadway Commission (COSO) is an organization that develops guidelines for businesses to evaluate internal controls, risk management, and fraud deterrence.

## 7.2 Scenario-based risk assessment

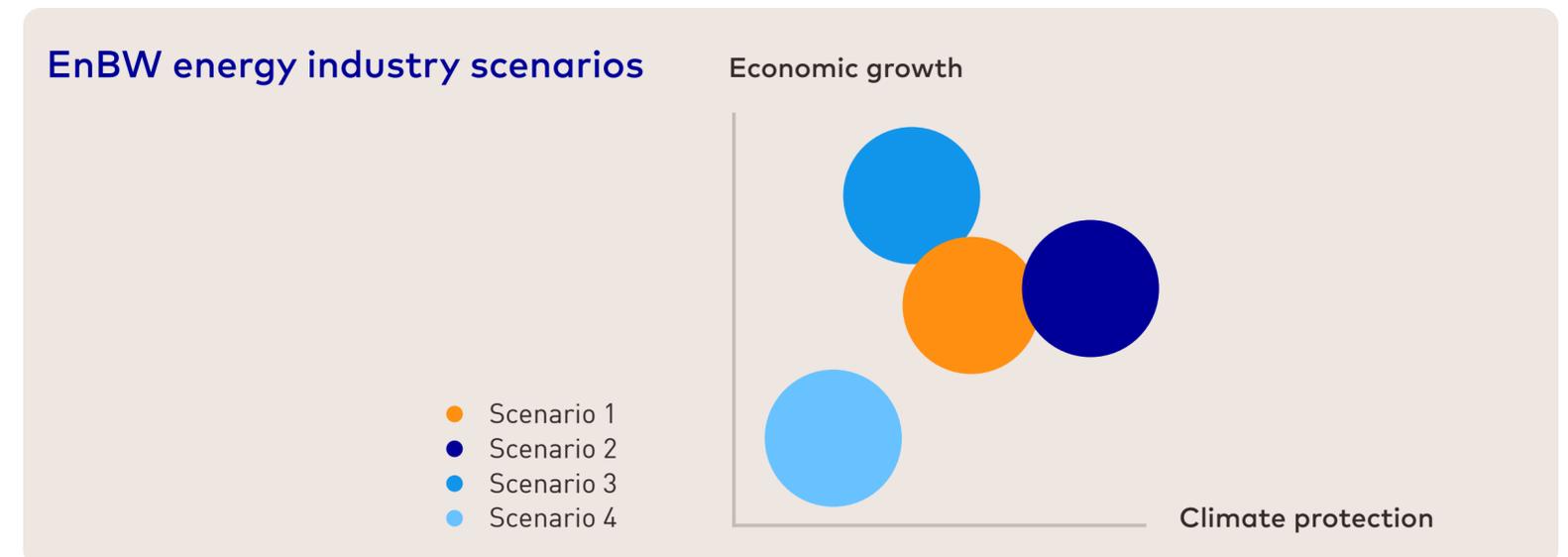
We analyze the robustness of our business model with an increasing focus on climate change due to the growing importance of climate-related risks and the recommendations issued by the Task Force on Climate-related Financial Disclosures (TCFD). These analyses are regularly updated and will be expanded in the future.

Our strategic considerations take into account the requirements of the energy transition and the profound changes that will take place due to the transformation towards climate neutrality with the effects they will have on all business sectors and private households. We place particular focus on the expansion of renewable energies, electricity consumption, the expansion of the grids, grid stability and the security of supply. In this context, we examine the requirements with respect to climate protection, possible implementation paths and the implications for the EnBW business. This acts as an important basis for assessing the opportunities and risks for our business that will arise due to climate change and the dynamic regulatory environment associated with it.

In order to evaluate these opportunities and risks, we use real developments to derive four realistic future scenarios that take into account all of the different aspects of the energy transition. These scenarios are primarily characterized by two dimensions: climate protection and the sustainable economic growth that is achievable in the long term. In this context, climate protection means the transformation towards a climate-neutral society. The economic growth that can be sustainably achieved is a key variable influencing, e.g., the demand for electricity or commodity prices.

The scenarios that are relevant to EnBW differ according to the rate of transformation towards a climate-neutral society. Scenarios 1 and 2 assume “normal” economic growth within the scope of so-called potential growth. In scenario 1, there will be a slight delay in achieving the goal of climate neutrality because it will not be possible to comprehensively solve the practical challenges associated with the implementation of the energy transition. In scenario 2, the climate targets defined in the EU Green Deal will be largely achieved until the middle of the century. In scenarios 3 and 4, it is assumed that there will be a long-term, permanent deviation in economic development that lies outside the scope of potential growth. In scenario 3, it is assumed that there will be higher growth because climate protection has been given a lower priority. In scenario 4, weaker economic growth is assumed. In this scenario, the transformation to climate neutrality will be achieved at the slowest pace.

Based on the assumptions made for specific variables, possible paths for how the energy markets (especially electricity and gas) will develop in the long term are derived for the four scenarios. In the process, we determine wholesale market prices for electricity in simulated calculations using computer models. These simulations also take into account physical risks, such as the influence meteorological fluctuations may have on the electricity market due to the availability of wind and sunlight, and thus make it possible to incorporate potential changes to the physical environment due to climate change into the calculations. The scenarios can thus provide us with quantitative descriptions that serve as the basis for assessing the business of EnBW and, in particular, also allow us to evaluate the opportunities and risks associated with climate change.



To ensure a comprehensive assessment, the opportunities and risks related to climate change and to the goals for our strategy, sustainability and climate protection, including climate neutrality, are taken into consideration. Physical risks resulting from extreme weather events, such as floods, periods of extreme heat and drought, forest fires, hail, storms, etc., could have an impact on the balance sheet in the form of, for example, disruptions to production or production losses, the impairment of assets or additional expenses for reconstruction or purchase of replacements.

However, they could also lead to long-term changes in climatic and ecological conditions that would indirectly impact the balance sheet via valuation assumptions (e.g., temperature trends, hours of sunshine or wind levels).

### 7.2.1 Transitory risks

Transitory risks during the transition to a climate-neutral economy primarily arise in connection with potential political, taxation and regulatory measures, as well as social expectations (e.g., changes in customer demand for renewable instead of conventional energy). Material and foreseeable effects with an impact on assets, liabilities, income and expenses, as well as any contingent liabilities, are taken into account in the annual financial statements.

The underlying parameters for material evaluations and estimates made in the reporting year are based here on the detailed planning period for the Group and in the long term by weighting the four scenarios described above.

Climate-related effects have an impact on the Group's net assets, financial position and results of operations particularly in the following areas:

### Climate-related effects have an impact on the Group's net assets, financial position and results of operations particularly in the following areas:

Area	Contents
Uncertainty inherent in estimates	<ul style="list-style-type: none"> <li>Assumptions on the useful lives of non-financial assets, e.g., a residual useful life until 2028 is assumed for the coal power plants due to the early phaseout of coal</li> <li>Valuation assumptions for impairment tests, especially for cash flow forecasts</li> <li>Assumptions related to future taxable results with an impact on the recognition and valuation of deferred taxes</li> </ul>
Revenue	<ul style="list-style-type: none"> <li>In the case of customer groups who pay according to rolling annual statements, the transaction prices for electricity and gas deliveries is calculated based on past consumption values while taking into account the current temperature influences and time of year</li> <li>The revenues from long-term power purchase agreements for wind and solar energy are dependent on the hours of sunshine and wind levels</li> </ul>
Leases	<ul style="list-style-type: none"> <li>In the case of agreements for variable lease payments, which mainly relate to long-term power procurement agreements with variable volumes of electricity from wind and solar energy, the size of the lease payments is dependent on the hours of sunshine and amount of wind</li> </ul>
Provisions, contingent liabilities and other financial commitments	<ul style="list-style-type: none"> <li>Provisions are formed for the obligation to return emission allowances in the European emissions trading system.</li> <li>The German nuclear power plant operators have cover from risks due to nuclear damage that could occur as a result of physical risks (e.g., earthquakes, floods, persistently high temperatures).</li> </ul>
Sustainable financing	<ul style="list-style-type: none"> <li>In accordance with our Green Financing Framework, the proceeds from the green bonds are exclusively used in the areas of renewable energies (offshore wind, onshore wind and photovoltaics), clean transport (charging infrastructure for electromobility) and the electricity grids.</li> <li>The proceeds from the green promissory note of our subsidiary VNG can only be used for environmentally sustainable projects. The focus here in the medium to long term will be green gases, primarily biogas and sustainably produced hydrogen.</li> <li>Two bank loans taken out specifically to finance the EnBW He Dreht offshore wind farm.</li> <li>The financing conditions for the sustainability-linked syndicated credit line are linked to CO<sub>2</sub> intensity and the share of generation capacity accounted for by renewable energies.</li> </ul>
Remuneration of the Board of Management	<ul style="list-style-type: none"> <li>Since performance period 2022–2024, the level of the long-term multi-year variable remuneration (LTI) has not only been dependent on the financial performance indicator EBT but also on compliance with sustainability criteria defined annually by the Supervisory Board; please refer to the detailed presentation on this aspect in the remuneration report of EnBW AG published according to stock corporation law.</li> </ul>

The following risks relevant to the key climate protection indicators (see 6.3) were identified:

Expansion of renewable energies: Risks generally exist in the approval and auction process. These risks can result in delays to the further expansion of renewable energies. Due to the fact that the auctions are held on equal terms, we continue to expect a high level of competition.

CO<sub>2</sub> intensity/climate protection: Risks generally exist in the area of environmental protection due to the operation of power and heating generation plants and infrastructure facilities, with the possible consequences this could have for the air, water, soil and nature.

### 7.2.2 Physical risks

Alongside transitory risks, EnBW also faces potential physical 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 a negative impact, particularly 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.

In accordance with the provisions of the EU taxonomy, physical risks to EnBW's assets are analyzed using a model-based, location-specific approach to ensure compliance

with the “do no significant harm” criterion regarding climate change adaptation. So far, relevant meteorological parameters such as the increase in the frequency of floods, a rise in sea levels, heavy rainfall, drought, extreme heat and an increase in the number and duration of heat waves have been modeled for exemplary asset locations and three climate scenarios: SSP 1 (corresponding to RCP 2.6), SSP 2 (corresponding to RCP 4.5) and SSP 5 (corresponding to RCP 8.5). Currently appropriate precautions are being taken to further develop climate risk management in the Group and to integrate it into the decentralized structures.

With regard to physical climate risks, we take 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. We counter these risks using comprehensive organizational and procedural measures to reduce their impact. We ensure that the risks posed by crisis and emergency situations are mitigated quickly, effectively and with a coordinated approach through regular crisis management exercises and other measures.

## 8.1 Governance

### 8.1.1 Principles behind our culture of sustainability

Taking a responsible approach to the environment, our fellow human beings and economic resources is non-negotiable. That is why sustainability criteria are increasingly becoming a solid, measurable part of our decision-making processes as well as our HR and financial strategy.

With the strategic theme “Culture of sustainability,” in our Sustainability Agenda, we are aligning our corporate culture even more closely to sustainability. With measures in the areas of occupational health and safety, diversity and anti-discrimination, training, employee development and work-life balance, we take responsibility for our employees.

In the area of sustainable corporate governance, we integrate matters such as sustainability into the investment approval process and compliance and climate risks into our management and control processes.

### 8.1.2 Sustainable Corporate Governance

Sustainability means putting the long-term interests of society before one’s own short-term successes. This is exactly what we do at EnBW, particularly since we have two main public shareholders in the federal state of Baden-Wuerttemberg and the Zweckverband Oberschwäbische Elektrizitätswerke (OEW), a consortium of counties in Baden-Wuerttemberg.

Setting a corporate group on course for sustainability does not lie within the power of one single person. Instead, it is

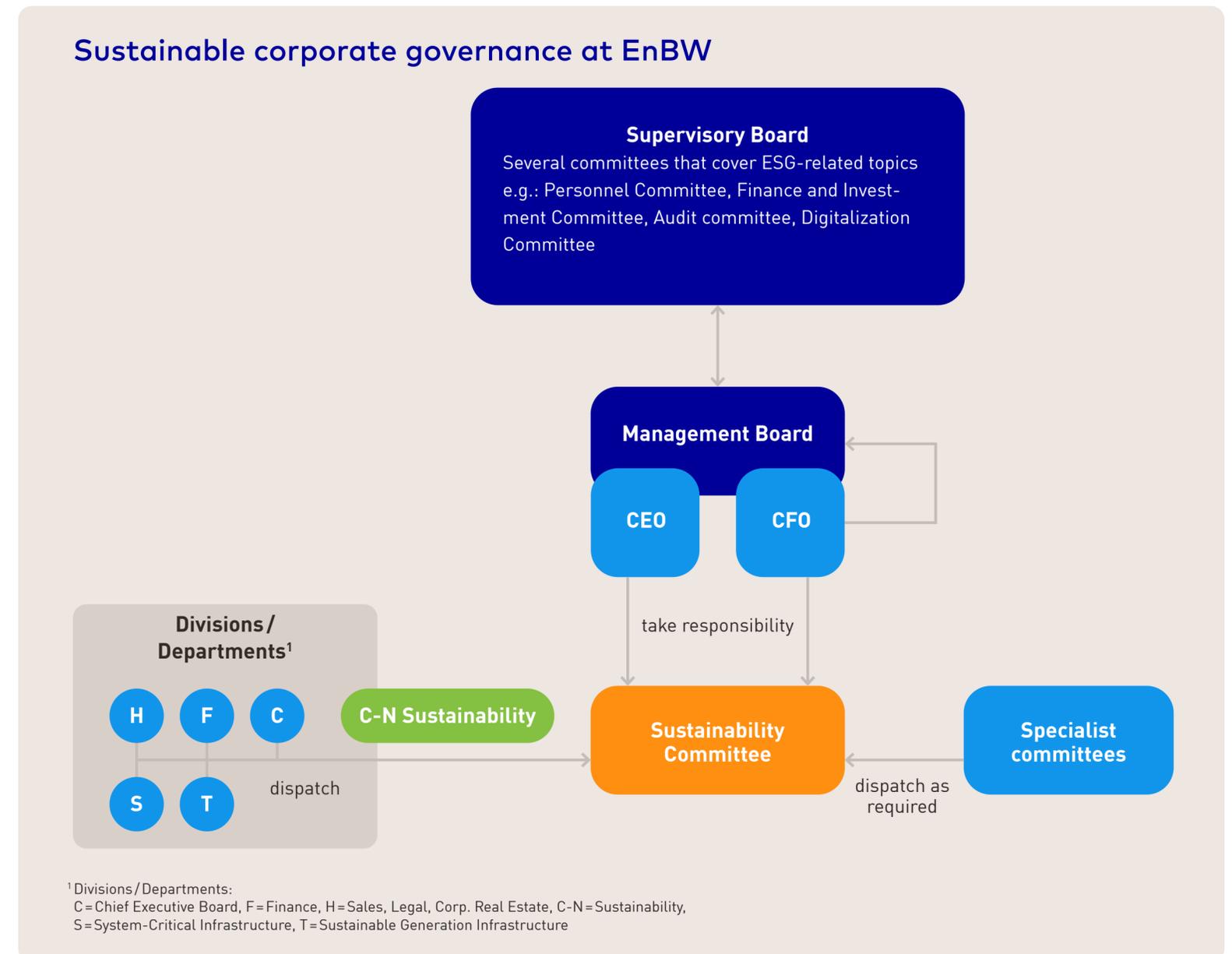
important to give decision-makers across all management levels the right guidance.

The Supervisory Board oversees EnBW’s general strategy and performance. In the course of the regular Supervisory Board meetings, the board of management and the Supervisory Board routinely discuss ESG topics. Several Supervisory Board committees cover ESG-related topics and inform the decisions of the Supervisory Board (i.e. the Personnel committee, the Finance and Investment committee, the Audit committee, the Digitalization committee). The Supervisory Board also decides on the board’s remuneration policy setting topics, performance indicators and the weighting of the sustainability component in the short term incentive as well as within the long term incentive (see 8.3 for details).

All members of the Board of Management are responsible for relevant aspects of EnBW’s Sustainability Agenda and the targets defined within it related to climate protection and de-carbonization. Overall responsibility for the sustainability strategy lies with the CEO, while the CFO oversees all aspects of the company’s sustainable finance activities.

The sustainability team is led by two heads of sustainability – one with a focus on strategy and decarbonization and one with a focus on reporting and sustainable finance. It reports directly to the CEO, deals with sustainability risks and opportunities and coordinates and supports the activities of Group units. The team serves as a central point of contact for sustainability issues in the Group (for functional and business units, as well as shareholdings).

Increasingly, the sustainability team is supported by sustainability specialists embedded in relevant departments within business units with a high relevance for EnBW’s sustainabili-



ty strategy. This ensures close collaboration with the sustainability team and growing professionalization of sustainability management across the entire company.

To advise and support the company's sustainability strategy and ensure execution of the group's Sustainability Agenda, a sustainability committee headed by CEO and CFO, will be appointed in 2024. Operational lead lies with the heads of sustainability and the members encompass relevant lead business unit managers. It will convene twice a year and its mandate includes performance monitoring of EnBW Sustainability Agenda measures and EnBW's ESG ratings as well as discussing trend analyses.

Communication of the Sustainability Agenda and climate targets throughout the entire workforce is done using various formats ranging from a sustainability challenge, sustainability events, the publication of short articles on sustainability facts and the "KPI of the month" through to featuring sustainability prominently in the board's communications during regular company meetings.

### 8.1.3 Board of Management remuneration based on sustainability performance

The structure of the remuneration system for the EnBW Board of Management is designed to promote the long-term development of the company. Using both transparent and performance-based criteria and a predominant multi-year variable remuneration ratio creates an incentive to manage the company in a successful and sustainable way.

The Supervisory Board passes resolutions on the remuneration system for members of the Board of Management, in-

cluding the main contract elements, and reviews it on a regular basis.

The criteria for determining appropriate remuneration include:

- responsibilities and performance of the members of the Board of Management
- economic situation
- success and sustainable development of the company
- relationship between the remuneration of the Board of Management and the remuneration of senior management and the workforce as a whole

The target values for the sustainability performance indicator (SPI) for a performance period and the weighting of the partial remuneration amounts is defined by the Supervisory Board at its own discretion on an annual basis in alignment with the corporate strategy. Possible weights range from 30% to 50%. In accordance with the remuneration system, the target values for the SPI were defined by the Supervisory Board for the first time for the performance period 2022 to 2024. The sustainability performance indicator itself, the SPI (target) values, their weighting and achievement are reported in the respective remuneration report (from 2024 onwards Link).

## 8.2 Financing

The use of sustainable financing instruments underpins our corporate strategy and makes a contribution to achieving national and international sustainability targets, above all the Paris climate protection targets and the UN Sustainable Development Goals (SDGs). Since 2018, we have successfully issued several green bonds on the capital market. As of 31 December 2023, these bonds had a total volume of €5 billion. We issued a green subordinated bond with a volume of €500 million on 23 January 2024. In accordance with our Green Financing Framework, the proceeds from our green bonds are exclusively used in the areas of renewable energies (off-shore wind, onshore wind and photovoltaics), clean transport (charging infrastructure for electromobility) and the project category electricity grids that was newly added in 2022.

We provide detailed information on the allocation of the funds every year in our Green Bond Impact Report, which is published at the same time as the Integrated Annual Report.

## 8.3 Reporting

Our integrated reporting combines our annual report with a sustainability report. Since 2014, we have been informing our stakeholders about all sustainability activities in the Integrated Annual Report. We follow the recommendations of the International Integrated Reporting Council (IIRC; since 2021 Value Reporting Foundation) and strive for a holistic presentation of our corporate performance in one report.

The Task Force on Climate-Related Financial Disclosures (TCFD), established by the Financial Stability Board in De-

cember 2015, promotes the disclosure of climate-related corporate information and data. EnBW began implementing the TCFD recommendations in 2017. This work has continued since, with ongoing improvements in the four core elements governance, strategy, risk management and performance indicators and targets.

## 8.4 Stakeholder dialogue

### 8.4.1 Future of workers

The consequences of the climate crisis continue to increase throughout the world. At the same time, the developments of the past year have dramatically underscored the vulnerability of the energy supply. From EnBW's perspective, the response can only be an accelerated transformation toward a renewable energy system. It is important to include people in such a transformation process and drive change in a socially just way. The aim here should always be to continue to offer people in all regions secure access to electricity and heat and give our employees new career prospects.

As envisaged in the Coal Phaseout Act, EnBW has reached an agreement with Verdi, the responsible trade union, and the works councils on the framework conditions for phasing out coal generation in a socially responsible way. The agreement comprises a collective bargaining agreement for all employees of the Employers' Association for Electricity Power Plants in Baden-Wuerttemberg on the coal phaseout and a framework company agreement to safeguard jobs in the EnBW Group, which sets out specific details for employees. The agreements include, among other things, a commitment to avoid compulsory redundancies, the offer of semi-re-

## Future of workers

No layoffs



Early retirement schemes



Retraining



tirement and severance packages and also the opportunity, in particular, for employees to retrain and find another job within the Group. They apply to all employees affected by the coal phaseout, including staff at EnBW’s other reserve power plants, as soon as they are shut down.

We have already implemented appropriate human resources measures such as further training and forward-looking human resources planning for employees working in conventional generation. Some employees from the area of conventional generation are already bringing their technical expertise to other areas of the company, such as at our off-shore wind turbines.

### 8.4.2 Local communities

In our sustainable infrastructure projects, we place a strong emphasis on dialogue with affected communities. In 2023, numerous events were organized to involve and inform citizens, both on site and virtually, including the following selected examples:

#### GeoHardt geothermal project

The GeoHardt geothermal project held its final event in March 2023 as part of a one-year, multi-stage dialogue forum. Participants presented their results to the two project partners EnBW and MVV. In a virtual information event in May 2023, GeoHardt informed the interested public about the current status of the geothermal project.

A first large meeting with residents was held in Wörth in October 2023 to mark the foundation of the Wörth geothermal plant. Together with our partners, the City of Wörth am Rhein and Daimler Truck, we informed local residents about the planned measures to determine the potential for using deep

geothermal energy for heat generation in the area and held a Q&A session.

#### Citizen participation platform

We plan, construct and operate wind farms and photovoltaic power plants in direct partnership with or involving local authorities and citizens. Local citizens can participate financially in regional renewable energy projects via the EnBW citizen participation platform. In 2023, we implemented three citizen participation projects in Steinheim, Allmendingen and Häusern.

## 8.5 Supporting policies

### 8.5.1 Sustainable supply chain

In tandem with the shift in EnBW’s business model, there will also be a shift in EnBW’s value chain.

To better understand the effects of changes to the value chain and model how the value chain itself may be disrupted by climate and carbon-related developments in the economy, EnBW is developing an integrated supply chain management system. This will build upon the work already done as part of the German Supply Chain Due Diligence Act (LkSG), which came into force on 1 January 2023. The LkSG includes a requirement to measure and manage risks, including compliance with the Minamata Convention on Mercury, the Basel Convention on the illegal transboundary movement of electrical and electronic waste and the Stockholm Convention on Persistent Organic Pollutants, as well as social risks, forced labor, child labor, unsafe working conditions and negative impacts on the community. This system includes measures

to manage disruptions in the value chain and will also support the downstream value chain on their lower carbon journey.

### 8.5.2 Climate policy

Ongoing exchange with internal and external stakeholders is an important part of our corporate activities. We maintain open dialogue with all stakeholder groups and work with stakeholders from a range of sectors (policymaking, NGOs, civil society, etc.) at EU, national, regional and local levels to ensure their interests are represented. We also take part in policy dialogue by publishing relevant position papers and consultation contributions (either directly or via associations). We as EnBW additionally hold sectoral policy events and conferences of our own at our sites.

#### Government policy

At a political level, we support the European and German climate targets through our representative offices in Brussels, Berlin and Stuttgart. We contribute to the current political debate with concepts, position papers and statements. We use these to call for the consistent expansion of renewable energies, above all through accelerated and simplified authorization procedures while maintaining nature conservation standards. Moreover, we support all measures that ensure that sufficient land is available for the construction of renewable energy plants. We do this at federal and state level.

We are in favor of a power plant strategy that will allow the early phaseout of coal-fired power generation and ensure the maintenance of supply security and system stability through the expansion of hydrogen-capable gas-fired power plants as back-up capacity to renewable energies. In the revision of

the Climate Protection Act, we are in favor of maintaining the sector targets in order to stimulate a targeted and responsible climate policy.

For us, the fundamental framework for a successful climate protection policy is EU emissions trading with ambitious targets at European and German level and CO<sub>2</sub> prices that promote investment in climate protection technologies, such as the development of the hydrogen economy and the large-scale electrification of heating and mobility, and make a significant contribution to minimizing greenhouse gas emissions.

The most important position papers and statements are presented to the public on our website (Link).

#### Industry associations

We are also committed to these goals and measures through our involvement in industry and sector associations. We do this in dialogue with politicians as well as other energy and commercial companies. We make sure that the positions held by these associations are in line with our own stance on climate protection targets and measures. Selected significant memberships of EnBW or its Group subsidiaries are listed on our website (Link).

### Example of our commitment to the green transformation



EnBW has been involved in the **Climate Economy Foundation (SKW)** as an active sponsoring company since 2018 and was already a founding member of “**Stiftung 2°**,” the predecessor organization of SKW. EnBW is the only company in the energy sector within the foundation. We have an important responsibility, therefore, to bring our unique perspective on the transformation of the energy sector to the foundation and to discuss and anchor it in dialogue with other business representatives within the foundation, as well as with representatives of civil society and political decision-makers. This dialogue on best practices is conducted within the foundation and externally at the highest corporate level; the CEOs of EnBW have clearly emerged as **the voice of the green transformation** in recent years, in some cases as members of the SKW Board of Trustees.

Alongside our Integrated Annual Report and the publication of our ESG performance figures, we report on relevant sustainability topics in numerous separate publications.

## 9.1 References to more detailed documents

Our integrated reporting combines our annual report with a sustainability report. Since 2014, we have been informing our stakeholders about all sustainability activities in the Integrated Annual Report. We follow the recommendations of the International Integrated Reporting Council (IIRC; since 2021 Value Reporting Foundation) and strive for a holistic presentation of our corporate performance in one report. To the Integrated Annual Report 2023

The EnBW policy statement describes in detail how we implement the requirements of the German Supply Chain Due Diligence Act (LkSG). The document provides information on the human rights and environmental risks in our business area and our value chains. This statement also highlights preventive and remedial measures with which we further minimize the identified risks. The EnBW policy statement is updated on an ongoing basis. To the EnBW policy statement

As an energy supplier and infrastructure provider, both our own business activities and those of our business partners and suppliers have an impact on the lives of people in different countries. EnBW respects and is mindful of the human and labor rights of its employees as well as anyone directly or indirectly affected by its business activities and is committed

to ensuring that its business partners also respect human rights and do not violate them. We outline our commitment to these principles in our Declaration of Human Rights. To the EnBW Declaration of Human Rights

The Supplier Code of Conduct is the basis for all working relationships with our suppliers. Together with our suppliers, we want to take responsibility for our supply chain and so minimize the negative social and environmental impact of our business activities. The full version is available to download in PDF format. To the Supplier Code of Conduct

Further guidelines that set out our positions and the minimum standards that we are committed to throughout the Group can be found on our website: Sustainability guidelines | EnBW

## 9.2 Detailed carbon footprint

The Scope 1 emissions from burning fossil fuels are calculated based on the guidelines issued within the European Emission Trading System (EU ETS). These guidelines are mainly based on the EU regulation on the monitoring and reporting of greenhouse gas emissions (in short: Monitoring Regulation, MRR) (EU Regulation 2018/2066). The emission factors are taken from the current "Guidance for preparing monitoring plans and emission reports for stationary installations" from the German Emissions Trading Authority (DEHSt) and publications issued by the German Environment Agency (UBA). The CO<sub>2</sub> equivalents of the greenhouse gases are calculated

based on their global warming potential GWP100 according to the Sixth Assessment Report (AR6) from the IPCC.

We measure market-based Scope 2 emissions using specific emission factors according to the designation of the electricity and heating supplies to our plants and buildings. In order to determine location-based Scope 2 emissions, we apply the energy designations used in the respective country, such as the Bundesmix (federal mix) of the general electricity supply according to section 42 German Energy Industry Act.

We are currently working with a general emissions factor of 29 g CO<sub>2</sub>eq/kWh for the upstream Scope 3 emissions of our gas sales and the gas consumption at our gas power plants based on information from the German Environment Agency and the DBI Gas and Environmental Technology Institute. We calculate the upstream CO<sub>2</sub> emissions for procured fuel used for the generation of power and heating in our power plants using GEMIS factors. The Scope 3 emissions for our flights and train trips are based on data we receive from the booking agents and the German rail company Deutsche Bahn. For the gas combustion of our customers, we use an emissions factor of 201 g CO<sub>2</sub>/kWh natural gas in accordance with Annex 2 of the Emissions Reporting Ordinance 2030.

Direct CO<sub>2</sub> emissions are determined mainly by the deployment of our power plants. The volume of electricity generated by our thermal generation plants fell in comparison to the previous year and led to a corresponding decrease in direct CO<sub>2</sub> emissions from 17.5 million t CO<sub>2</sub>eq in 2022 to 10.9 million t CO<sub>2</sub>eq in 2023. Lower indirect CO<sub>2</sub> emissions from grid losses were the main reason for the decrease in Scope 2 CO<sub>2</sub> emissions from 0.5 million t CO<sub>2</sub>eq to 0.4 million t CO<sub>2</sub>eq. Scope 3 CO<sub>2</sub> emissions are mainly influenced by the gas consumption of our customers and thus by gas sales in the

B2C and B2B sectors. As a result of lower gas sales (p. 69), Scope 3 emissions fell significantly in the 2023 financial year from 37.7 million t CO<sub>2</sub>eq in the previous year to 26.6 million t CO<sub>2</sub>eq. The increase in CO<sub>2</sub> emissions avoided due to the rise in electricity generation from renewable energies was almost completely compensated for by the fall in biogas activities so that CO<sub>2</sub> emissions avoided of 9.9 million t CO<sub>2</sub>eq in 2023 were almost at the same level as in the previous year.

## Carbon footprint<sup>1</sup>

in thousand t CO <sub>2</sub> eq/in %	2023	2022
<b>Direct CO<sub>2</sub> emissions (Scope 1)</b>	<b>10,910/100.0</b>	<b>17,545/100.0</b>
Electricity generation – not controllable <sup>2</sup>	2,545/23.3	2,906/16.6
Electricity generation – controllable <sup>3</sup>	7,431/68.1	13,465/76.7
Heat generation	676/6.2	773/4.4
Operation of gas pipelines/plants <sup>4,5</sup>	188/1.7	328/1.9
Operation of electricity grid	31/0.3	32/0.2
Buildings	9/<0.1	11/<0.1
Vehicles	28/0.3	28/0.2
Other <sup>6</sup>	1/<0.1	2/<0.1
<b>Indirect CO<sub>2</sub> emissions (Scope 2)<sup>7</sup></b>	<b>421/100.0</b>	<b>516/100.0</b>
Grid losses	364/86.2	449/87.0
Operation of plants, electricity grid	11/2.6	7/1.3
Operation of plants, gas grid <sup>5</sup>	25/6.0	40/7.7
Buildings	10/2.4	11/2.1
Operation of plants, data and telecommunications network	7/1.6	6/1.2
Other <sup>8</sup>	5/1.2	4/0.8
<b>Indirect CO<sub>2</sub> emissions (Scope 3)</b>	<b>26,576/100.0</b>	<b>37,675/100.0</b>
<b>Upstream indirect CO<sub>2</sub> emissions (Scope 3)</b>	<b>3,973/14.9</b>	<b>5,894/15.6</b>
Upstream gas sales	3,320/12.5	4,729/12.6
Procurement of fuel for power and heat generation plants	643/2.4	1,151/3.1
Upstream gas consumption, gas plants	6/<0.1	11/<0.1
Business trips	3/<0.1	3/<0.1
<b>Downstream indirect CO<sub>2</sub> emissions (Scope 3)</b>	<b>22,603/85.1</b>	<b>31,781/84.4</b>
Gas consumption by customers	22,603/85.1	31,781/84.4
<b>CO<sub>2</sub> emissions avoided</b>	<b>9,874</b>	<b>9,984</b>
<b>CO<sub>2</sub> intensity of business journeys and in traveling CO<sub>2</sub>/km</b>	<b>155</b>	<b>163</b>

<sup>1</sup> The figures may not add up due to rounding differences.

<sup>2</sup> Includes the CO<sub>2</sub> emissions for electricity generation from redispatch and reserve power plant deployment.

<sup>3</sup> CO<sub>2</sub> emissions from electricity generation excluding redispatch and reserve power plant deployment.

<sup>4</sup> The figures for the previous year have been restated.

<sup>5</sup> The methane emissions from the gas grids included here were calculated using the method developed by the Oil and Gas Methane Partnership (OGMP).

<sup>6</sup> Includes non-automotive fuel consumption (e.g., emergency generators).

<sup>7</sup> Market-based method. According to the location-based method, the Scope 2 emissions were 921 thousand t CO<sub>2</sub>eq in 2022 and 872 thousand t CO<sub>2</sub>eq in 2023.

<sup>8</sup> Contains Scope 2 emissions from electricity consumption at water plants and own/operational consumption at charging infrastructure for e-mobility.

## 9.3 Glossary

### E

#### EU Green Deal

The EU Green Deal is a package of measures from the European Union with the primary aim of making the EU climate neutral by 2050 and which contains staggered measures to achieve this goal.

#### EU taxonomy

In light of global warming, European countries have committed themselves to do more for climate protection and the EU aims to become climate neutral by 2050. The introduction of the sustainable finance taxonomy by the European Commission is a key instrument for achieving the climate protection targets in Europe. The EU taxonomy is a classification system that for the first time offers a uniform understanding of which economic activities are sustainable. In the first stage, it is focusing on climate change mitigation and climate change adaptation.

### F

#### Fit for 55

Fit for 55 is a package of reformed and new directives and regulations issued by the European Commission for climate policy in the European Union. The package was presented on 14 July 2021. It is intended to help achieve the targets set in the European Green Deal of reducing greenhouse gas emissions in the EU by at least 55% by 2030, compared to 1990 levels, and making Europe climate neutral by 2050.

#### Fuel switch

Fuel switching, i.e., changing from coal to more climate-friendly natural gas, is a bridging technology on the

path to climate neutrality. It is a necessary intermediate step because the availability of energy from renewable sources, such as wind and solar energy, is not yet sufficient to cover the demand for energy.

### G

#### Green bonds

Green bonds are issued exclusively to finance climate-friendly projects. The proceeds are invested in sustainable environmental and climate-protection projects.

### H

#### HVDC

High-voltage DC transmission lines (HVDC) are used to transport electrical energy over large distances. The transmission lines use direct current for transportation as the transmission losses are lower.

### I

#### IPCC

The Intergovernmental Panel on Climate Change (IPCC) is an intergovernmental body of the United Nations. Its job is to advance scientific knowledge about climate change caused by human activities. It informs governments about the state of knowledge of climate change and does this by examining all the relevant scientific literature on the subject.

### R

#### RCP

Representative Concentration Pathways are greenhouse gas concentration trajectories adopted by the IPCC for climate modeling for the integrated assessment reports. The pathways describe different climate change scenarios, all of

which are considered possible depending on the amount of greenhouse gases (GHG) emitted in the years to come.

**S  
Scopes**

In accordance with the GHG Protocol (Greenhouse Gas Protocol), greenhouse gas emissions are classified in three emissions categories (Scopes). Scope 1 includes the direct greenhouse gas emissions from a company’s own stationary or mobile plants/sources. Scope 2 includes the indirect greenhouse gas emissions that arise in the production of externally generated energy (electricity, steam, district heating and cooling) consumed in the company, as well as grid losses. Scope 3 includes the other indirect greenhouse gas emissions in the upstream and downstream supply chain that are not covered by Scope 2. The GHG Protocol obligates its users to report Scope 1 and 2 emissions, whereas the reporting of Scope 3 emissions is voluntary.

**SSP**

Shared Socioeconomic Pathways (SSPs) are climate change scenarios of projected socioeconomic global changes up to 2100 as defined in the IPCC Sixth Assessment Report on climate change in 2021. The SSPs provide narratives describing alternative socio-economic developments. They are used to derive greenhouse gas emissions scenarios with different climate policies.

**Sustainable Development Goals (SDGs)**

In the UN Agenda 2030, the global community set 17 goals (Sustainable Development Goals, SDGs) for socially, economically and environmentally sustainable development. The 17 global sustainable development goals cover a wide variety of themes. Areas of action include, for example, a greater commitment to peace and justice, promoting quality education,

protecting the climate and strengthening industry, innovation and infrastructure.

**Sustainable finance**

Important foundations for sustainable finance are the Paris Agreement and the resulting EU action plan that defines specific sustainability targets for the finance sector. Sustainable financial products should help to achieve the Paris climate protection targets and realize the UN Sustainable Development Goals (SDGs). Sustainable business practices are a key focus of sustainable finance.

**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)

**Greenhouse gas emissions**

The increase in the concentration of various greenhouse gases, especially carbon dioxide (CO<sub>2</sub>), 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, sulfur hexafluoride and nitrogen trifluoride.

## 9.4 Contact

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**“We are turning climate goals into concrete solutions on the ground and place ESG criteria at the heart of our decisions.”**



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**“We are committed to human rights standards by applying thorough human rights due diligence which is based on intensive stakeholder dialogue and anchored in robust governance structures.”**

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