

EnBW Factbook 2019 >



October 2019





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1.1 EnBW at a glance¹



One of the largest German utilities

- > 5.5 m customers
- > 13,399 MW generation portfolio
- > Stable shareholder structure
- > 21,775 employees
- > Strong roots in Baden-Württemberg

Balanced risk-return profile

- > Focus on renewables and grids
- > ~68% EBITDA contribution from low-risk business
- > Solid investment grade ratings
- > Active in selected foreign markets

Key financial figures

- > Revenue: €20.6 bn
- > Adj. EBITDA: €2.2 bn
- > Group net profit: €334.2 m

Fully integrated utility in Germany



Four Business Segments



¹ As of 31 December 2018



1.2 Key figures¹



Key financials

KPI		2018	Forecast 2020	Target 2020
Adjusted EBITDA	€ bn	2.2	2.3 - 2.5	Securing profitability
Internal financing capability	%	93.2	>100	Maintain financial discipline
ROCE	%	6.5	8.5 - 11	Raising the Group's value

Key non-financials

KPI		2018	Forecast 2020	Target 2020
RE share of generation capacity	%	27.9	> 40	Expand renewable energies
CO ₂ intensity	g/kWh	553	-15 % to -20%	Reducing CO ₂ intensity by 15 to 20%
Customer Satisfaction Index (EnBW / Yello)		120/152	>136 / >159	Customer proximity
Employee Commitment Index		62	65	Employee commitment

¹ As of 31 December 2018



Agenda 2 – Environment

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2.1 Political & regulatory environment



Paris Climate Agreement: Hold the increase in global average temperature to well below 2°C above pre-industrial levels and pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels

EU 2020 goals

- 20% GHG emissions
- 20% RE in final energy consumption
- 20% Energy savings

EU 2030 goals

- 40.0% GHG emissions
- 32.0% RE in final energy consumption
- 32.5% Energy savings

German Climate & Energy Policy Goals

- 40% GHG emissions by 2020
- 20% primary energy consumption by 2020

Nuclear phase-out

- Goal** Last NPP to shut down by end of 2022
- > Responsibility for financing of phase-out split between operators and government
- > State-owned fund established in mid 2017
- > Operators have partly transferred nuclear provisions and related liabilities to state

Renewables

- Goal** **2025: 40–45% RE**
2035: 55–60% RE in electricity production
- > RE share goal to be increased to 65% by 2030 in current legislative period
- > Additional tenders for 4 GW onshore wind and 4 GW PV in 2019-2021
- > Debate on tariff system and costs of power ongoing. Changes to charges expected

Coal phase-out

- Goal** Federal Government about to implement Coal Commission recommendations:
- > Reduction of coal-fired capacity from ~40 GW to 30 GW in 2022 and 17 GW in 2030
- > Coal to be phased out completely in 2038; end date may be subject to revision: earlier end date (2035) possible

Electricity grid expansion

- Goal** Remove bottleneck in energy transmission (slowing grid expansion)
- > Underground cabling given priority over overhead powerlines

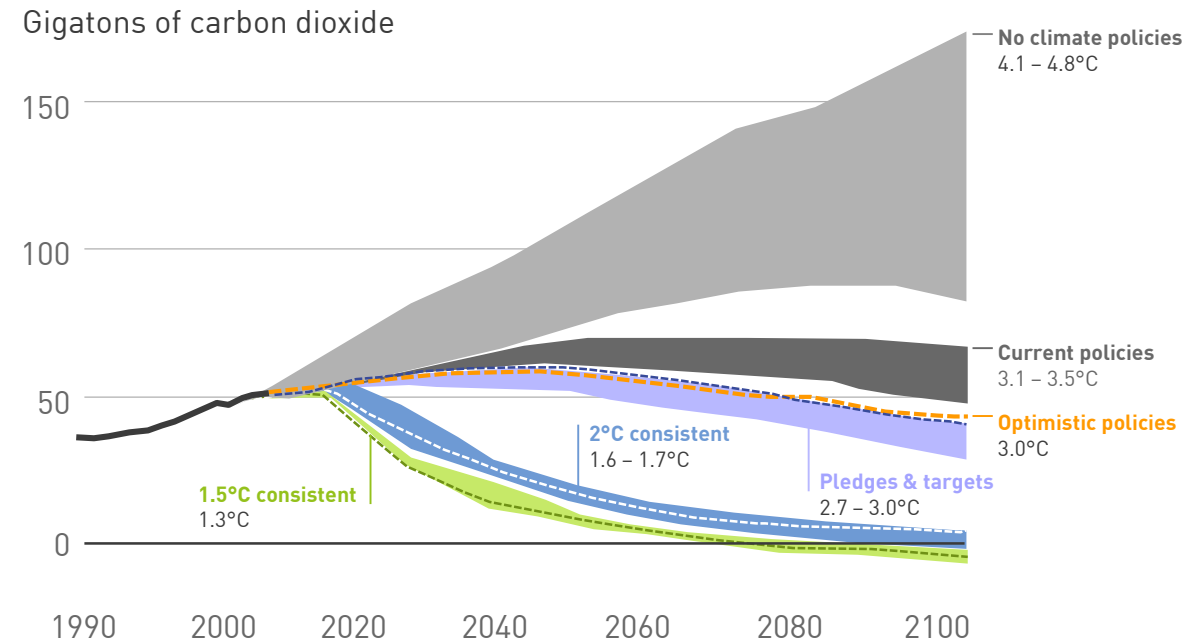
2.2.1 Decarbonisation: Global regulatory framework on climate change



The Paris Agreement

- > Adopted at the UN Climate Change Conference COP21 in December 2015 by the 196 Parties to the UN Framework Convention on Climate Change (UNFCCC)
- > Established a global warming goal well below +2°C on pre-industrial average with efforts to limit warming to +1.5°C in 2100 in relation to pre-industrial levels
- > Aims at achieving net-zero emissions in the second half of this century
- > Defined a universal, legal framework where all countries develop and communicate their mitigation measures and “nationally determined contributions” (NDCs)
- > Will be further defined at COP25 in Santiago (Chile) in 2019

Effect of current pledges and policies on global GHG emissions

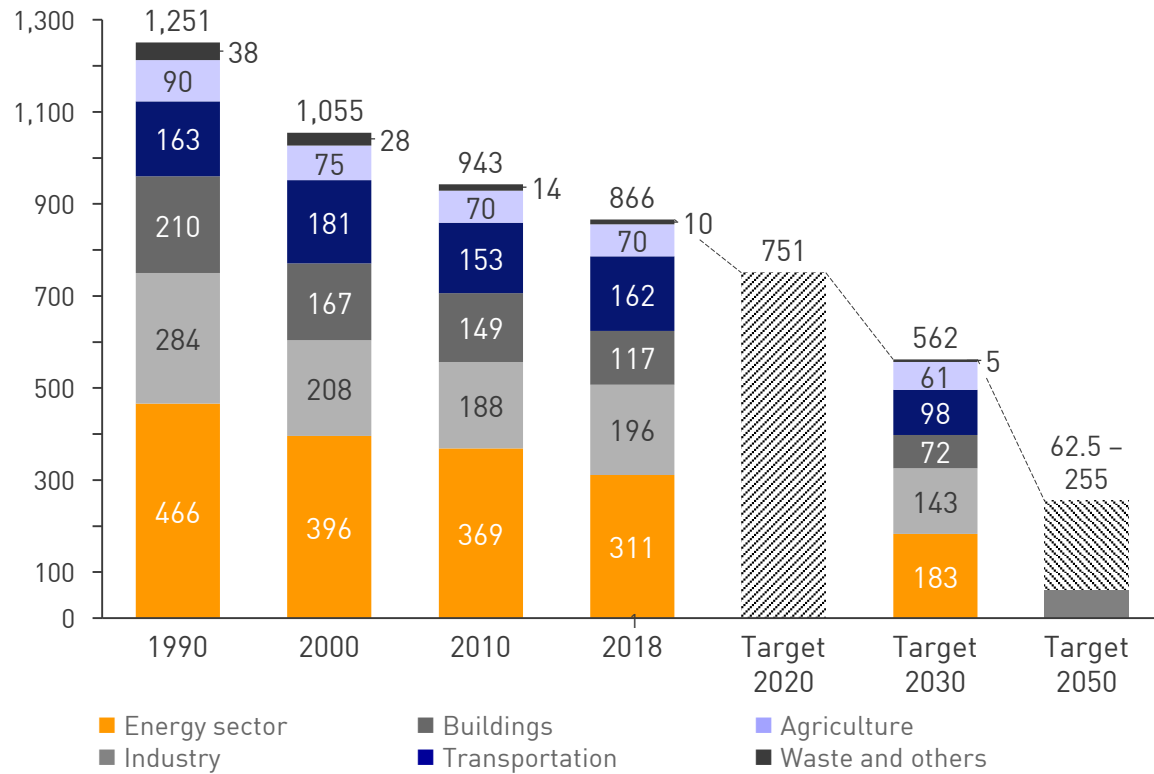


Current pledges lead to global warming of roughly +3°C

(without yet calculating the impact of tipping points, which are likely to occur at temperature increases >1.5°C)

2.2.2 Decarbonisation: National GHG emissions and climate protection targets

German GHG emissions by sector
(in m t CO₂-equivalent)



Sector targets for GHG emissions according to the German Action Plan (Klimaschutzplan) 2050

Sector	1990 (in m t CO ₂ -eq.)	2018 ¹ (in m t CO ₂ -eq.)	2030 (in m t CO ₂ -eq.)	2030 (reduction compared to 1990)
Energy	466	311	175-183	62-61%
Industry	284	196	140-143	51-49%
Buildings	210	117	70-72	67-66%
Transportation	163	162	95-98	42-40%
Agriculture	90	70	58-61	34-31%
Subtotal	1,213	856	538-557	56-54%
Waste and others	38	10	5	87%
Total amount	1,251	866	543-562	56-55%

> The emission reduction target for 2020 will be missed by at around 85 m t CO₂

> 2040 emissions target at least 70% below 1990 and 2050 target 80-95% below 1990

Source: German Federal Environmental Agency, 4 April 2019

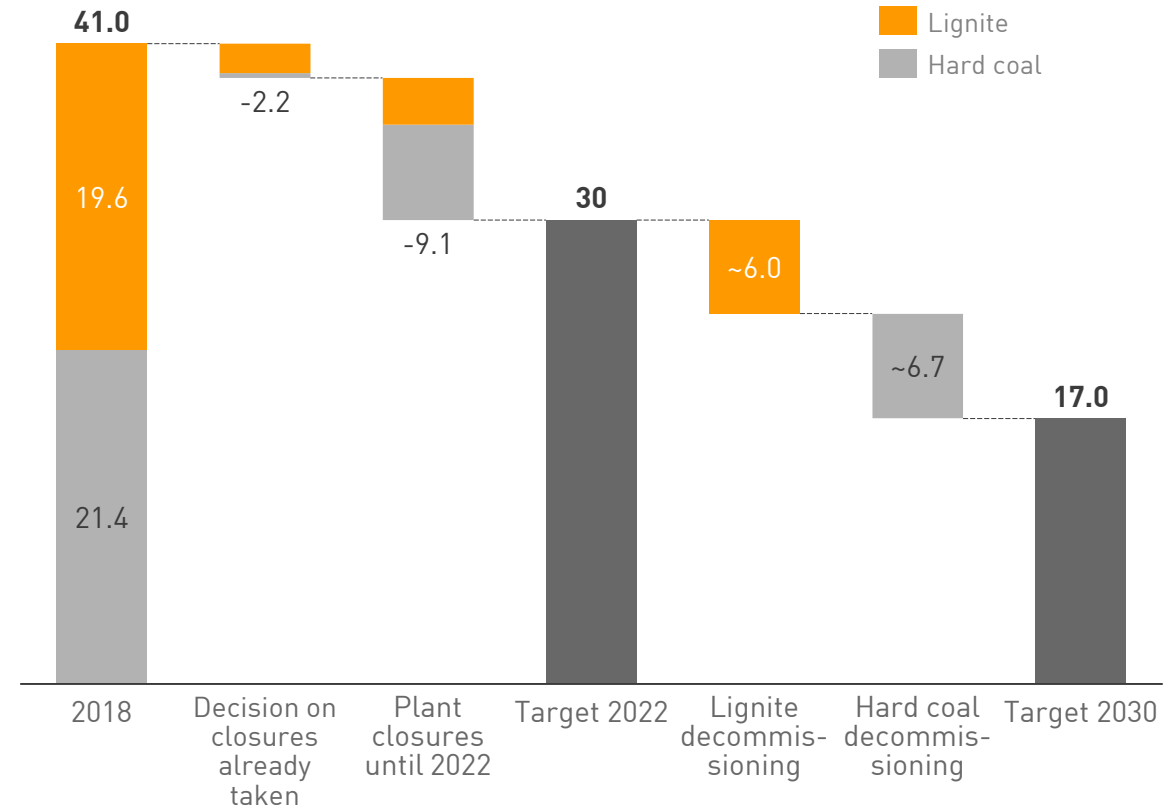
¹ Estimation

2.2.3 Decarbonisation: Significant reduction in coal-based generation decided

Situation in Germany

- > 2020 targets no longer attainable in Germany
- > Reduction in coal-based emissions from current levels essential to attainment of 2030 targets
- > Government announced to follow Coal Commission recommendations for coal decommissioning path until 2038
- > Coal phase-out to be implemented in three phases:
 - > Ad-hoc action (3 GW lignite; ~6 GW hard coal) to 2022
 - > Ongoing closures based on negotiations (lignite) and auctions (hard coal) 2023 – 2029 (expected)
 - > Ongoing closures 2030 – 2038 (details not yet known)

Coal capacity development as recommended by Coal Commission in GW



Significant policy-driven cuts in coal generation by 2030; initial action expected to be effective for 2020

2.2.4 Decarbonisation: Federal Government climate protection policies

§ Climate Protection Program 2030

- > In September 2019, Federal Government has published a key issues paper of planned Climate Protection Program.
- > Germany's 2030 target is composed of several sector targets. Climate Protection Program designated to attain both.
- > Ministries' proposals to close emission reduction gaps to be enacted with legislative measures, expected by end of 2019.

€ CO₂ pricing

- > German government decided to implement CO₂ pricing system in transport and heating sectors. System to start in 2021 with "fixed prices", followed by cap-and-trade-system with price corridor in 2026.
- > Government announced to support Carbon Price Floor on European level.

🔥 Renewable energy sources

- > RE expansion goals raised from 55% to 65% by 2030 (provided that the national grid is developed accordingly)
- > Special tenders in 2019-2021: 4 GW each for onshore wind and Photovoltaics; additional expansion of offshore capacity from 15 to 20 GW in 2030 envisaged in Climate Protection Program.



The autumn of 2019 will be crucial for Germany's climate protection policies: Coalition Parties attempt to overcome disagreements on ambition and instruments. Lines of compromise now manifested in Climate Protection Program. Regulatory implementation however expected to remain complex and difficult.

2.3.1 Regulated grids business



Regulatory environment

- › Electricity transmission, gas transport and distribution grids remain regulated, including in the long term, as a natural monopoly
- › Regulatory risks manageable due to the increasing stability of the regulatory framework
- › Revenue cap regulation enables grid revenues to remain independent of consumption fluctuations
- › Pressure to be as efficient as possible ongoing due to regulation
- › Improved investment conditions for transmission/transport grids on account of changes in the regulatory framework
- › The regulatory framework for investment in distribution grids has been improved in some respects as of the third electricity regulation period (from 2019) and gas (from 2018) due to the reform of the Incentive Regulation Ordinance
- › Amendment of Incentive Regulation Ordinance generally leads to no substantial change in the regulatory framework for transmission and distribution grid operators

TSO: Transmission system operator

DSO: Distribution system operator

HVDC: high-voltage direct current transmission technology



Challenges for grids in Europe

Three main challenges for grids:

- › Electricity generation is becoming increasingly uneven – fluctuations have an impact on grid stability
- › Many decentralised electricity generation plants connected to the grid – load flow reversals possible in some instances
- › Coal-to-gas fuel switching leads to a great increase in demand for gas transport capacity
- › Germany as a transit country – large proportion of cross-border trading

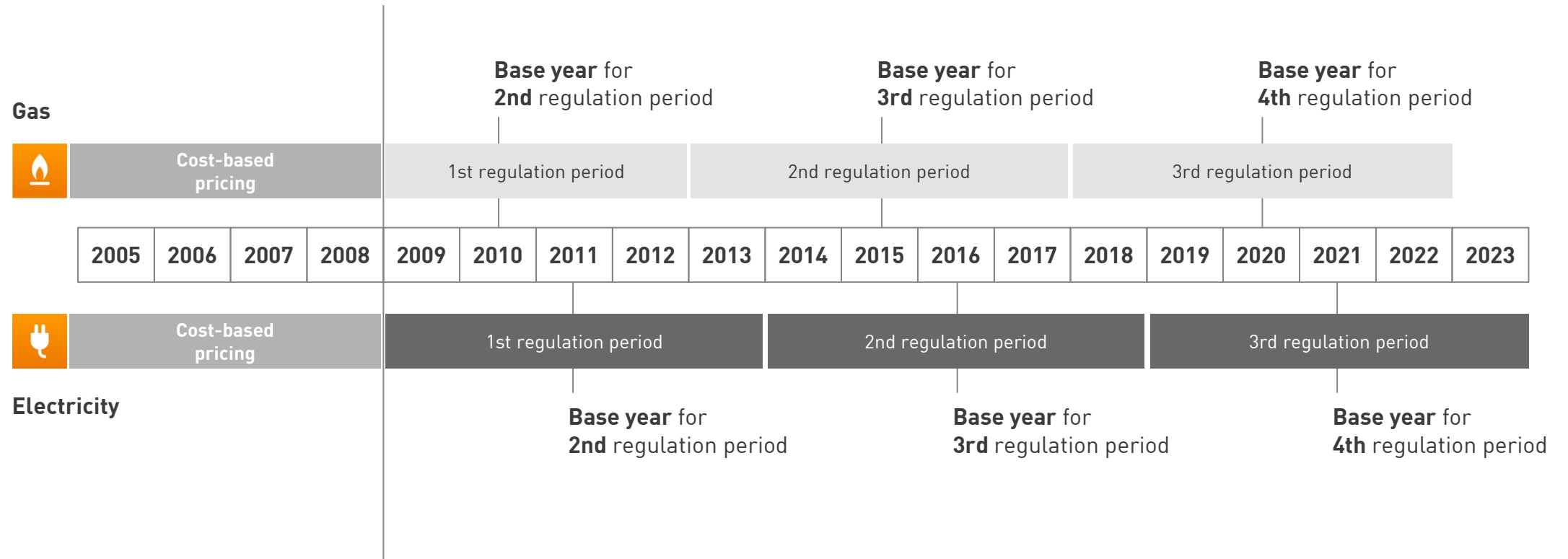
EnBW's approaches to solutions:

- › **TSOs:** New electricity transmission lines can bridge the distance between focal point of production and consumption centres; use of HVDC transmission lines and underground cables. Expansion of the gas transport network to cover capacity requirements
- › **DSOs:** Expansion of the grids to integrate renewables and charging infrastructure for electric cars, smart expansion of distribution grids, efficient and swift expansion of the distribution grids by municipal partners

2.3.2 Regulated grids business: Incentive regulation in Germany

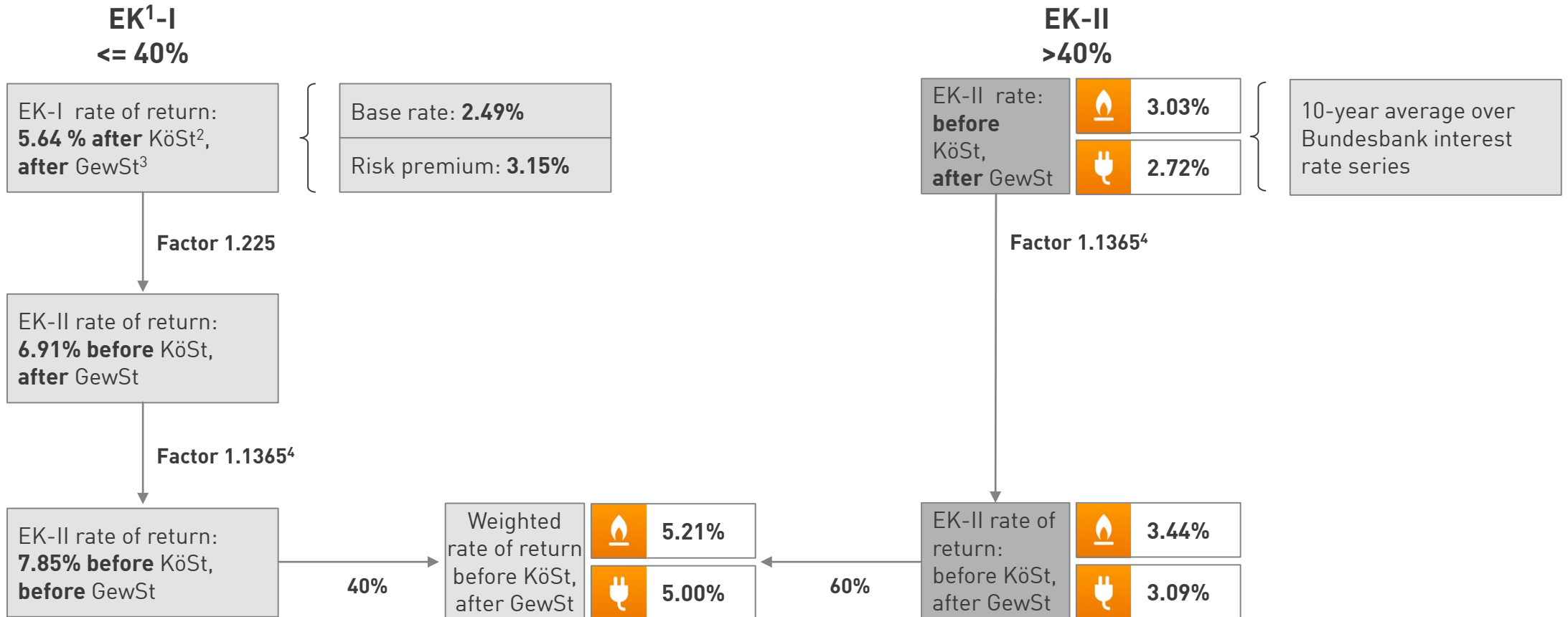


Introduction of incentive regulation
as of 1 January 2009





2.3.3 Regulated grids business: Return on new systems for the 3rd regulatory period



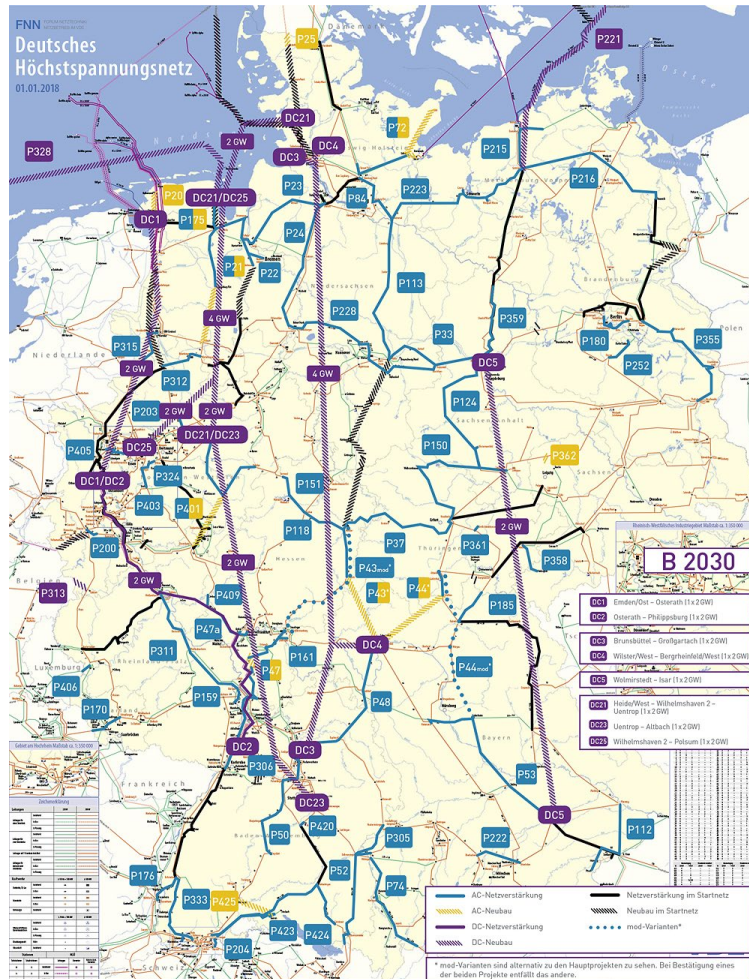
- > Irrespective of the actual financing structure, a maximum of 40% of capital employed is subject to the EK-I rate of return as this is capped at 40% of equity by law (Stromnetzentgeltverordnung)
- > Capital employed in excess of this amount is subject to the EK-II rate of return.

¹ Equity
² KöSt: Körperschaftssteuer – corporate tax

³ GewSt: Gewerbesteuer – trade tax
⁴ At tax rate 3.50% and multiplier 390%

2.3.4 Regulated grids business German high-voltage grid

German high-voltage grid



Source: VDE FNN/transmission system operators, as of 1 January 2018

6,700 km upgrading in existing line routes

- AC – reinforcement/recabbling: ~1,900 km
- AC – new lines in existing routes: ~4,500 km
- DC – recabbling: ~300 km

4,800 km network expansion in new line routes

- AC – new lines: ~1,000 km
- DC – new lines: ~1,000 km

➤ Existing grid to be expanded by more than 30% over current grid length

➤ €61 bn estimated investment needed, of which €30 bn for DC projects

➤ A further €18 bn in investment to connect new offshore wind farms



2.4 Market development



Generation and trading

- > Sustained trend towards renewable energies¹:
 - > 120 GW by 2020
 - > 160 GW by 2030
- > Time of profitable operation of conventional power plants in steady decline
- > Increasing power generation from gas power plants due to coal-to-gas fuel switching
- > Increasing volatility of prices and volumes



Power and gas grids

- > Volatile electricity generation detrimental to grid stability
- > Transmission grid expansion accelerated by raising the renewable energy target to 65% by 2030
- > Further investment needed for expansion of power distribution grids, e.g. due to the increase in e-mobility
- > Conventional power stations increasingly in back-up role
- > Accelerating expansion of smart grids
- > Strong expansion of gas transportation grids in Baden-Württemberg, due to fuel switch



Customers

- > Downturn in demand for electricity and gas due to energy efficiency and rise in demand from electric vehicles and residential heating sector¹ in the future.
- > Renewables for the most part in the hands of non-PSCs²
- > Consumer playing an increasingly active role with PV and battery systems and electromobility³
- > Landlord-to-tenant electricity supply still uneconomic (inhibited by EEG levy)
- > Number of energy co-operatives has increased since 2008 from ~150 to 860
- > Continued importance of developing new (digital) business models

- > **Technological developments:** More diversity, modularity and granularity in the energy system
- > **New market participants:** More competition and fragmentation of the value chain
- > **Regulatory framework:** Undergoing constant change, rising complexity

 **Business models of large utilities are changing; accelerating development of renewable energies and grids as well as new services for customers**

¹ Depending on regulatory policies

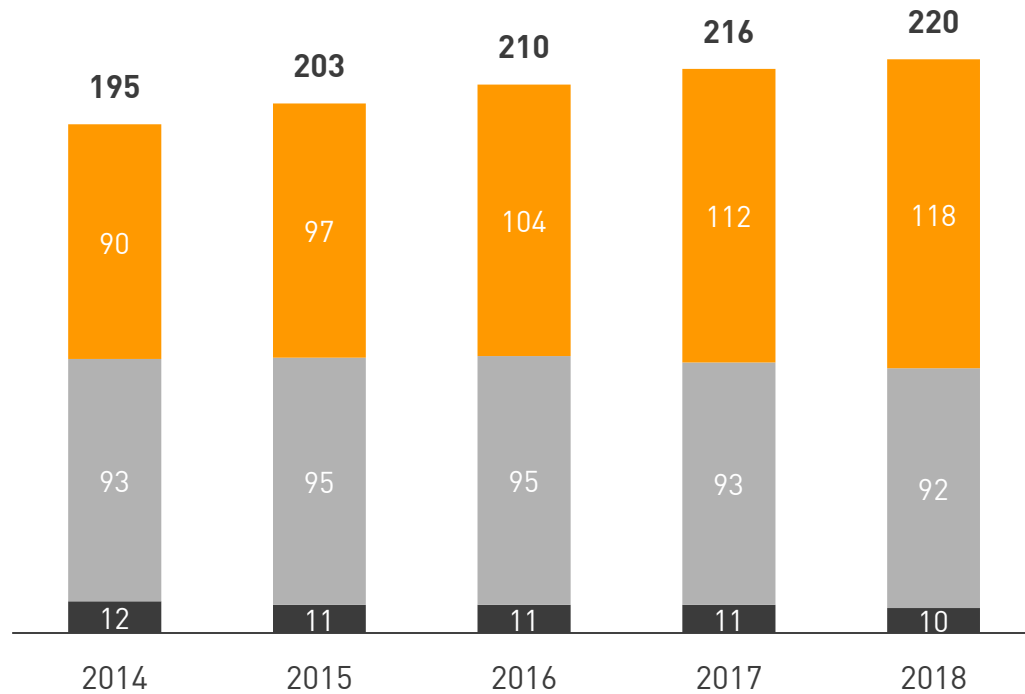
² Power supply companies

³ Rising new registrations compared to previous years

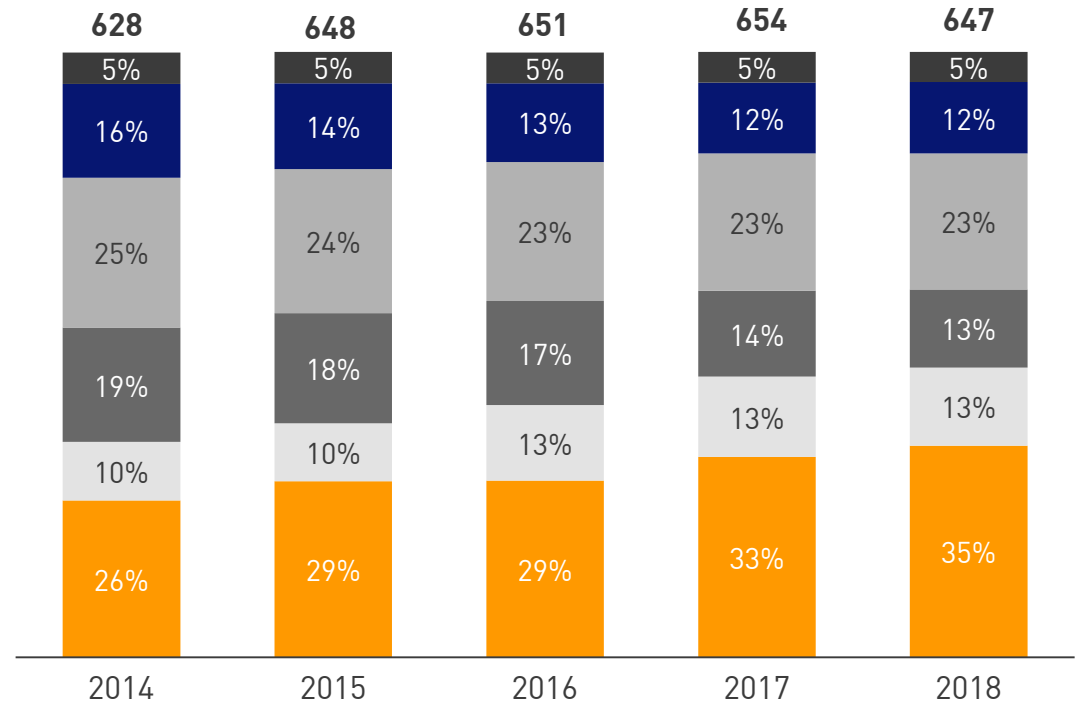
2.5.1 German electricity market: Installed capacity and generation



Installed capacity in GW



Generation in bn kWh



- Renewable energies
- Conventional thermal power plants and other
- Nuclear power

- Renewable energies
- Natural gas
- Hard coal
- Lignite
- Nuclear power
- Other (oil, pumped storage, etc.)

Source: BDEW, March 2019

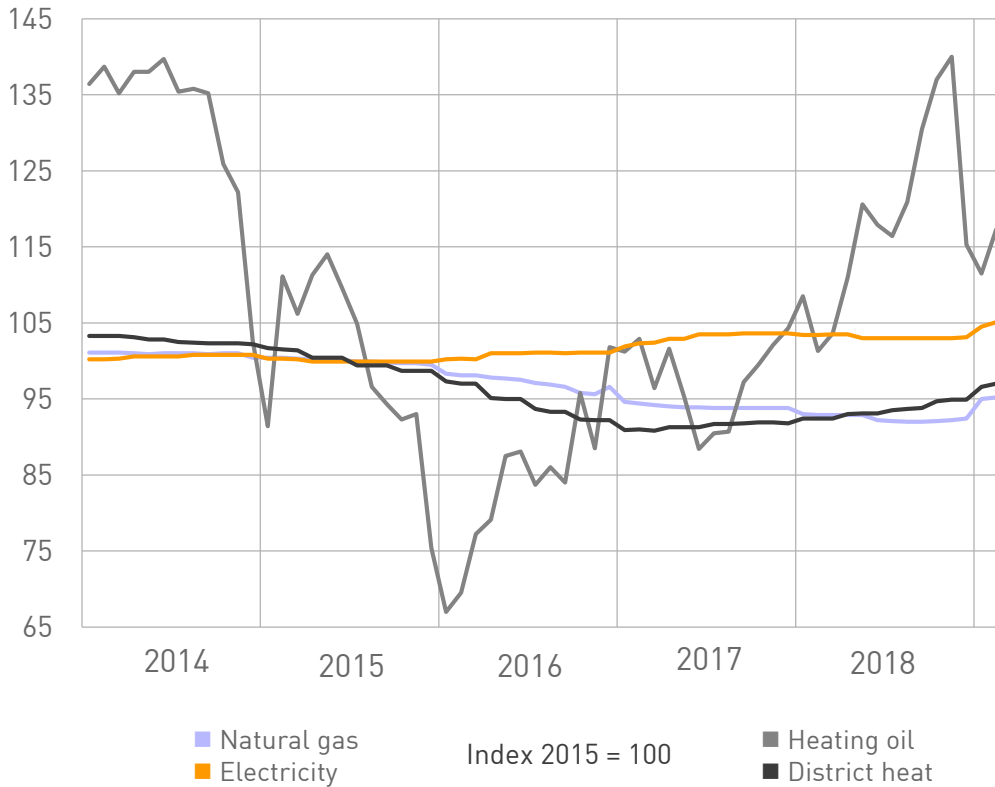


2.5.2 German electricity market: Development of household energy prices and electricity consumption



Energy prices in Germany

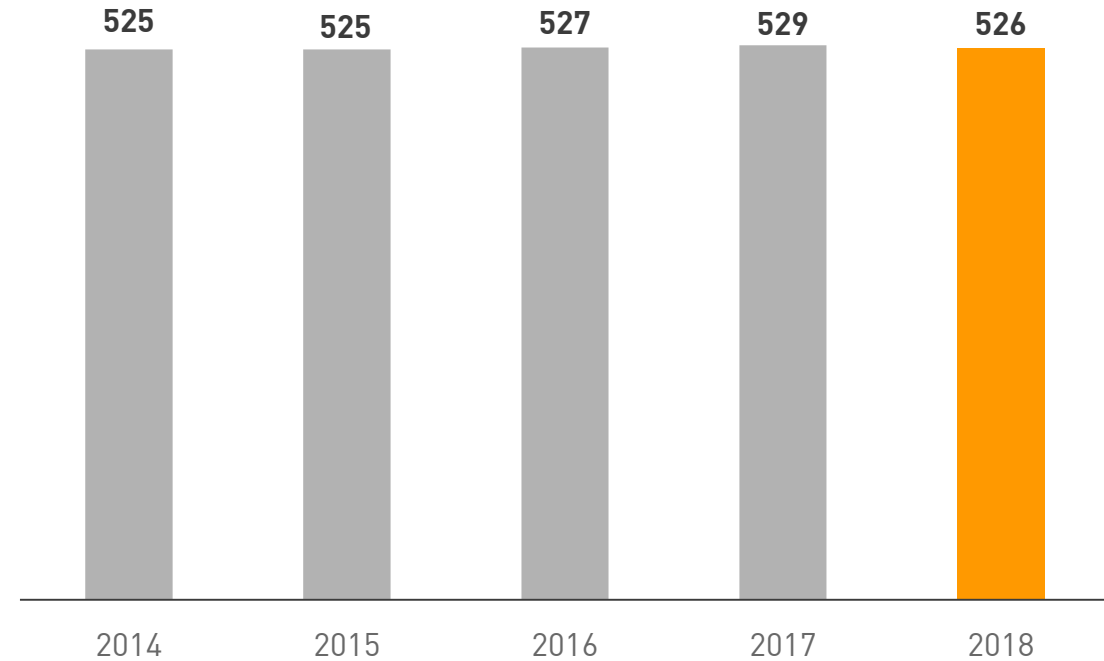
in €/MWh



Figures as of April 2019; Source: Federal Statistical Office (FS 17, R 2), BDEW (electricity 3,500 kWh/a) The chart shows the development of prices (indexed rates of increase, not absolute fuel prices) for heating oil, gas, electricity and district heating for households since January 2014 relative to the 2015 base year (annual average).

Electricity consumption in Germany

in TWh

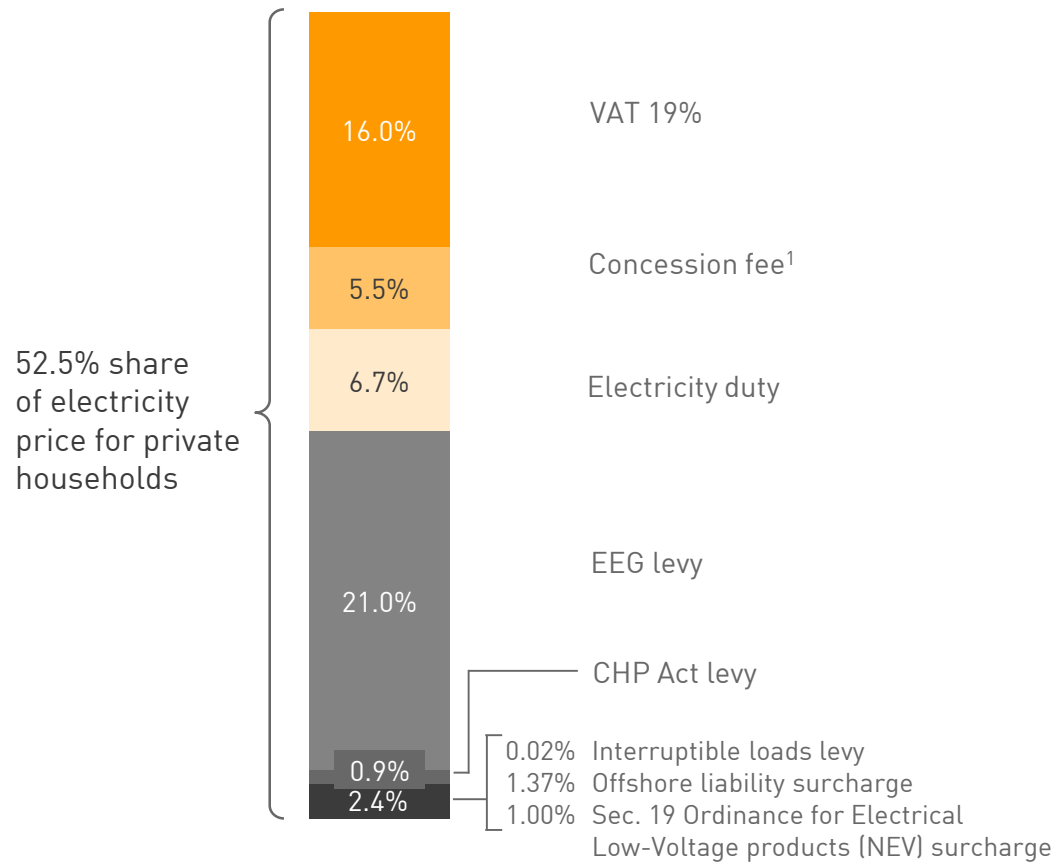


Net electricity consumption stable in the past few years; reduction due to efficiency is compensated by changes in consumption habits and economic growth

Figures as of February 2019; Source: AGEB

2.5.3 German electricity market: Electricity price

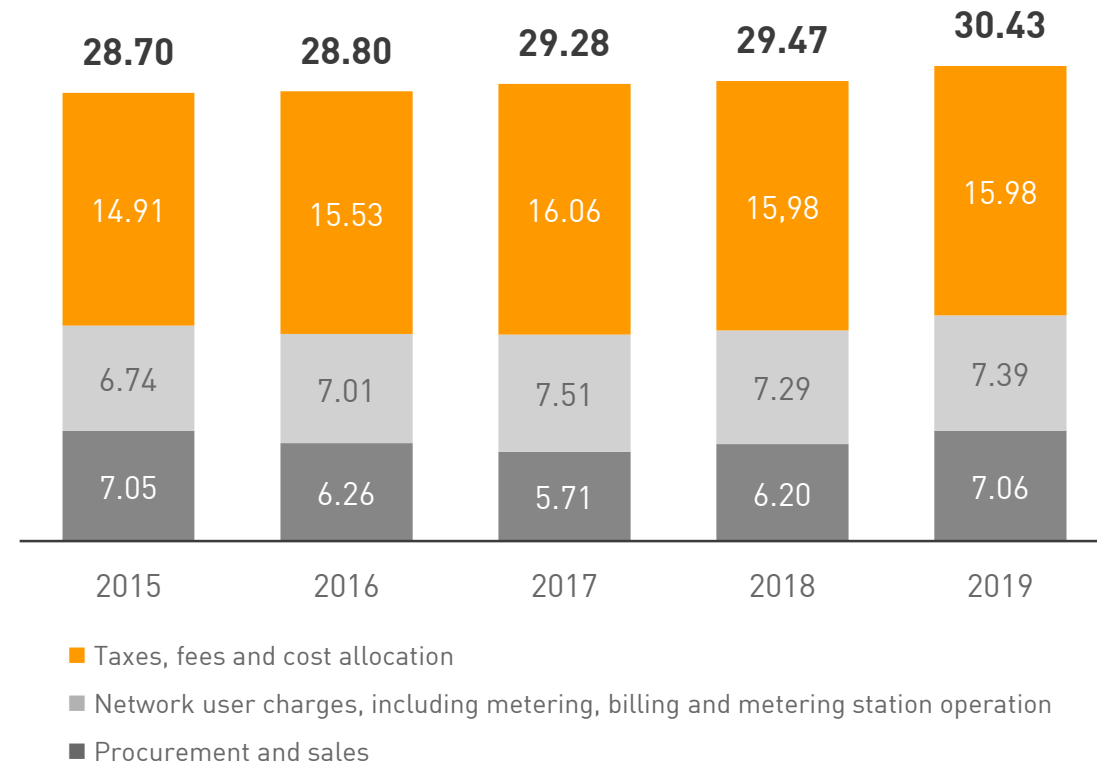
Electricity price for private households 2019



Source: German Federal Association of Energy and Water Management (BDEW), figures as of January 2019
 CHP: cogeneration combined heat and power

¹ Average concession fee; varies according to size of community

Average electricity price for a 3-person household (Annual consumption of 3,500 kWh) € cents/kWh



Figures as of July 2019; Source: BDEW

2.5.4 German electricity market: Wholesale forward price



Forward price for baseload electricity in Germany

in €/MWh





2.5.5 German electricity market: CSS above CDS



Clean-dark-spread base

in €/MWh

- > Gross margin of a coal-fired power plant (plant efficiency: 36%)

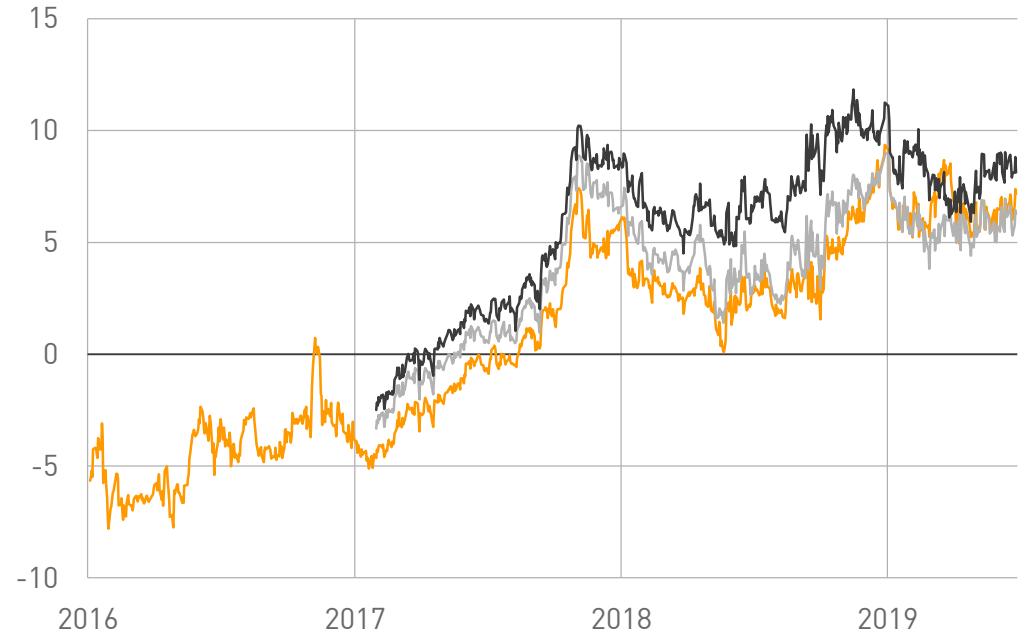


■ 2020
 ■ 2021
 ■ 2022

Clean-spark-spread peak

in €/MWh

- > Gross margin of a gas-fired power plant (plant efficiency: 50%)



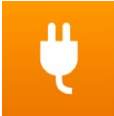

■ 2020
 ■ 2021
 ■ 2022

Clean-dark-spread is the corresponding indicator for coal-fired generation of electricity.

Clean-spark-spread represents the net revenue a generator makes from selling power, having bought gas and the required number of carbon allowances.



2.5.6 German electricity market: Comparison for electricity transmission and distribution grids

	 Transmission grids 380 kV, 220 kV	 Distribution grids ≤ 110 kV
Organisation	<ul style="list-style-type: none"> > 4 operators: 50Hertz, Amprion, TenneT, TransnetBW > Grid length: ~37,500 km > Grids owned by operators 	<ul style="list-style-type: none"> > 890 operators > Grid length: ~1,808,000 km > Franchises issued by municipalities > Competition for franchises
Tasks	<ul style="list-style-type: none"> > Ensuring balance between generation and consumption > Using balancing power 	<ul style="list-style-type: none"> > Connecting consumers and local providers > Recording incidents and troubleshooting
Challenge of the Energiewende	<ul style="list-style-type: none"> > Transport of wind-generated electricity from northern to southern Germany > Building new high voltage direct current (HVDC) transmission lines using underground cables > Connecting offshore wind farms 	<ul style="list-style-type: none"> > Connection of decentralised renewables (e.g. photovoltaics, wind) > Integration of charging infrastructure for electric cars > Use of smart grid tech and digitization of metering operation (e.g. smart meters)
Unbundling regulations	<ul style="list-style-type: none"> > Ownership unbundling, independent transmission operator (ITO) 	<ul style="list-style-type: none"> > Functional and financial unbundling of the grid business and obligation as to non-discriminatory use of grid information



2.5.7 German electricity market: Electricity grids are the backbone of the “Energiewende”



Electricity grids

General

- > The electricity grid business has become a growth business due to the remodelling of the energy market
- > Changes in legislation have simplified reimbursement for costs of investment in grids: e.g. revision of the Incentive Regulation Ordinance (ARegV)

Transmission grid

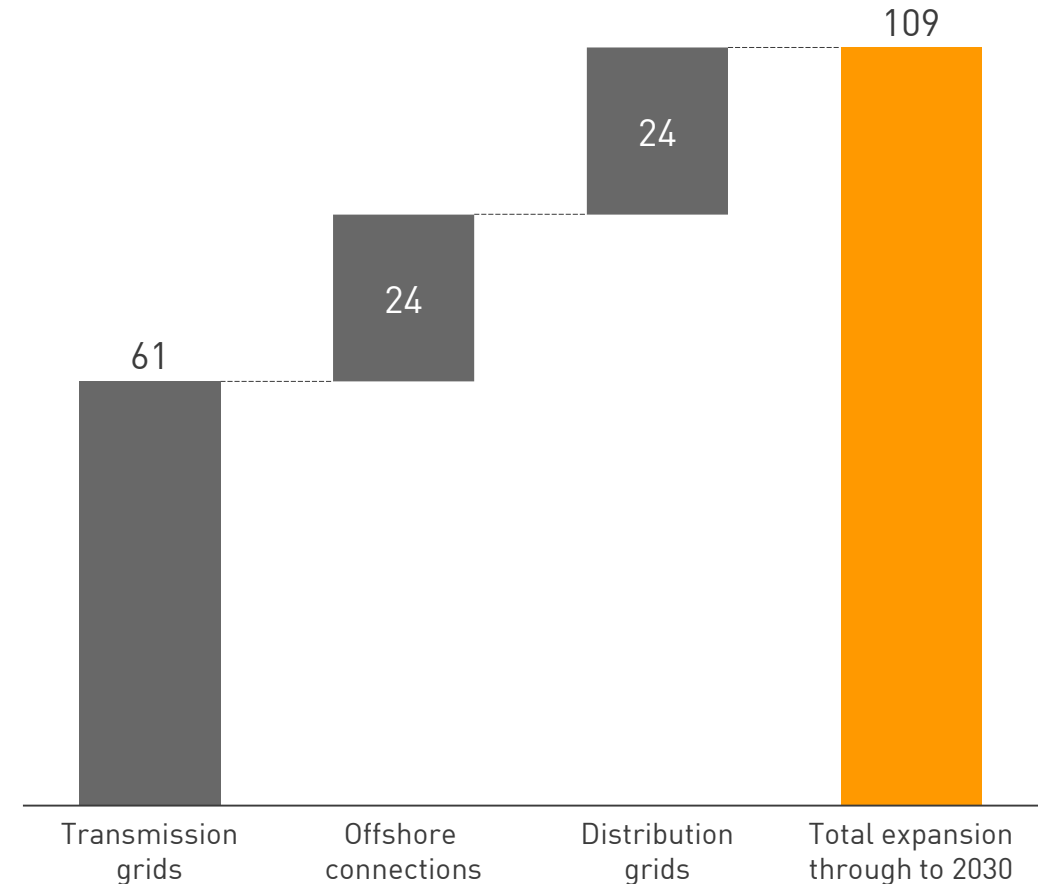
- > Growing geographical imbalance between generation and consumption
- > Expansion of transmission grid – primarily construction of high voltage direct current (HVDC) transmission lines and connection of offshore wind farms

Distribution grid

- > Feed-in growing due to local generation
- > Still strong trend back to municipal ownership (large share of concession already extended, however)

Capex for expansion of the German electricity grid through to 2030

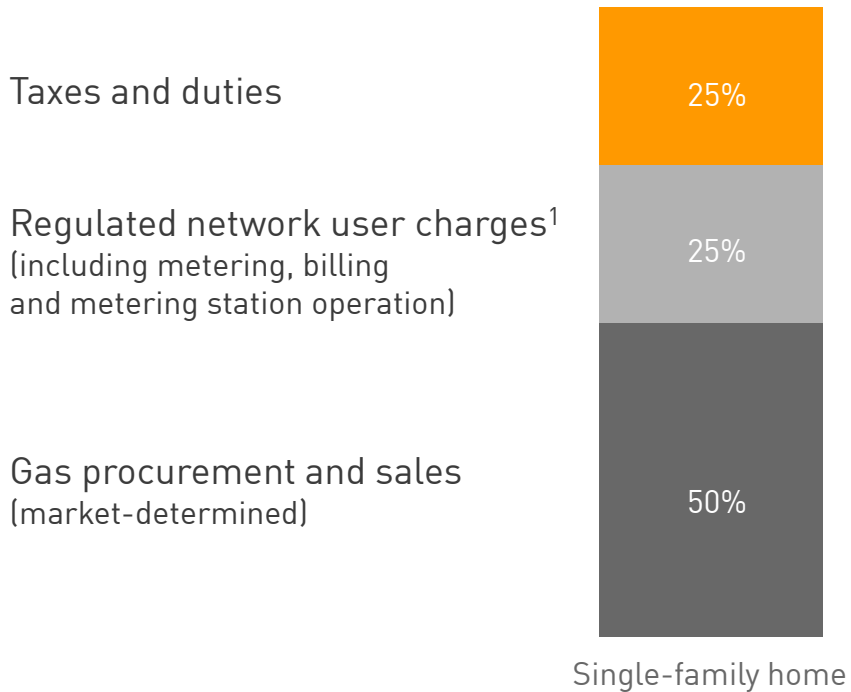
in € bn



Source: Federal requirements plan, second draft network development plan 2030 (version 2019), BMWi distribution grid study 2014, Oliver Wyman/TU München, 2018: “E-Mobilität setzt Netzbetreiber unter Druck” (“E-mobility putting pressure on grid operators”), own estimates

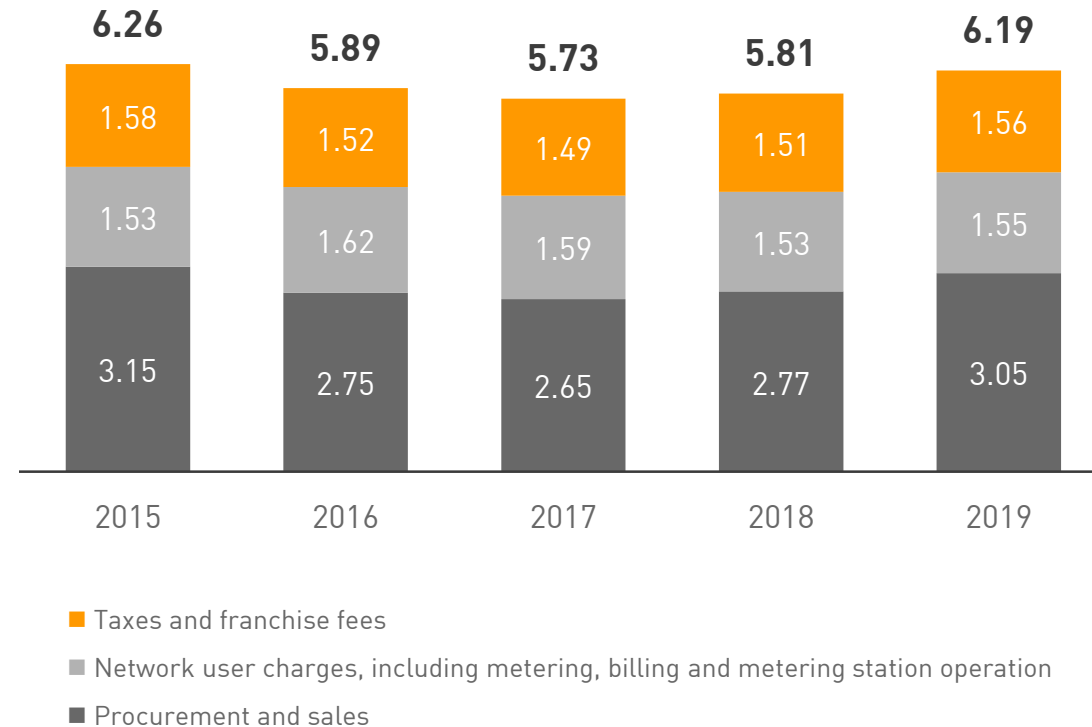
2.6.1 German gas market: Gas price

Gas price



Single-family home, gas central heating

Single-family home, gas central heating including hot water, customer on contract with regional default supplier²
(annual consumption 20,000 kWh)
€ cents/kWh



¹ Average net network user charge including charges for metering, metering station operation and billing, subject to large regional variation, figures as of 07/2019; source: BDEW

² Most heating gas customers are customers on contract with the regional default supplier with a reduced concession fee (0.03 ct/kWh); figures as of 07/2019; source: BDEW



2.6.2 German gas market: Front month price and spot market development



Front month reference prices¹

in €/MWh



Spotmarket reference prices¹

in €/MWh



¹ Average of Gaspool and NetConnect Germany (NCG)

2.6.3 German gas market: Comparison for gas transport and distribution grids



Gas transport grids 380 kV, 220 kV



Gas distribution grids ≤ 110 kV

	Gas transport grids 380 kV, 220 kV	Gas distribution grids ≤ 110 kV
Organisation	<ul style="list-style-type: none"> > 16 grid operators > Grid length: ~38,800 km > Grids owned by operators > Two market areas (NetConnect Germany and Gaspool) (consolidation planned in 2021) 	<ul style="list-style-type: none"> > 718 grid operators > Grid length: ~498,000 km > Franchises issued by municipalities > Competition for franchises
Tasks	<ul style="list-style-type: none"> > Transport gas from import to export points (transit) and vice versa (DSOs and industry or other market areas) 	<ul style="list-style-type: none"> > Connecting consumers and local providers > Recording incidents and troubleshooting
Challenge of the Energiewende	<ul style="list-style-type: none"> > Long term: potential use of natural gas grid as storage medium for electricity generated from renewables 	<ul style="list-style-type: none"> > Integration of bio natural gas and synthetic natural gas via power-to-gas plants > Degree of utilisation if electricity heating and long distance heating increases
Unbundling regulations	<ul style="list-style-type: none"> > Ownership unbundling, independent transmission operator (ITO) 	<ul style="list-style-type: none"> > Functional and financial unbundling of the grid business and obligation as to non-discriminatory use of grid information



2.6.4 German gas market: Gas grids are a major element of the “Energiewende”



Gas grids¹

Transport grid

- > Increasing capacity requirements from changes in regulatory environment: Switch in the market from L-gas to H-gas (approx. half of L-gas from Netherlands to be replaced by H-gas from Russia/Norway by 2025)
- > In addition, the capacity requirement increases due to the coal-to-gas fuel switch, especially in Baden-Württemberg

Distribution grid

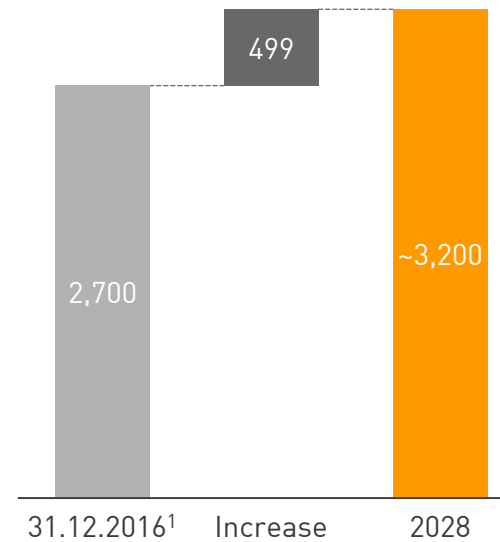
- > Smaller scale of expansion compared to electricity because “Energiewende” has less pronounced effect on gas market
- > Growth potential due to the connection of new communities to the natural gas grid
- > Still strong trend back to municipal ownership

L-gas: low calorific gas

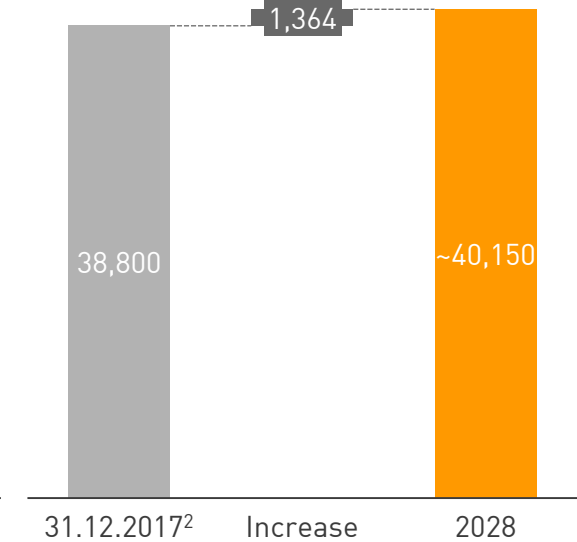
H-gas: high calorific gas

Expansion of the gas transport grid in Germany through to 2028

Compressors
in MW



Transport lines
in km



 **2018-2028:
Investment of ~ €6.9 bn in transport grids in Germany**

¹ Source: Gas network development plan 2018-2028

² Source: BNetzA/BKartA Monitoringbericht (Monitoring Report) 2018

2.7 Broadband/telecommunications market to see strong growth in coming years



Market trends & development

- > Broadband/telecommunications market increasingly dynamic: **nationwide presence a key success criterion**
- > **Expected development boost** for new infrastructure technologies:
 - > **Nationwide rollout of optical fibre essential** in medium term with around €100 bn expected investment in infrastructure
 - > **€12 bn in grants** available through to **2025**
- > **Rollout** of new **regional and nationwide optical fibre networks** planned by EnBW
- > 5G emerging as a **key technology** in **digital transformation** – optical fibre infrastructure needed for 5G to work
- > **Market growth of approx. 17%¹ expected** in telecommunications/broadband by 2025

EnBW's ambitions & goals

- > EnBW provides telecommunications services throughout Germany
- > New chapter for EnBW – successive rollout – focus on B2B and municipal utilities
- > EnBW prepared to provide massive support in 5G infrastructure rollout



Profitable growth, especially in asset sector and B2B, an overarching goal for EnBW



2.8 Competitors: International, national, regional and new competitors



Competitors	Companies	Characteristics	Position of EnBW
International		<ul style="list-style-type: none"> > Broad-based, internationally oriented growth strategy > Growth especially in renewable energies, grids and sales/solutions 	<ul style="list-style-type: none"> > EnBW is positioned as an integrated energy company focusing on Germany and selected foreign markets > Main growth areas: <ul style="list-style-type: none"> - Renewable Energies - Grids - Customer Solutions
National (DACH region)		<ul style="list-style-type: none"> > Stable national position, activities in selected foreign markets > Focus on market development, for example in renewable energies, grids, sales and/or solutions 	
Regional		<ul style="list-style-type: none"> > Focus on regional markets > Business activities mainly focused on grids and sales 	
New		<ul style="list-style-type: none"> > Entry of new market participants > Focused on single parts of the value-added chain – high degree of specialisation within each field leads to growing impact of specific success factors 	

Key challenge: Optimal positioning given the regulatory/competitive market environment



2.9 The “Energiewende“ increases competition

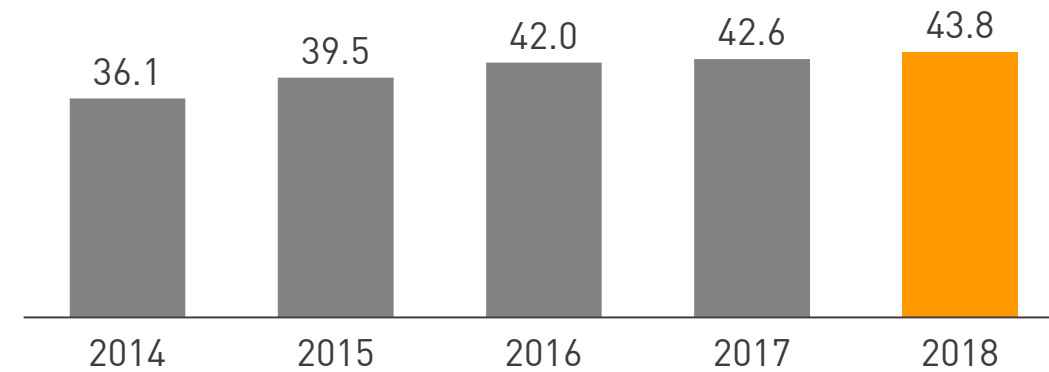


Retail and customers – trends

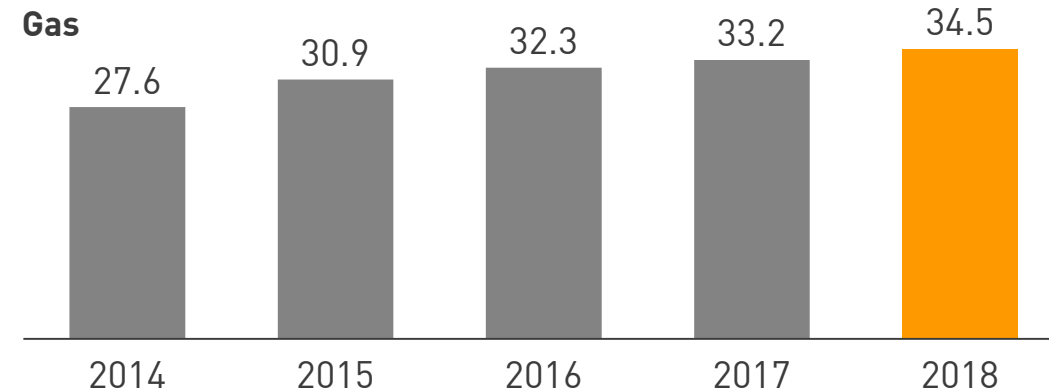
- › Growing price sensitivity¹ and new competitors lead to fiercer competition
- › Lateral entrants, disruptive suppliers and intermediaries are increasingly competing for customers and market shares
- › Commodity business (electricity and gas) is still significant. In order to make pure electricity and gas products more interesting and/or emotive for customers, utilities are increasingly supplementing their products with energy-related or non-energy-related additional services.
- › Local energy production by customers on the rise: Consumers are becoming prosumers
- › Intelligent meters change customer access and are a prerequisite for the development of future energy solutions business
- › Increasing convergence on the markets due to sector coupling and the electrification of heating and transport (car manufacturers, CHP manufacturers as electricity suppliers and virtual power plant platform operators)
- › Non-industry companies continue to be popular sales partners. The aim is often to increase reach and develop new customers groups
- › Eco-energy again has a greater influence on the customer’s supplier decision¹

Strong competition: Cumulative churn rate of retail customers² in %

Electricity



Gas



¹ Source: Kreuzer Vertriebskanalstudie 2018

² Source: BDEW 2019

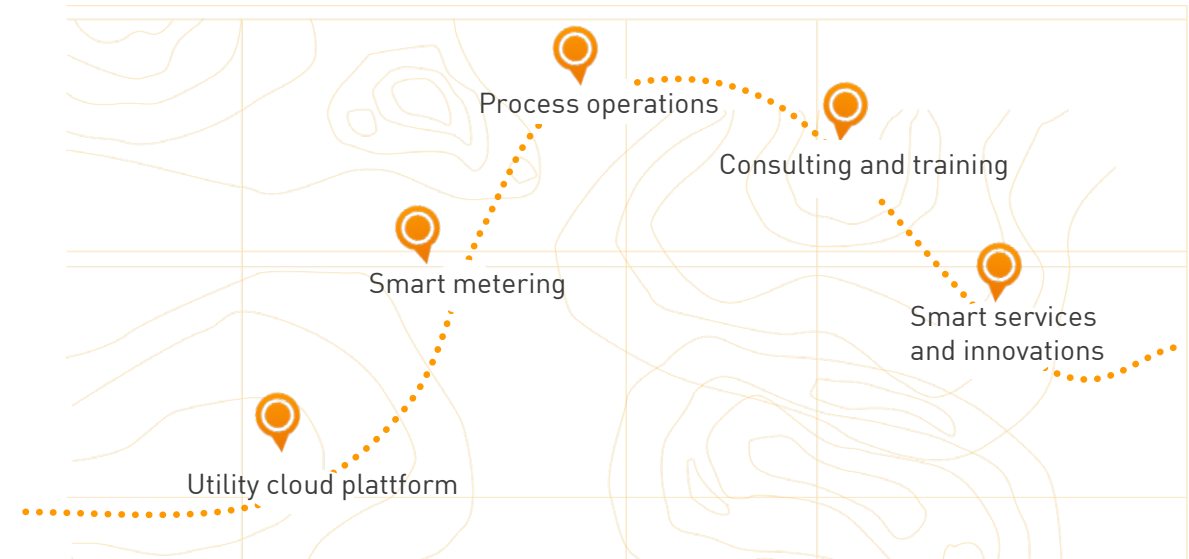
CHP: cogeneration combined heat and power

2.10 Market potential for energy-related services

Operations

- › Market for energy-related services very fragmented
- › Market volume in Germany €5.5 bn
- › Intense competition with new players from the energy industry, and from other industries, continually surging onto the market
- › Growing challenges for municipal utilities from rising pressure on costs, the need to meet regulatory requirements and billing technology for the remodeling of the energy market
- › High fixed costs mean that the business is heavily influenced by economy of scale
- › Cost advantages for large providers
- › Technology shift and economies of scale offer significant growth opportunities in the market, especially in the area of smart metering solutions

Services and key competencies

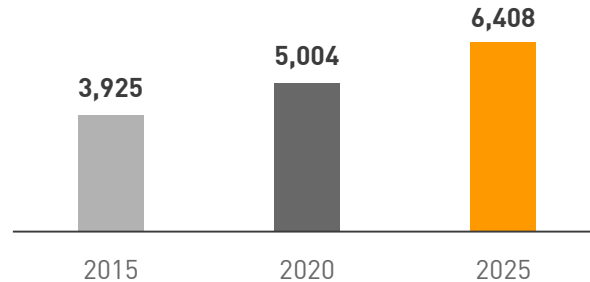


- › EnBW services cover the complete meter-to-cash value chain. Services can be chosen to suit the individual needs of utility companies
- › Services for non-commodity products and solutions, e.g. e-mobility and bundled prosumer products
- › Services either as software-as-a-service (SaaS) only or full-scale business process outsourcing
- › Launch of new EnPowerX service and IT solution for suppliers by EnBW in 2019. SaaS solution based on state-of-the-art technology.

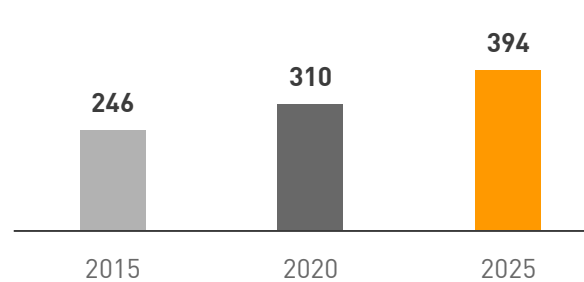
2.11.1 Contracting: Media and services from a single source

Growth in German contracting market to 2025¹

Value pool
in € m



Profit pool
in € m



- › **Continuous market growth through to 2025**
(also aided by energy price increase)

- › **Growth opportunities to be exploited**, primarily by:

- › Expanding and adding versatility in the service portfolio
- › Expanding activities in the role as **infrastructure service provider** (e.g. combining energy supply with charging infrastructure, storage systems, etc.)

EnBW's market position

- › Custom contracting solutions for industry, housing sector, public sector and commercial/retail/service customers – spanning the entire value chain
- › 200 plants under contract
- › Core contracting activities complemented with additional services around plant energy efficiency
- › Wide range of plant types (including large complex plants, currently up to 100 MWth) for diverse customer needs; focus on heat and/or power (CHP)
- › Targeting German national market
- › Main focus in housing sector projects currently on Baden-Württemberg and selected regions

¹ Source: Marktperspektive (Market Outlook) 2016 – sales segment

CHP: cogeneration combined heat and power



2.11.2 Contracting: Challenging market environment



General market trends

- > Increasing importance of distributed energy
- > Slight rise in energy prices in next few years
- > Slight medium-term rise in interest rates
- > Increasingly complex regulatory framework, such as building energy efficiency requirements (smart buildings)
- > Current customer segments to retain relevance through to 2025 (in terms of value pool) – industry remains biggest segment



Customer trends

- > Growing numbers of (complex) distributed energy systems
- > Focus on core business: capex optimisation, reduction of operating risks in energy provision
- > Increasing demand for outside staff (rather than maintaining in-house resources) for “special” task area of distributed energy
- > Key importance of energy efficiency (energy the biggest cost factor)
- > Majority of residential housing stock outdated in terms of energy efficiency; interest in modernisation, with focus on heating and additional services



Provider/product trends

- > Integration of additional services, such as energy management (and energy management systems)
- > Increasing use of combination packages and new contracting models, such as landlord-to-tenant electricity supply and combining with other services (e.g. direct marketing) and systems (e.g. charging infrastructure)
- > Ongoing need for complex custom solutions, with partial standardisation for smaller-scale projects and housing sector
- > Expansion of (direct) marketing and local presence; more alliances
- > Digitization, such as systems monitoring and energy data monitoring



Market and customer trends require contracting providers to adjust their capability portfolios, mostly in terms of media mix, increased versatility and additional services





Agenda 3 – Strategy

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 - > Key non-financials
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 - > Regulatory environment
 - > Markets
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 - > EnBW 2025 Strategy
 - > Further strategic aspects:
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Innovation, Corporate Sustainability,
Decarbonisation, Corporate Governance,
Compliance, Data Protection
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 - > Grids
 - > Renewable Energies
 - > Generation and Trading
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 - > Pražská energetika, a. s.
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8. Service page 155 >>
 - > Financial calendar
 - > Contact details
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3.1 EnBW 2020 strategy: Corporate strategy



Energiewende. Safe. Hands on.

	 Customer proximity		Engine room of the Energiewende 
Where shall we play?	<ul style="list-style-type: none"> > End customer business for electricity and gas > Energy-related services/energy efficiency (defined B2C and B2B segments, increasingly for municipal utilities and local communities) > Trading and origination 	<ul style="list-style-type: none"> > From the region of Baden-Württemberg into Germany, Austria, Switzerland and Turkey 	<ul style="list-style-type: none"> > Wind (onshore and offshore) and hydropower > Conventional generation, located mainly in Baden-Württemberg > Transmission and distribution grid infrastructure managed from Baden-Württemberg into neighbouring regions (also as service provider)
How can we win?	<ul style="list-style-type: none"> > System expertise for energy > Innovative capability and innovation management > Strong brand portfolio 	<ul style="list-style-type: none"> > Stringent performance management > Partnerships and fostering dialogue 	<ul style="list-style-type: none"> > Operational excellence > Infrastructure in the energy industry > Regulatory management > Active opportunities for third parties to invest and participate
What should our structure be?	<ul style="list-style-type: none"> > Building up of an Innovation campus > Acquisition of/joint ventures with energy-related companies 	<ul style="list-style-type: none"> > Simple and functional management with simple structures, flat hierarchies and lean processes 	<ul style="list-style-type: none"> > Maximum efficiency > Stringent cost orientation for defined quality level (target costing) > Simplicity and standardisation > Technological development partnerships

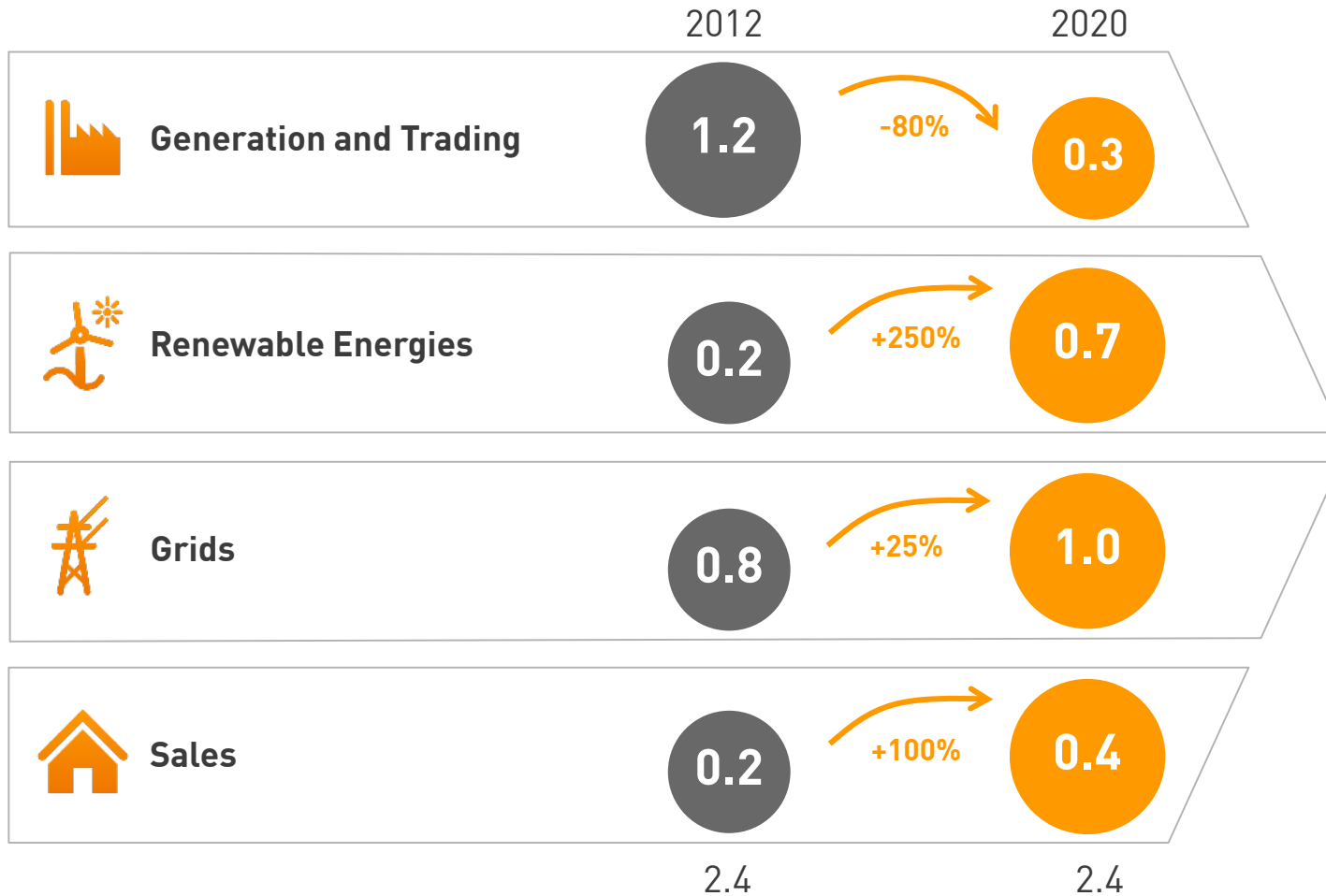


3.2 Strategy: Implementing the EnBW 2020 Strategy requires major portfolio transformation



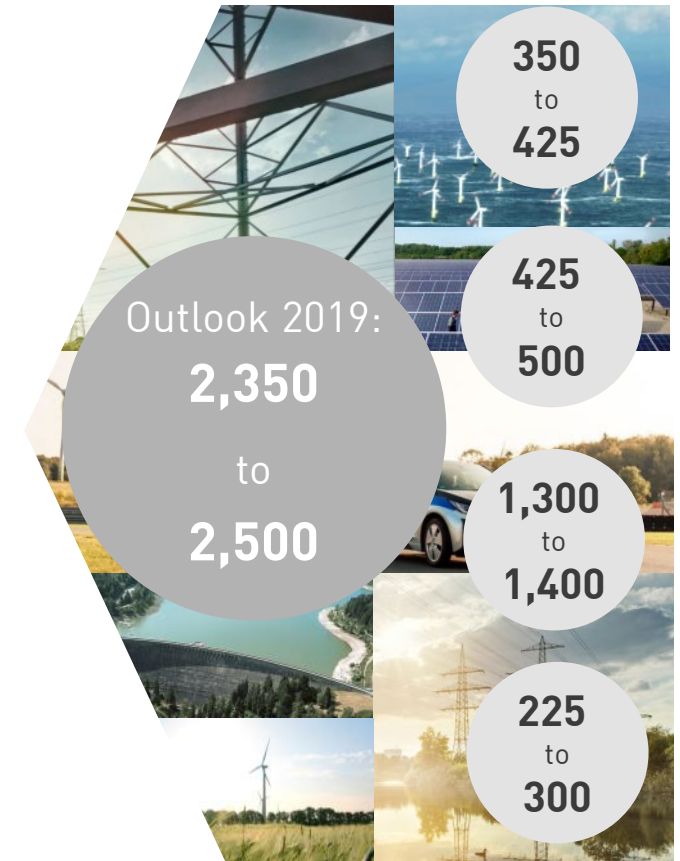
Adjusted EBITDA

in € bn



Adjusted EBITDA

in € m



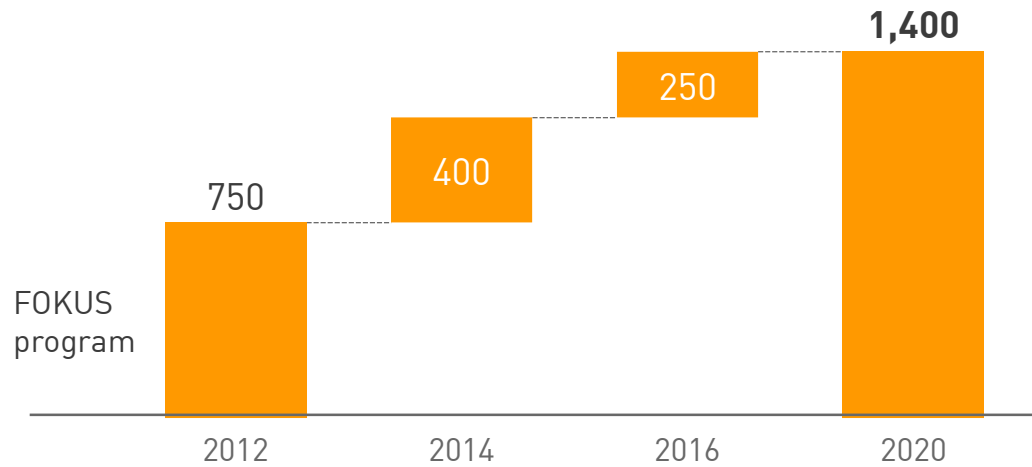


3.3 Strategy: Efficiency targets already to be met by 2019



Efficiency programs: Launch

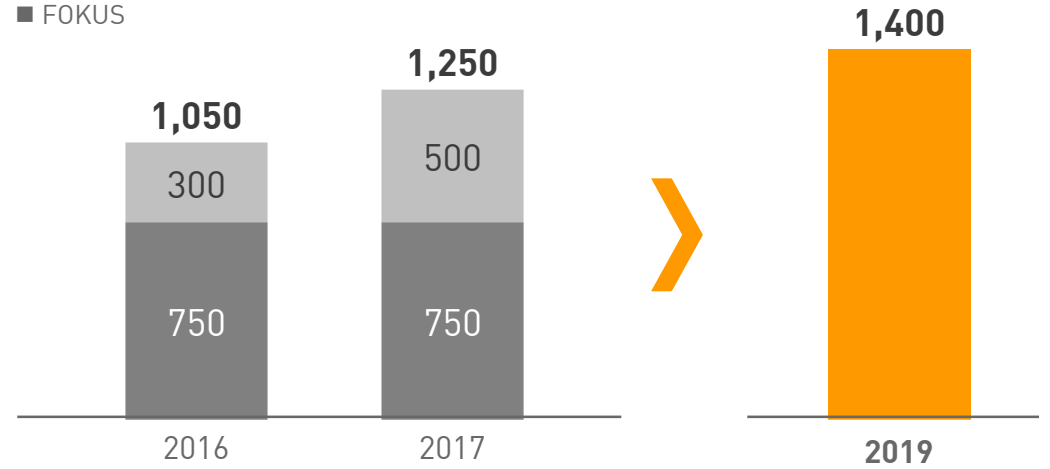
in € m



Efficiency measures: Ramp-up

in € m

■ Additional
■ FOKUS



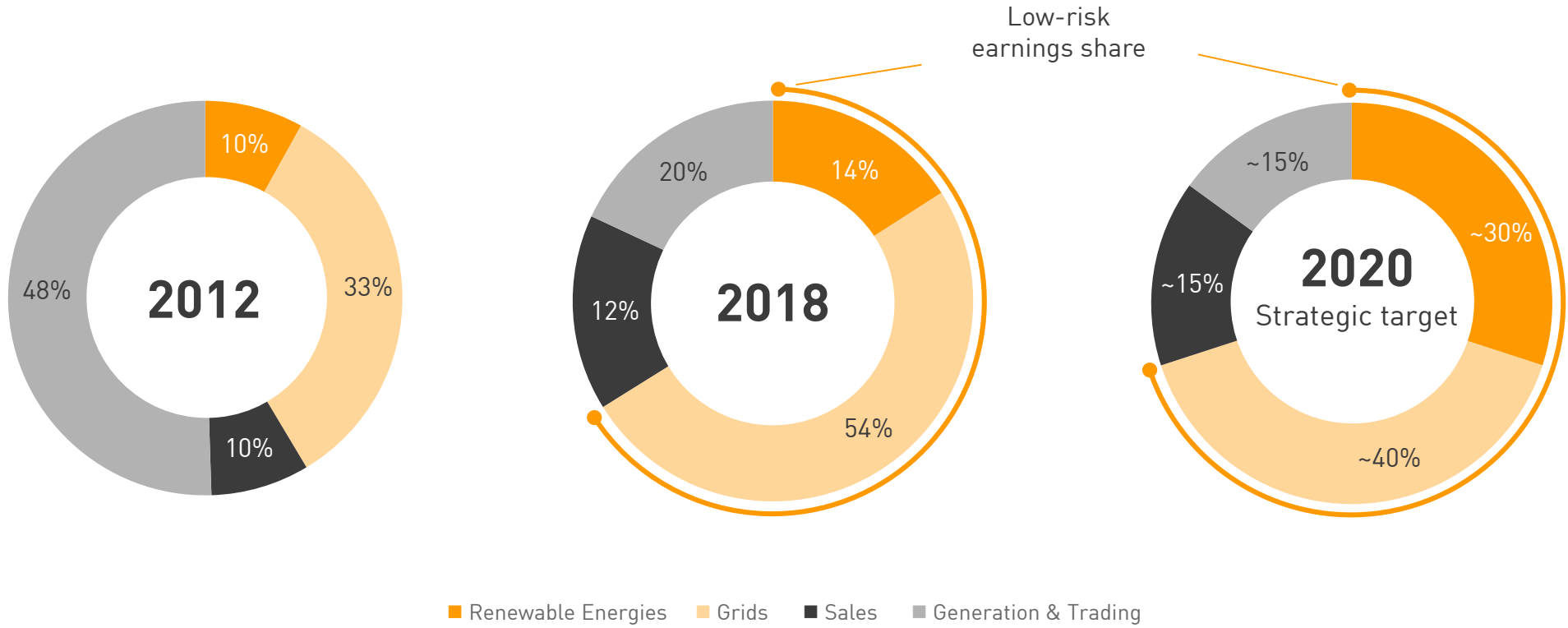
- > Unprofitable power plants incorporated in German power plants network reserve
- > 2016: Exit from unprofitable B2B commodity business
- > ~€150 m p.a. contribution from functional units, including holdings such as VNG



3.4 Strategy: Share of adjusted EBITDA from low-risk activities will increase from around 40% to at least 70% in 2020



Earnings share per business segment¹



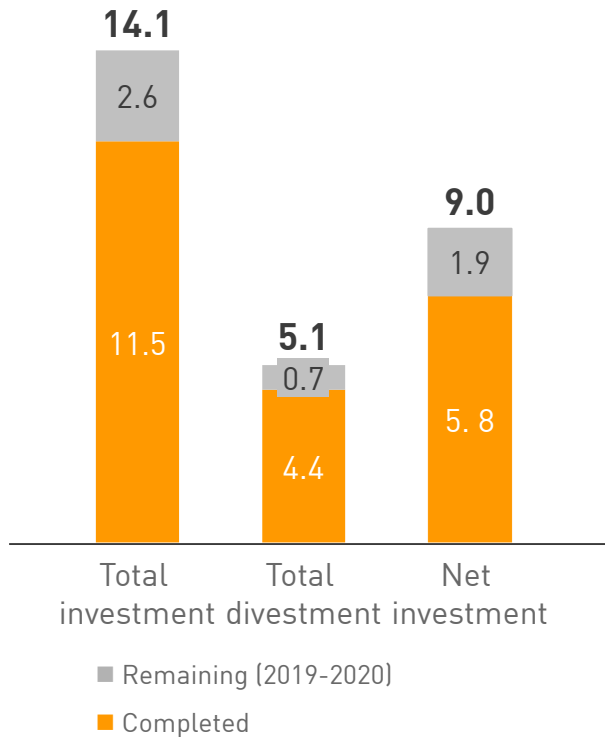
¹ May not add up to 100% due to rounding



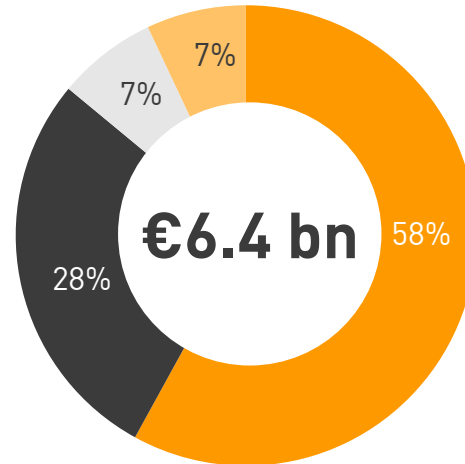
3.5 Strategy: Infrastructure investments fit well with EnBW's business model



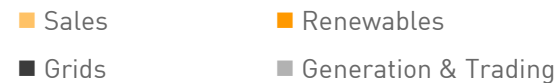
Investment/divestment volume 2012-2020¹
in € bn



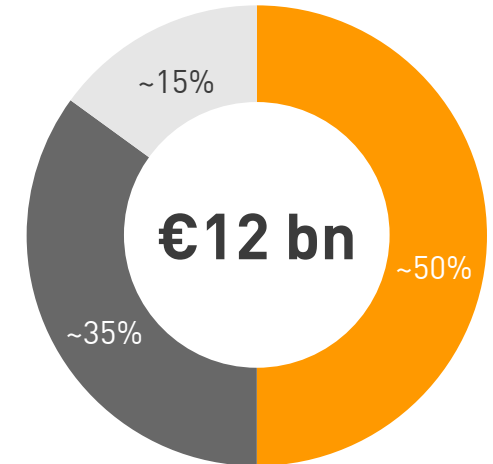
Investment volume 2019-2021²



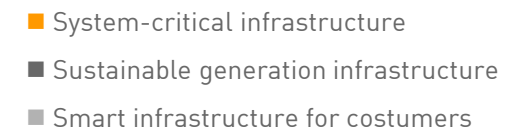
- ~€1 bn divestments**
- > Investment models in onshore sector
 - > Disposal of remaining minority share in EWE



Investment volume 2021-2025²



- €12 bn investment**
- > of which 80% in growth



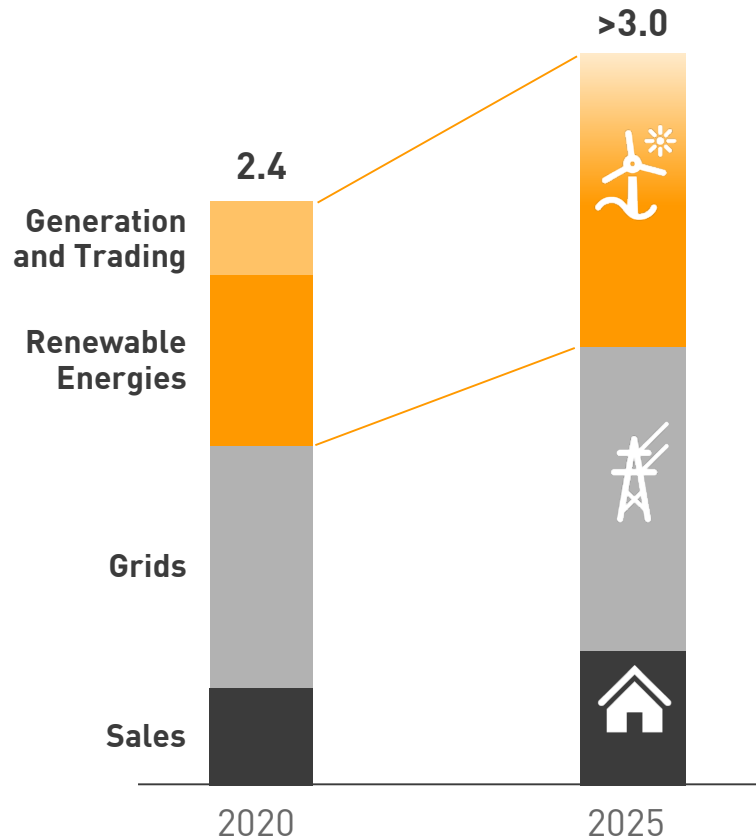
¹ As of 31 December 2018; 2012 reference year;
² May not add up to 100% due to rounding

3.6 Strategy: Transformation phase 2013-2020 followed by growth phase 2021-2025



Development of earnings

Adjusted EBITDA in € bn



Sustainable power infrastructure

- > Expansion of renewable energies:
 - > Offshore wind
 - > Onshore wind and photovoltaics
- > Selective international business activities: Taiwan, U.S.
- > Actively driving decarbonisation



System-critical infrastructure

- > Profitable growth in the distribution grid
- > Significant expansion of electricity transmission grid: Suedlink together with Tennet
- > Growth of network-related service



Smart infrastructure for customers

- > Reorganisation and digitization of B2C sales and transformation to customer infrastructure business
- > Expansion of the solution portfolio: contracting
- > New infrastructure-related business areas beyond energy



3.7 Strategy: Valeco acquisition contributes to EnBW's strategy 2025



- > Increase in **production capacity** by 100 MW (at least 35 MW fully consolidated) in 2020
- > **EBITDA contribution** of approx. €15 to 20 m in 2020¹



- > Solid growth and business model with a **high market potential** based on a **favourable regulatory framework** in France

- > Significant move towards achieving the **strategic target** of 1,000 MW onshore wind capacity by 2020



- > **Portfolio diversification:**
 - > Experienced management and operational team
 - > Project pipeline and strong brand

- > Ideal platform for **synergies and development of business model**



- > **Medium term target:** One of the top five wind and solar players in France

¹May be higher depending on further full consolidation



3.8.1 Strategy: Plusnet acquisition contributes to EnBW's strategy 2025



- > **Complements NetCom's** highest-capacity fibre-optic networks in BaWü serving >40% of the state's municipalities



- > Sale of **higher value products** (higher bandwidth) to existing B2B customers

- > Plusnet will submit offers to several hundred German **municipal utilities** to plan and operate their networks



- > **Low-risk business model:** Capex mainly customer driven – no strategic network investments necessary over the next few years

- > **Large projects** with well-known large retailers in negotiation or even implementation phase



- > **Consolidating** smaller and regional DSL networks belonging to other market players



3.8.2 Strategy: Plusnet - Leading nationwide B2B telecoms operator



Key highlights

Customers

- > Well-known and loyal customer base
- > Overall ~25,000 business customers
- > No cluster risk – customer base well diversified by region, industry, size and products

Sales organisation

- > Significant experience in B2B sales with long-term employees
- > Strong direct sales channel and indirect sales network with more than **300 partners**
- > Seamless interaction between indirect and direct sales with strong products

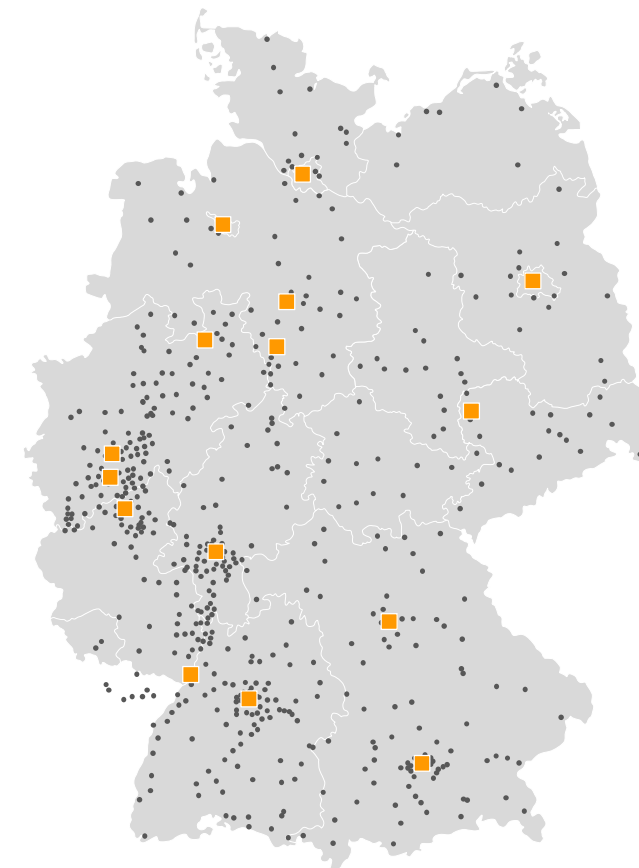
Network

- > Fully invested, state-of-the-art redundant 100 Gbit/s backbone
- > Plusnet owns and operates third largest copper-based access network with **1,445 central offices**, fully tailored to business (DSL) markets as well as the largest independent B2B WLL network in Germany with **~150 base stations** and **~1,050 customer links**

Municipal utility companies in Germany

- > Plusnet is well positioned to be the go-to provider of network services, white label and open access solutions for municipal utility companies, offering unique white label building-blocks

Central offices network



- MSC location
- CO location

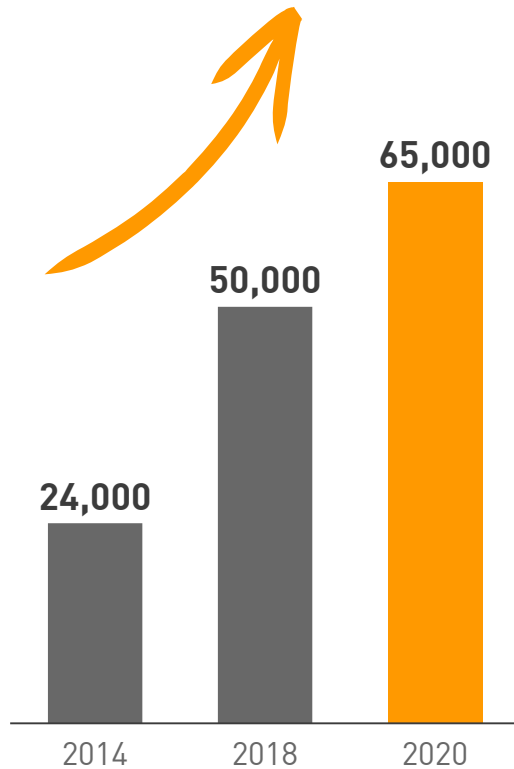
Largest CO network besides Deutsche Telekom and Vodafone



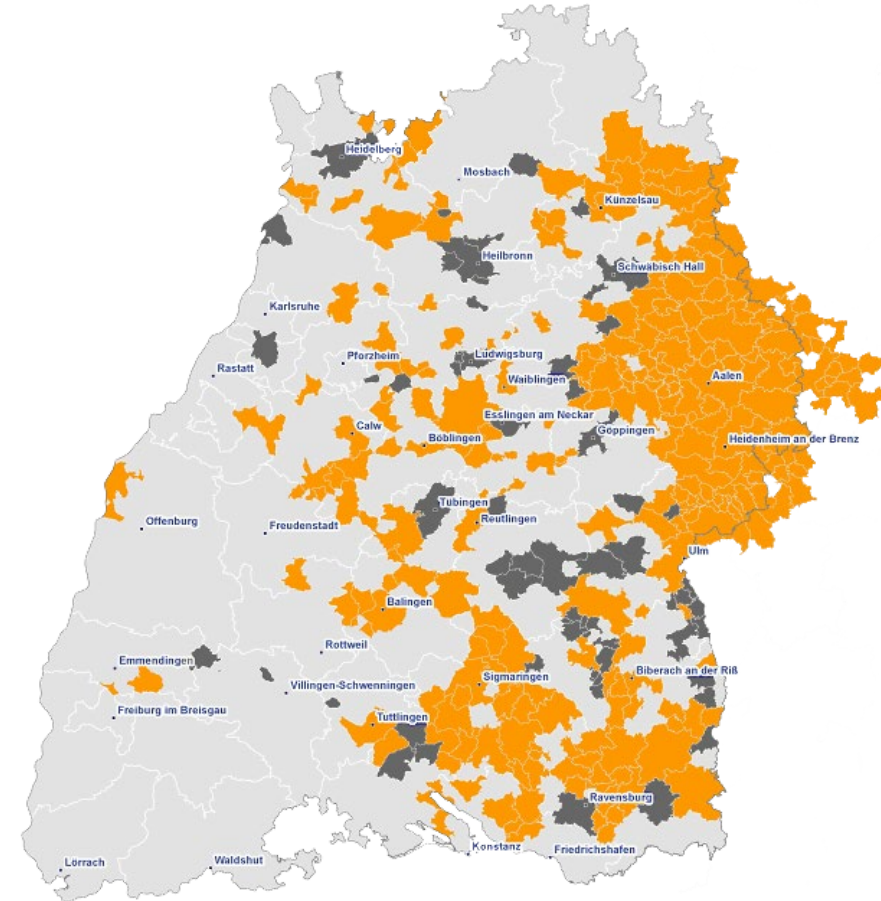
3.8.3 Strategy: Broadband at NetCom BW



Total customer growth



- > Approx. 50,000 customers, of which 6,200 commercial and industrial
- > Around 12,000 km of fibre optic cable
- > Second biggest backbone network in Baden-Württemberg
- > Serves >40% of municipalities in Baden-Württemberg
- > Integration of customer locations outside Baden-Württemberg (in cooperation with GasLINE & Plusnet)
- > 300 connected mobile phone locations in construction and expansion



■ Expansion areas
■ Existing areas

3.9 Contracting: Capability portfolio and competitors



What do we do?

EnBW among the top 5 contracting providers in Germany

Regions

- > Germany

Customers

- > Industry
- > Housing sector
- > Public sector



Product/service portfolio

- > **Main focus:** Design-build-operate-finance services for distributed energy systems under energy supply/energy performance contracting
 - Integrated single-source packages, custom tailored
 - Packages linked with additional services such as direct marketing, energy efficiency optimisation, charging infrastructure, photovoltaics/storage systems
 - Operation management and efficient system management e.g. optimisation of system operation
- > Additional services such as networks and energy efficiency

Media


- > **Heat** (hot water, steam), refrigeration, CHP power, compressed air, ventilation



Systems/technologies

- > CHP plants, boilers, refrigeration systems, gas turbines, compressed air systems, ventilation systems

Who are our competitors?

- > Highly fragmented market with >500 providers, most without primary focus in terms of customer segments and media; occasional takeovers
 - > **Five main provider groups**
 - > Contracting subsidiaries of major energy groups (e.g. E.ON Connecting Energies, MVV Energy Solutions, Enercity/Danpower)
 - > Building systems providers/facility management service providers (e.g. Techem and Engie)
 - > Municipal utilities
 - > **Energy groups' subsidiaries and independent contractors are EnBW's main competitors** (similar capability portfolio and national presence)
 - > Independent contractors (e.g. Getec)
 - > Component manufacturers (e.g. Siemens/Bosch)
- 



Business area continuously built up over 15 years, positioned as established contracting provider in Germany

3.10 Digitization within EnBW



Value chain

Impact

Low High

Relevant dimensions

Focuses

Value chain	Impact	Relevant dimensions	Focuses
CORE BUSINESS	Generation 	Products & processes	Increased availability Predictive maintenance
	Trading 		Automated trading Improved forecasting
	Grids 	Technology	Optimisation of maintenance Modern customer interaction
	Sales & Operations 		New products Digital customer experience
NEW BUSINESS	Connected home, e-mobility, Virtual Power Plant, smart cities 	People & organisation (methods)	Digital business models Interconnection of customers and systems Development of digital competencies through training / further education and new talent from external sources

- > 180+ initiatives
- > 30+ initiatives around artificial intelligence, blockchain and internet of things

- > Significant potential planned in by 2020
- > About 500 employees actively involved, with around 15 communities

3.11.1 Research and development: The research process at EnBW

Research and development builds capacity for future business opportunities.

Generated through pilot and demonstration projects

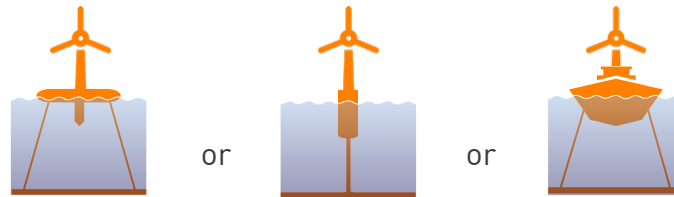
Example: Offshore wind farms for deeper sea regions



- > Wanted: how to reconstruct wind farms for floating off-shore operation in deeper sea



- > Studies and demonstration projects together with business units, customers and suppliers



- > Capacity building
- > Reliable basis for commercial offers
- > Early-stage strategic collaborations





3.11.2 Research and development: Creating know-how for new opportunities



Learning by doing:

Pilots and demonstrations with particular focus on

- > Sustainable energy provision e.g. offshore wind, green gases
- > Critical infrastructure
- > Smart city technology

The right skills for future business opportunities

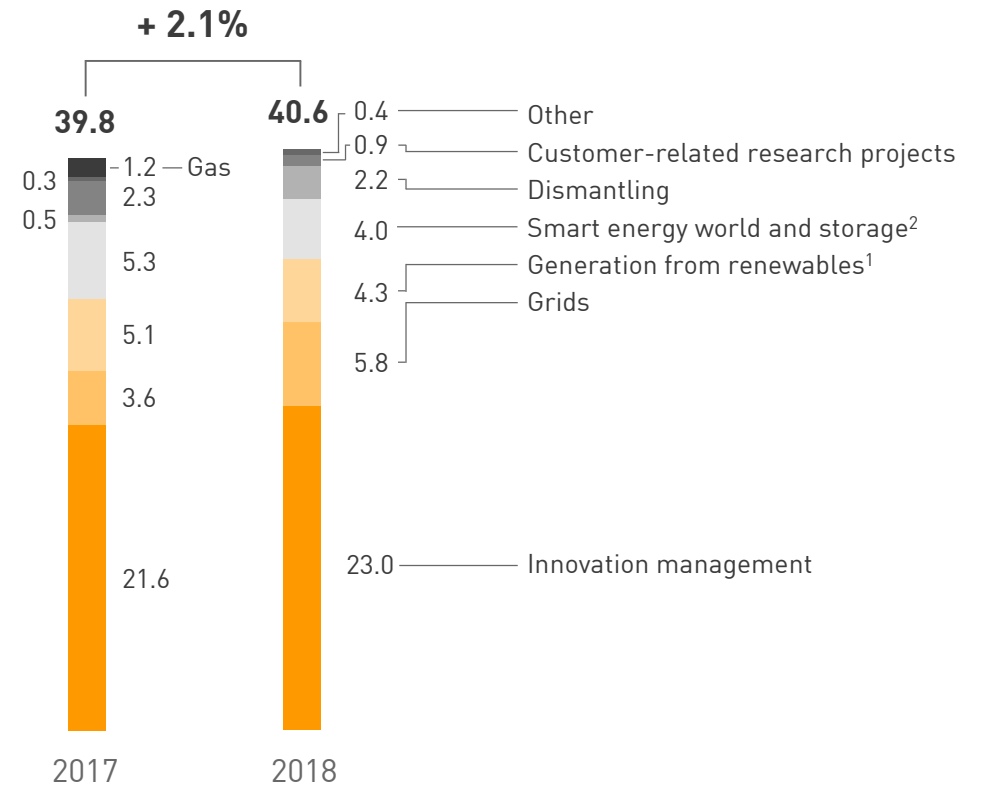
- > Emerging technologies
- > Game-changing technologies
- > New partnerships

Explore new solutions

- > New skills to succeed for the energy future
- > Win public opinion with attractive solutions
- > Exciting R&D projects to attract future employees

Expenditure on research, development and innovation

in € m



¹ Also includes green gases

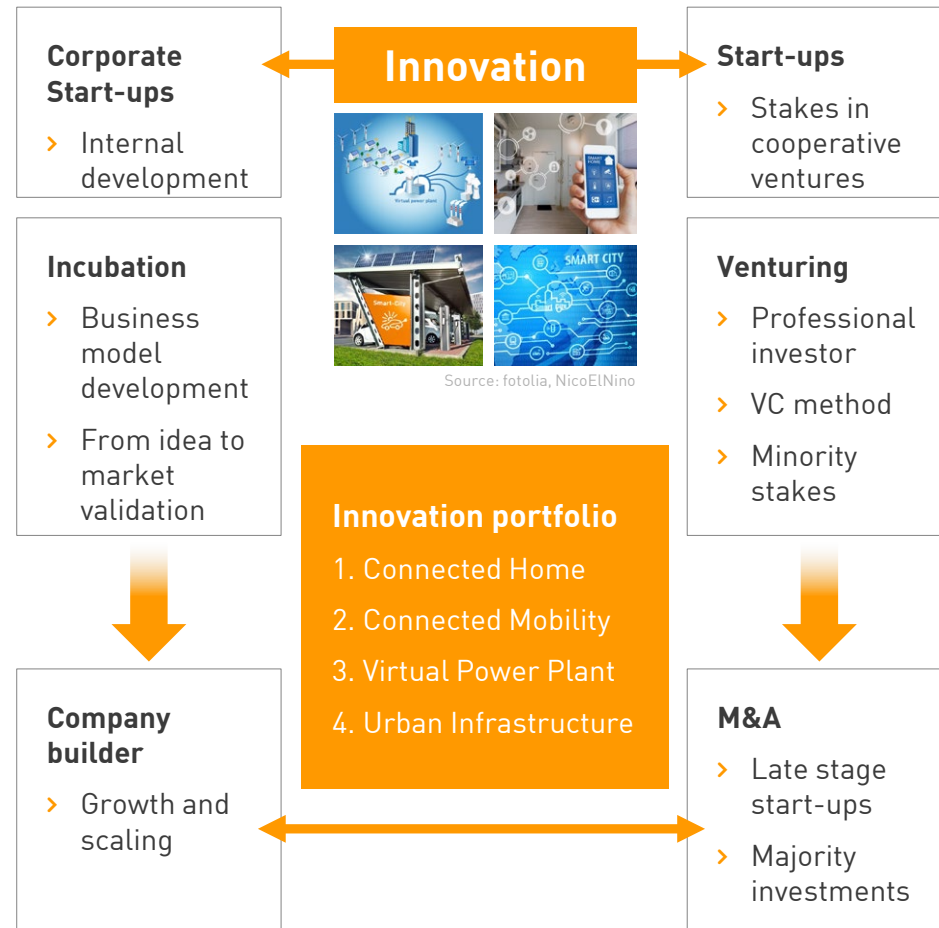
² Includes e.g. electromobility and hydrogen mobility



3.12.1 Innovation



The innovation process at EnBW



Examples of mature projects



- > WTT CampusONE provides web-based tools and learning management system (LMS) platforms for resource management and information and knowledge sharing.
- > Other products include e-learning courses, explanatory videos and compact backgrounders.
- > Spin-off in Ludwigsburg



- > SMIGHT develops solutions for charging, wifi, environmental sensors, security and transport that can be integrated into existing or new urban infrastructures.
- > Corresponding product portfolio under development in the areas of technology, services and data management.
- > Internal micro business unit in Karlsruhe

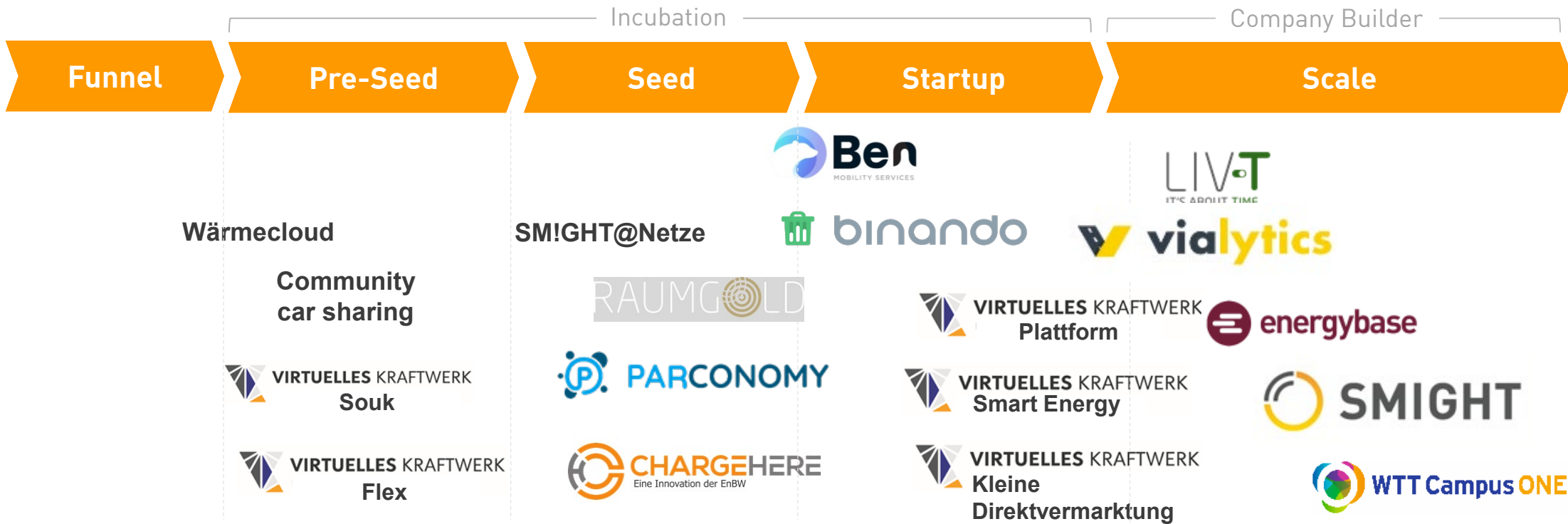


- > LIV-T incubates, scales and operates top-tier Internet of Things (IoT) use cases as a white label enterprise solution. Customer-centric, rapid and efficient development using lean startup methodology.
- > Generates revenue from hardware sales and operation of use cases via licence agreement with white label customers (software and services).
- > Joint venture in Munich



- > Virtuelles Kraftwerk (Virtual Power Plant) is a digital platform that connects independent energy producers and energy consumers with markets and each other.
- > Related business activities focus on direct marketing, flexibility management and dynamic tariffs.
- > Company builder in Stuttgart

3.12.2 Innovation management launches and develops start-up projects through incubation and scaling



- > 33 projects since launch (16 September 2014)
- > 10 projects stopped
- > 6 projects adopted
- > 17 projects active

Teams adopted by Group:

Spin-offs & micro business units (MBUs):



3.12.3 Innovation: Venture capital investment in innovative start-ups



EnBW New Ventures follows an active portfolio approach









- > Evergreen VC investor with total investment amount of €100 m
- > Direct minority stakes, investment in entrepreneurial founder teams
- > Open for syndication in a traditional VC approach



EnBW New Ventures is the open innovation connection between startups and EnBW Group

- > Win-win for both sides, with EnBW New Ventures operating as professional VC investor
- > Start-ups gain access to EnBW's energy market expertise, customers and suppliers of EnBW
- > EnBW benefits from fast innovation cycles and growth options
- > Cooperative approach to foster business with products and services based on innovative business models

Current portfolio

-  > Global cloud communications platform – enabling end-to-end customer journeys through focus on no-code integration & automation
-  > Smart parking solutions with overhead sensors – real-time parking data for parking operators and guidance systems
-  > Photovoltaics leasing provider – generate and use your own solar power on your rooftop without upfront investment
-  > Cloud hosting provider – innovative infrastructure-as-a-service & platform-as-a-service solutions
-  > Peer-to-peer energy trading utility-in-a-box – software for the decentralised and digitalised energy world
-  > Data centre resource analysis and virtualisation – software for a transparent view on complex IT infrastructure
-  > High-temperature superconductors – innovation and high-tech with unique manufacturing approach and high power density
-  > Artificial intelligence for better roads – AI solution to help municipalities plan and monitor their road maintenance

3.13.1 Corporate Sustainability: Integral part of the strategy

Strategy 2025



■ Our understanding of sustainability

- Creation of economic as well as ecological and social added value for our customers, shareholders, employees, partners and society as a whole – today and in the future.
- “We associate sustainable management with the claim to conduct all our business activities responsibly.”

■ Sustainability is integrated in

- Corporate strategy
- Non-financial top KPI’s and targets
- Stakeholder management
- Risk and opportunities
- Annual Reporting

3.13.2 Corporate Sustainability: Transparent presentation of value creation for EnBW and its stakeholders



EnBW Group value added¹

in € m

Value creation

Cash-relevant business performance



¹ We define value added as EnBW's cash-relevant business performance in the past financial year minus cash-relevant expenses.



3.13.3 Corporate Sustainability: EnBW Sustainable Finance Activities



EnBW memberships

- > **Technical Expert Group on Sustainable Finance (TEG)**, which supports the European Commission in the development of a legal framework for sustainable financing opportunities
- > **Task Force on Climate-related Financial Disclosures (TCFD)** for the development of climate-related risk reporting
- > **Sustainable Finance Committee** advises the German Federal Government on elaboration and implementation of its sustainable finance strategy



Green financing @ EnBW

- > **Two green hybrid bonds in July 2019:**
 - Total issue size € 1 billion
 - €500 m: 60.25-year term to maturity
 - €500 m: 60-year term to maturity
 - First German green hybrid bond issuer
- > **First green bond in October 2018:**
 - Issue size € 500 million
 - 15-year term to maturity



3.13.4 Corporate Sustainability: Ratings



ISS ESG



> Prime Status

Sustainalytics



> Outperformer

CDP



> Leadership

3.13.5 Corporate Sustainability: Economic, environmental and social performance



Dimensions and activities



Economic

- > Green bond with issue size of €500 m (2018)
- > Two green hybrid bonds with total issue size of €1 bn (2019)
- > Digitization of customer processes with EnPower
- > Investment by retail investors in EnBW wind farms



Environmental

- > Expansion of generation from renewable energies: offshore and onshore wind and photovoltaics
- > Progress in transmission grid (ULTRANET and SuedLink HVDC) projects by TransnetBW
- > “Impulse für die Vielfalt” (“Stimulus for Diversity”) funding programme for the protection of amphibian and reptile species



Social

- > Projects and campaigns on occupational safety and health for employees
- > Municipal Emergency and Crisis Management for Crisis Prevention concept to support local authorities
- > Development of new safety services and products for local authorities and companies



3.13.6 Corporate Sustainability: EnBW as a frontrunner in ESG Reporting – selected examples



Integrated Reporting



- > In the Integrated Annual Report, EnBW takes ecological and social aspects of the company’s activities into account as well as economic aspects
- > EnBW publishes the Integrated Annual Report based on the recommendations of the International Integrated Reporting Council (IIRC)

Green Bond Impact Reporting



- The Impact Report on EnBW’s Green Bonds supplements the Integrated Annual Report:
- > Further information about how the funds are allocated
 - > Added value from our projects in terms of benefit for the climate

GRI Sustainability Reporting



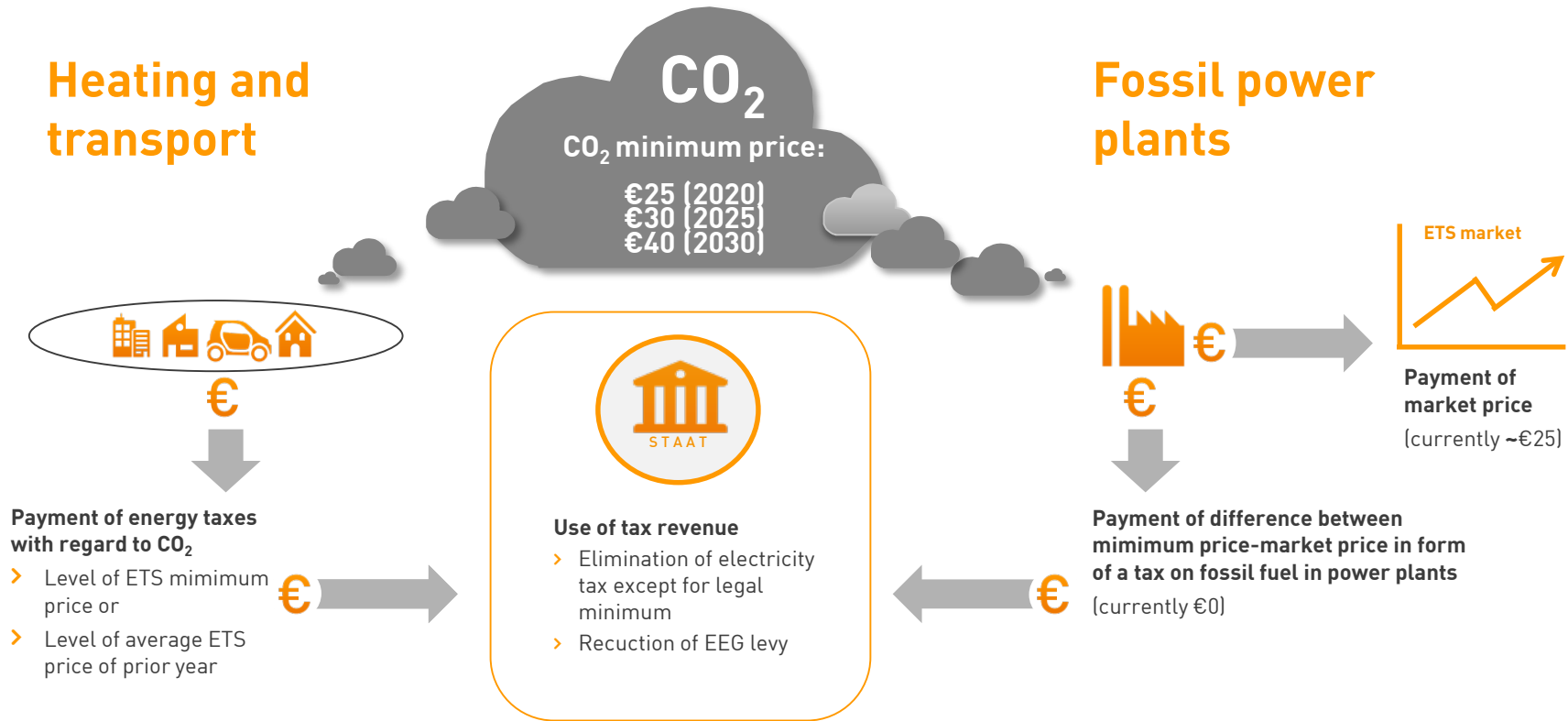
- > Annual Sustainability reporting is based on the GRI Standards, including the Electric Utilities Sector Supplement
- > EnBW selects the Core option, which includes essential elements for stakeholders
- > The sustainability reporting also meets the requirements of the progress report for the UN Global Compact



3.14.1 Decarbonisation: EnBW supports a minimum CO₂ price in the Emissions Trading System and its implementation in the sectors heating and transport



EnBW's position on cross-sector CO₂ pricing





3.14.2 Decarbonisation: Business activities fully geared to attainment of climate targets

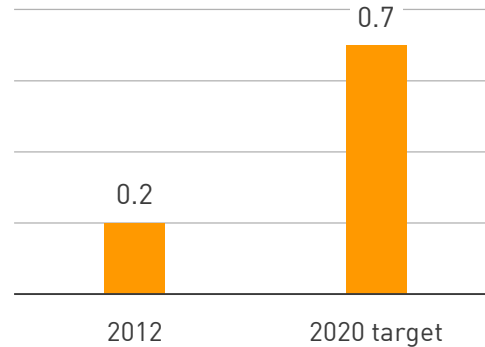


Why is EnBW committed to climate action?

- > Low-carbon business areas are key growth markets in the energy sector
- > EnBW's strategic goals can be attained with low-carbon activities
- > EnBW delivers on its social responsibility for climate action/sustainability

EnBW renewables growth¹

Adjusted EBITDA in € bn



- > Onshore wind growth to 1,000 MW by 2020/2,000 MW by 2025
- > Offshore wind growth to ≥ 1,500 MW by 2025
- > Renewables growth in Turkey to 1,000-1,500 MW by 2025
- > Selective internationalisation of business by 2025

35.5%

of household electricity consumption in Baden-Württemberg can theoretically be served by EnBW's renewable energy activities



By means of its energy efficiency networks for industrial customers alone, EnBW has delivered annual energy savings equivalent to

~35,000 households (300 GWh/p.a.)

¹ Run-of-river power plants, pumped storage power plants with natural inflow, wind power, photovoltaic and other

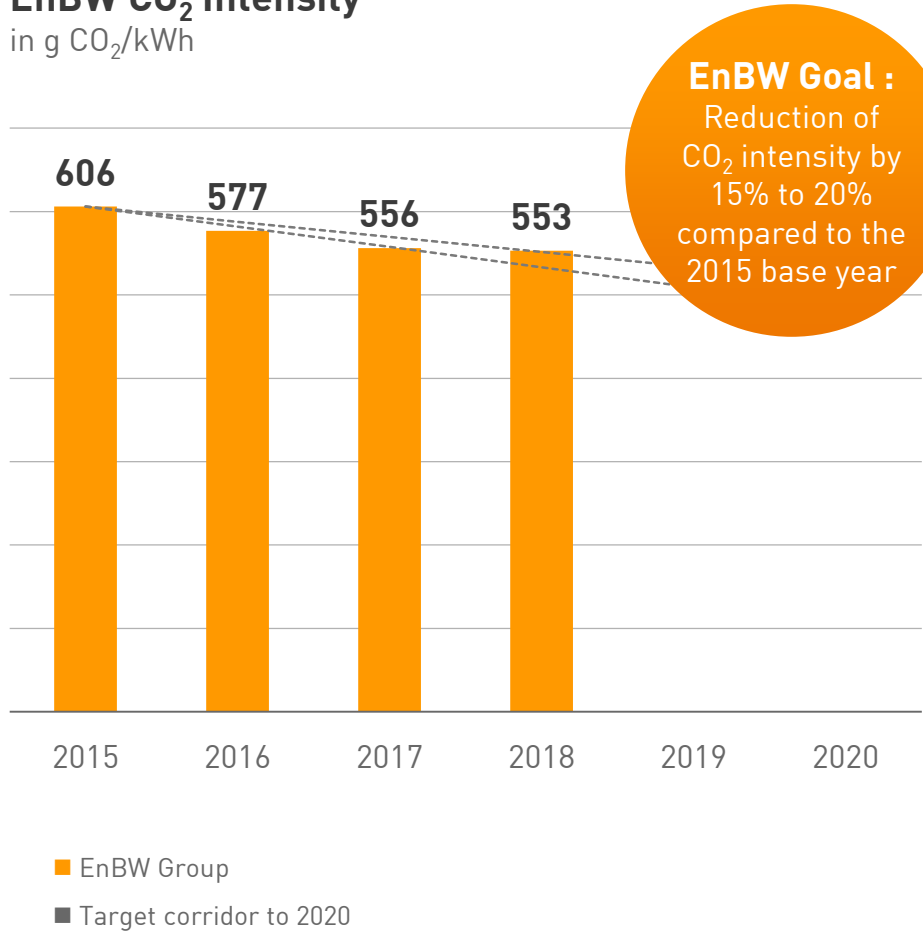


3.14.3 Decarbonisation / Climate protection: CO₂ Intensity key performance indicator



EnBW CO₂ Intensity

in g CO₂/kWh



- > EnBW already clearly committed itself to the “Energiewende” in 2013 with its 2020 strategy. The central focus here in the medium and long-term is low-CO₂ or zero emission electricity generation.
- > The CO₂ intensity of EnBW’s own electricity generation 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 decrease was due to higher generation from renewable sources and the simultaneously almost constant level of electricity generation from fossil fuels in comparison to 2017.
- > In 2019, we expect an increase in own electricity generation from renewable energy sources due to the further expansion of renewable energies. Important factors for uncertainty in the 2019 forecast include the volatility of wind and water supplies.
- > We anticipate a positive trend overall and expect a reduction in CO₂ intensity of between -10% and 0% in 2019 in comparison to the 2018 reporting year.

3.15.1 Corporate Governance: Responsible and transparent management



EnBW corporate culture

> Board of Management



Dr. Frank Mastiaux,
Chief Executive Officer

Colette Rückert-Hennen
Chief Personnel Officer

Thomas Kusterer
Chief Financial Officer

Dr. Hans-Josef Zimmer
Chief Technology Officer

- > Responsible Group management
- > Represents the company legally

> Supervisory Board



Lutz Feldmann
Chairman of the Supervisory Board

- > **20 members:** 10 shareholder representatives, 10 employees representatives, thereof 3 union representatives
- > Appoints members of Board of Management and defines their remuneration
- > Supervises the Board of Management
- > Advises them on management of the company

Transparent & responsible

Strengthen trust and confidence in

- > **Customers**
- > **Capital providers**
- > **Employees**
- > **Public**

Long-term success

3.15.2 Corporate Governance: German Corporate Governance Code



German Corporate Governance Code

- > EnBW is in compliance with the recommendations of the German Corporate Governance Code, as amended on 7 February 2017:
https://www.enbw.com/enbw_com/investoren/investors_docs/corporate_governance_1/german-corporate-governance-code-of-7-february-2017.pdf
- > The recent Declaration of Compliance pursuant to section 161 German Stock Corporations Act (AktG), dated 5 December 2018, and the declarations from previous years are published at
https://www.enbw.com/enbw_com/bericht/bericht_2018/downloads/enbw-declaration-of-corporate-management-2018.pdf



Further information

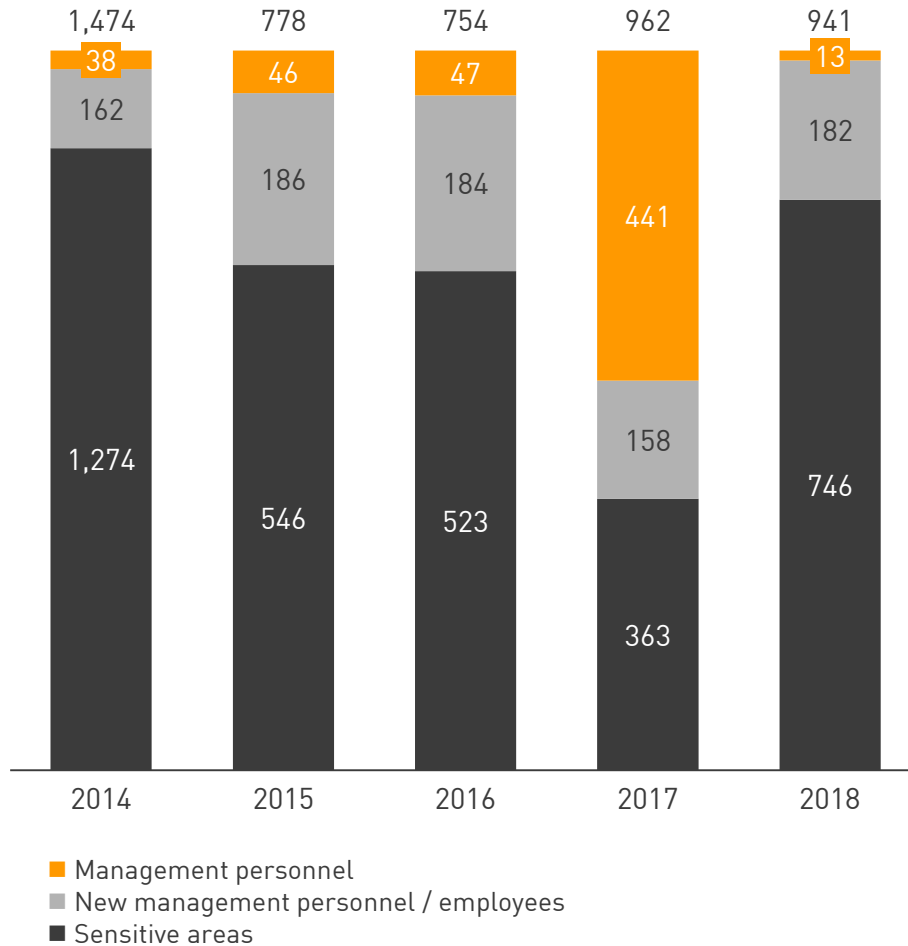
- > **Board of Management:**
<https://www.enbw.com/company/the-group/about-us/executive-board/index.html>
- > **Supervisory Board:**
https://www.enbw.com/company/the-group/about-us/supervisory-board/index_en.html
- > **German Corporate Governance Code:**
<https://www.enbw.com/company/investors/corporate-governance/german-corporate-governance-code/>
- > **Articles of Association (Dated 20 March 2018):**
<https://www.enbw.com/company/investors/corporate-governance/articles-of-association/>
- > **EnBW Annual General Meeting:**
<https://www.enbw.com/company/investors/events/annual-general-meeting/>



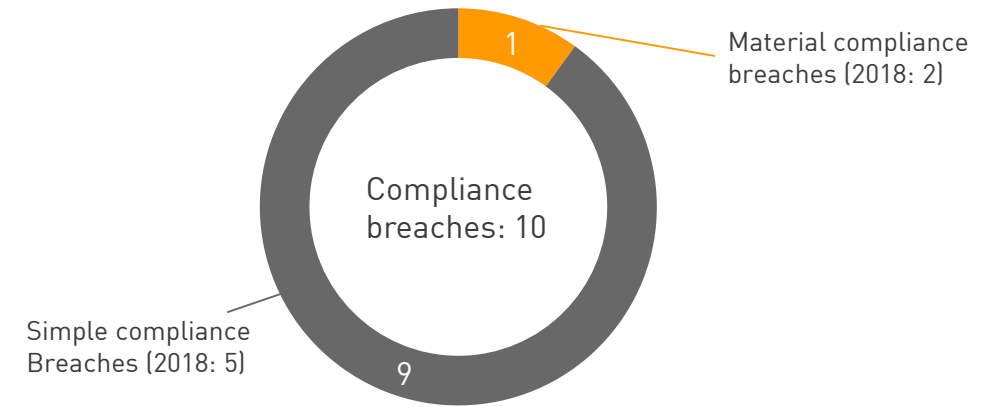
3.15.3 Corporate Governance: Compliance



Number of participants in compliance training events¹



Number of compliance breaches¹



¹ At EnBW AG and directly controlled companies with employees

The Compliance Management System:

- > serves to minimise risks and avoid liability issues and a loss of reputation
- > focuses on company and sector-specific risks and priorities
- > encompasses all controlled companies with employees in the EnBW Group
- > various tools are used e.g. training/workshops, Code of Conduct, Annual Compliance Risk Assessment and Ombudsman

3.15.4 Corporate Governance: Data Protection Philosophy



Data Protection Model

> The importance of protecting customers' and employees' personal data has been self-evident to EnBW for many decades.

> Data protection is also key to maintaining the trust and confidence that customers place in us every day. New business models (digital/smart solutions) build on that trust.

> The entry into force of the General Data Protection Regulation (GDPR) raised the importance of data protection issues to a new level. Our aim at EnBW is full compliance in data protection at all times:



“Trust keeper” of the data which is owned by the subject.

Data protection at EnBW¹

> Central organisation of data protection at the EnBW Group

- > 1 Head of Compliance and data protection
- > 2 Data protection officers²
- > 2 Data protection & compliance employees
- > 1 Business Partner digitization and data protection
- > 14 Local Data Protection Managers³



¹ As of 1 April 2019

² Data Protection Officer under Article 37-39 of the GDPR,

³ Managers in the following business areas: 1 Human Resources, 1 IT, 1 Trading, 1 Generation, 1 Nuclear, 2 Operation & Sales, 1 Grids, 6 Other Businesses

3.15.5 Corporate Governance: Data protection in the value chain



There are processes involving data protection in all parts of the value chain

This has so far involved:

- > Second wave in restructuring and assessing some **400 processing operations** to increasing transparency and accountability
- > Starting **onsite audits** at main **suppliers with direct access to customers data.**
- > Revision of **all processing operations** in **customer service** to incorporate the enhanced **rights of data subjects**
- > Ongoing **training** of **employees** to consider the new legal framework
- > Implementing a multimedia training course specifically for business developers and process designers facing GDPR requirements.
- > Advancement of the Data Protection Management System (DPMS) based on the IDW AsS 980 standard.

Data protection compliance cycle





Agenda 4 – Business Segments

1. EnBW at a glance..... page 3 >>
 - > Key financials
 - > Key non-financials
2. Environment..... page 6 >>
 - > Political environment
 - > Regulatory environment
 - > Markets
3. Strategy page 34 >>
 - > EnBW 2020 Strategy
 - > EnBW 2025 Strategy
 - > Further strategic aspects:
Broadband, Contracting, Digitization, Research and Development,
Innovation, Corporate Sustainability,
Decarbonisation, Corporate Governance,
Compliance, Data Protection
- 4. Business Segments page 66 >>**
 - > Sales
 - > Grids
 - > Renewable Energies
 - > Generation and Trading
5. EnBW's Main Shareholdings.....page 111 >>
 - > Energiedienst Holding AG
 - > Pražská energetika, a. s.
 - > Stadtwerke Düsseldorf Group
 - > VNG AG
 - > Borusan EnBW Enerji yatırımları ve Üretim A.S
6. Key Financials and Non-financials..... page 130 >>
 - > Five-year summary
 - > Fiscal year 2018
 - > Half year 2019
 - > Finance strategic and other goal dimensions
7. Capital Marketspage 143 >>
 - > Financial Asset Management
 - > Bonds
 - > Maturity profile
 - > Credit Ratings
 - > Shareholder structure
 - > Share
 - > Key financial indicators
8. Service page 155 >>
 - > Financial calendar
 - > Contact details
 - > Important links



4.1 Segment overview



Sales

- > **Adjusted EBITDA 2018:** €270.6 m
- > **Employees:** 3,657
- > **Investments 2018:** €132.4 m

- > **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



Grids

- > **Adjusted EBITDA 2018:** €1,176.9 m
- > **Employees:** 8,920
- > **Investments 2018:** €967.4 m

- > **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



Renewable Energies

- > **Adjusted EBITDA 2018:** €297.7 m
- > **Employees:** 1,144
- > **Investments 2018:** €476.0 m

- > **Tasks:** Project development and management; construction and operation of renewable energy power plants



Generation and Trading

- > **Adjusted EBITDA 2018:** €428.6 m
- > **Employees:** 5,419
- > **Investments 2018:** €166.5 m

- > **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

HVDC: high-voltage direct current transmission technology

4.2 Selected EnBW companies



- **EnBW Energie Baden-Württemberg AG**
 - Karlsruhe
- **EnBW Ostwürttemberg DonauRies AG**
 - Ellwangen
- **Erdgas Südwest GmbH**
 - Karlsruhe
- **Gasversorgung Süddeutschland GmbH**
 - Stuttgart
- **NaturEnergie+ Deutschland AG**
 - Mühlacker
- **Netze BW GmbH**
 - Stuttgart
- **Sales & Solutions GmbH**
 - Stuttgart
- **terranets bw GmbH**
 - Stuttgart
- **TransnetBW GmbH**
 - Stuttgart
- **ZEAG Energie AG**
 - Heilbronn
- **Energiedienst Holding AG**
 - Laufenburg



- **EnBW Sverige AB**
 - Falkenberg
 - **Connected Wind Services A / S**
 - Balle
 - **ONTRAS Gastransport GmbH**
 - Leipzig
 - **Stadtwerke Düsseldorf Group**
 - Düsseldorf
 - **VNG AG**
 - Leipzig
 - **Yello Strom GmbH**
 - Cologne
 - **Pražská energetika a.s.¹**
 - Prague
 - **Borusan EnBW Enerji yatırımları ve Üretim A.S.²**
 - Istanbul
- BORUSAN**

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 as of 31.12.2018 is published at www.enbw.com/report2018-downloads.

Further information: www.enbw.com/shareholdings.

4.3 Sales: Multi-brand approach (1/2)



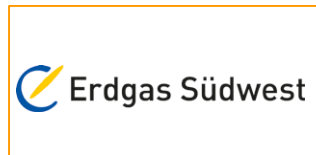
> EnBW as premium energy brand with focus on the Baden-Württemberg mass market and public authorities. Throughout Germany for energy solutions such as e-mobility and contracting. EnBW offers the full range of decentralised solutions for the German Energiewende.



> Yello is EnBW's single brand for the German national mass market, providing a viable alternative for every customer.



> Natur Energie Plus is the national brand for environmentally aware households.



> Erdgas Südwest is an energy service provider for residential customers, business customers and municipalities operating throughout Baden-Württemberg.



> As a regional provider, EnBW ODR combines electricity, gas, water/wastewater, energy-related services and telecommunications (in cooperation with NetCom BW) within the Ostwürttemberg, Hohenlohe and Donau-Ries region.



> goldgas GmbH is one of the leading energy suppliers in Germany. The company from Eschborn supplies gas and electricity to private households, commercial customers, housing organisations, major industrial customers and resellers. In 2008, goldgas was the first independent gas supplier in Germany. In 2012, the company added electric power and eco-power to its portfolio.

4.3 Sales: Multi-brand approach (2/2)



> GasVersorgung Süddeutschland – partner to municipal utilities, regional energy suppliers and industry in Germany and beyond. In addition to gas and electricity, GVS provides a broad spectrum of energy-related services. Focuses include online business via platform E-Point.



> NaturEnergie is Energiedienst’s main brand and one of Germany’s first green energy brands. It is regional, green and 100% hydropower.



> PRE as premium energy brand with focus on Prague mass market for electricity and energy solutions.



> Stadtwerke Düsseldorf is a multipurpose supply and disposal company with business activities in the areas of energy, water, contracting and waste management.



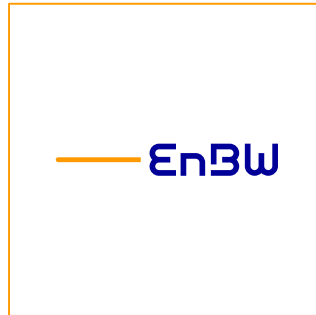
> VNG is the corporate brand of the VNG Group and stands for a strong group of more than 20 independent companies with more than 1,100 employees and 60 years of expertise in the energy market. VNG has a broad, future-oriented portfolio of products and services in gas and infrastructure.



> ZEAG Energie AG is a regional energy supplier of electricity, gas, heat and energy services.



4.4 Sales: Market feedback – Brand awareness



- > Full-line service provider delivering quality and inventiveness made in Baden-Württemberg: electricity, gas, water, energy/environmental services, district/local heating and connected energy solutions (e.g. e-mobility and decentralised energy generation)
- > Fair prices, excellent service and customer participation
- > Selected special products with added value
- > Retail/business/industrial customers and municipalities/municipal utilities

95%
Baden-Württemberg
Q1/2019



- > Retail customers in Germany
- > Attractive pricing
- > Focus on online sales and service
- > Electricity and gas for standard service
- > Innovative product bundles
- > Selected special products only in cooperation

85%
National
Q1/2019



- > Nationwide sustainability brand
- > Ecological products
- > Focus on people
- > Enhanced brand awareness in planning

6%
National
Q1/2019



4.5 Sales: Electricity and gas sales



EnBW Group: Electricity and gas sales

in bn kWh

	2018	2017	Variance in %
Electricity sales	136.8	122.0	12.1
Retail and commercial customers (B2C)	14.9	15.0	-0.7
Business and industrial customers (B2B)	21.9	23.7	-7.6
Trade	100.0	83.3	20.0

	2018	2017	Variance in %
Gas sales	328.3	250.1	31.3
Retail and commercial customers (B2C)	17.1	14.4	18.8
Business and industrial customers (B2B)	144.5	93.7	54.2
Trade	166.7	142.0	17.4



4.6.1 E-mobility: Key facts



Key facts

- > Fast-charging locations today **more than 230**
- > Goal till the end of 2020: DC fast charging locations **1,000**

EnBW mobility+ app

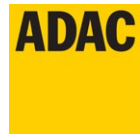
- > App downloads **>250,000**
- > Active users **14,503**

Our range of services



- Consulting and Sales > Location Analysis > Planning, Project Planning, Civil Engineering > Access and Billing > Operation and Service

Our partners and references

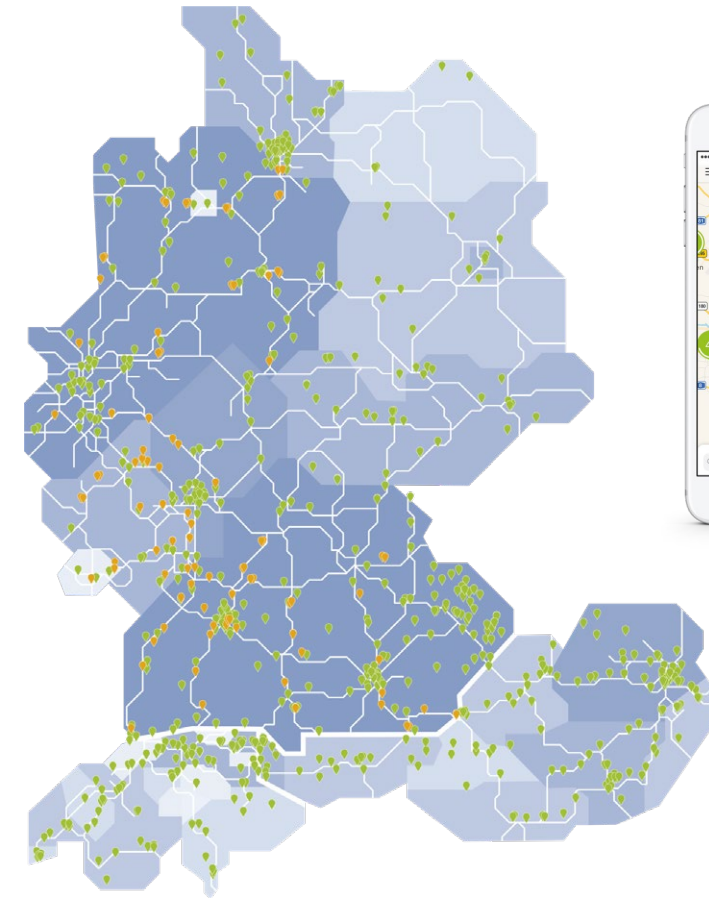




4.6.2 E-mobility: What we do



- › EnBW is one of the **largest operators of fast charging stations** in Germany, together with Allego and Innogy.
- › EnBW offers the **largest network coverage** in DACH
- › Access to over **30,000 charging points in DACH** with the same price through our transparent tariff
- › The **award-winning EnBW mobility+ app** is Germany's most popular e-mobility app with over **250,000 downloads**



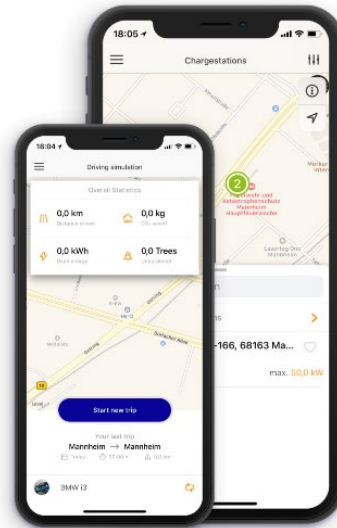
4.6.3 E-mobility: EnBW mobility+ app



EnBW mobility+ App

Current features:

- > **Charging station finder**
Access to over 30,000 charge points
- > **Control of charging process**
Start, monitoring, tracing
- > **Payment**
Selection of multiple rates
- > **Driving simulation**
Over 4,000,000 km simulated
- > **Data analysis**
Cost, charge power, drive time, ...



Upcoming releases

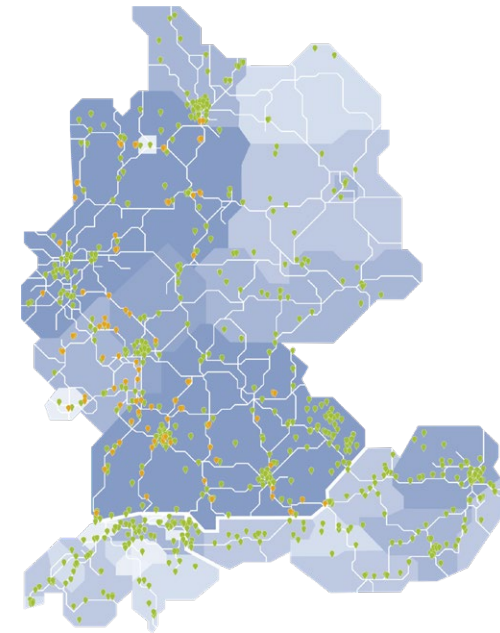
- > Fleet management function (B2B)
- > Further sectors

DACH: German-speaking region (Germany, Austria and Switzerland)

¹ AC charging locations of EnBW and other providers

DACH roaming grid

- > **Fast charge locations (DC)**
 - 📍 EnBW owned locations
 - 📍 Other providers' locations
- > **Charge locations (AC)¹**
 - Low density
 - High density (> 400 locations)



Additional digital services

- > **Smart couponing system**
Vouchers to charge for free at a specific purchase amount
- > **Proximity marketing**
Deployment of mobile content and mobile advertising
- > Partner locations along route shown in EnBW mobility+



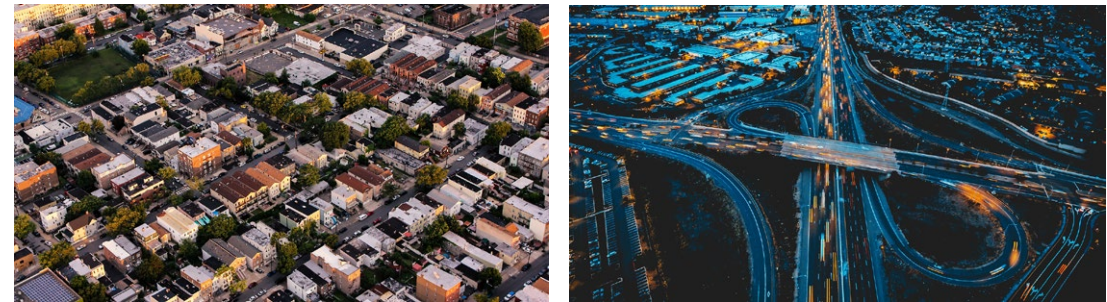


4.6.4 E-mobility: Examples of different charge needs (AC vs. DC)

Private charging (AC)



Public charging (DC)



Live & Charge

- > Examples: over night at home, hospitality industry, hotel
- > Technology: AC 3–11 kW (wallbox)

plug	battery	park time	usage
Type 2 / Schuko	0-100%	10-12 h	10-12 h daily

Work & Charge

- > Examples: car pool, employees, guests, electric commercial vehicles
- > Technology: AC 3–22 kW (wallbox)

plug	battery	park time	usage
Type 2	20-100%	8-10 h	8-10 h daily

Shop & Charge

- > Examples: supermarkets, fast food chains
- > Technology: DC up to 50 kW

plug	battery	park time	usage
CCS	20-80%	0-2 h	1-3 h weekly

Charge = Refuel

- > Examples: Charge during travel, at service areas, urban charge points, e-taxis
- > Technology: DC 150–350 kW

plug	battery	park time	usage
CCS	almost empty	8-10 min	1-5 h yearly

4.6.5 E-mobility: NETZlabor ("Grid Lab") Avenue



5 x VW e-Golf 2 x BMW i3 3 x Renault Zoe 1 x Tesla Model S 75D

- > Residential area with private homes in Ostfildern, Stuttgart metropolitan region
- > Ten test customers (families, couples, pensioners)
- > 11 electric vehicles, 10 wall boxes, 1 power circuit

What we are doing:

- > Monitoring and analysing grid status
- > Testing storage systems in customers' homes and in the grid
- > Testing smart charge management
- > Studying customer behaviour and acceptance



> Customers' range concerns dispelled. Far fewer charges per week than in the beginning.



> Grid load smaller than expected – due to customers' differing charging patterns and no more than 50% charging at any one time.



> Large potential for smart charge management and battery storage. Customers have up to three times as much time to charge as they need.



4.6.6 E-mobility: Outlook 2019/2020: “NETZlabor” grid labs add experience in real conditions



E-mobility Carré grid lab – apartment block



Focus: Solutions for convenient grid connection in apartment blocks

- > **Grid:** Urban grid area
- > **Where:** Existing apartment block with underground parking, 30-40 chargers and electric cars, private owners’ association or housing association
- > **What:** Convenient grid connection, scalable smart charging infrastructure, grid monitoring, charge management, home storage, customer feedback
- > **Who:** Researchers, local authority, test customers



E-mobility Avenue in rural community



Focus: Solution for voltage disturbances caused by electric vehicles in rural area

- > **Grid:** Rural grid area
- > **Where:** Long power circuit, households/farm, five chargers and electric vehicles
- > **What:** Charging infrastructure, smart charge management, grid monitoring, central battery storage, in-line power regulator
- > **Who:** Researchers, local authority, test customers



E-mobility-ready new housing development



Focus: First e-mobility-ready new housing development

- > **Grid:** Suburban grid area
- > **Where:** New terraced housing development
- > **What:** Implementation of planning assumptions, higher capacity per household, installation of empty cable ducts, space reserved for additional substation. Grid monitoring for the timely identification of e-mobility ramp-up. Support in construction planning (three-phase current in garages, cable ducts, etc.).
- > **Who:** Local authority



4.7.1 Local authorities and municipal utilities: Activity areas



Shaping and managing great places to live and do business

> With the necessary big picture view across all areas (communication, energy, mobility, the economy and public life) and a clear understanding of the related current and future challenges for municipal authorities, we advise and support municipalities in Baden-Württemberg and beyond with our products and services. Our priority is to deliver a custom-tailored, future-ready integrated solution for each municipal customer.



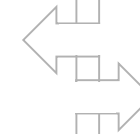
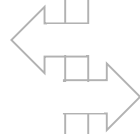
Needs-driven alliances with municipal utilities across Baden-Württemberg

> Joint entities benefit from EnBW's longstanding experience and proven full range of services for almost every business process. We have a broad capability portfolio, ranging from technical network operation to IT solutions and from billing to smart energy solutions.



Efficiently operating and managing municipal infrastructure

> With over 700 electricity and gas concessions in Baden-Württemberg and the operation of additional infrastructure such as water and broadband networks, longstanding experience and a proven team with local ties throughout the region, EnBW is a highly effective partner to municipalities in Baden-Württemberg.



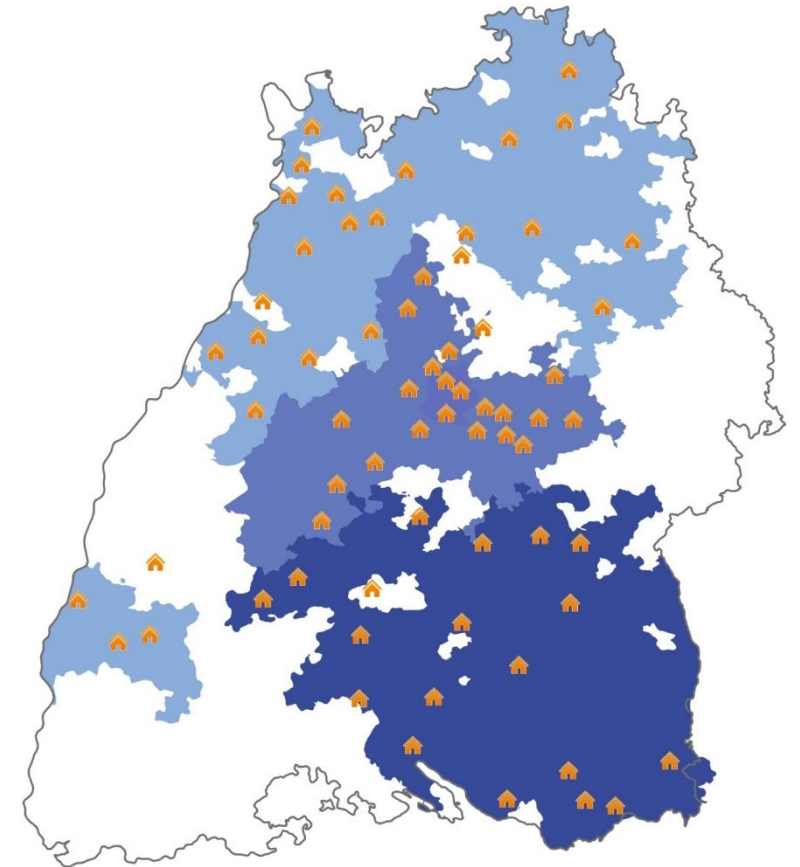


4.7.2 Local authorities and municipal utilities: Municipal alliances in Baden Württemberg



Municipal infrastructure: efficient and reliable

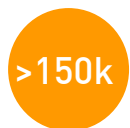
- > Netze BW GmbH, a wholly-owned subsidiary of EnBW and the biggest electricity, gas and water network group in Baden-Württemberg, delivers secure, reliable, efficient and cost-effective utility supply and customer-friendly network service.
- > We hold over 550 electricity and over 100 gas concessions. Furthermore, we also take care of approximately 115 joint entities.
- > Electricity and gas concessions are our main focus, but we are also strong in water supply and broadband infrastructure rollout – the latter with very ambitious growth targets.
- > With research activities, state-of-the-art technology and our highly dedicated workforce, we make a major contribution in terms of security of supply and future-ready energy infrastructure, especially in rural regions.



Electricity and gas concessions in Baden-Württemberg (Netze BW)



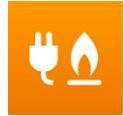
Electricity customers



Gas house connections

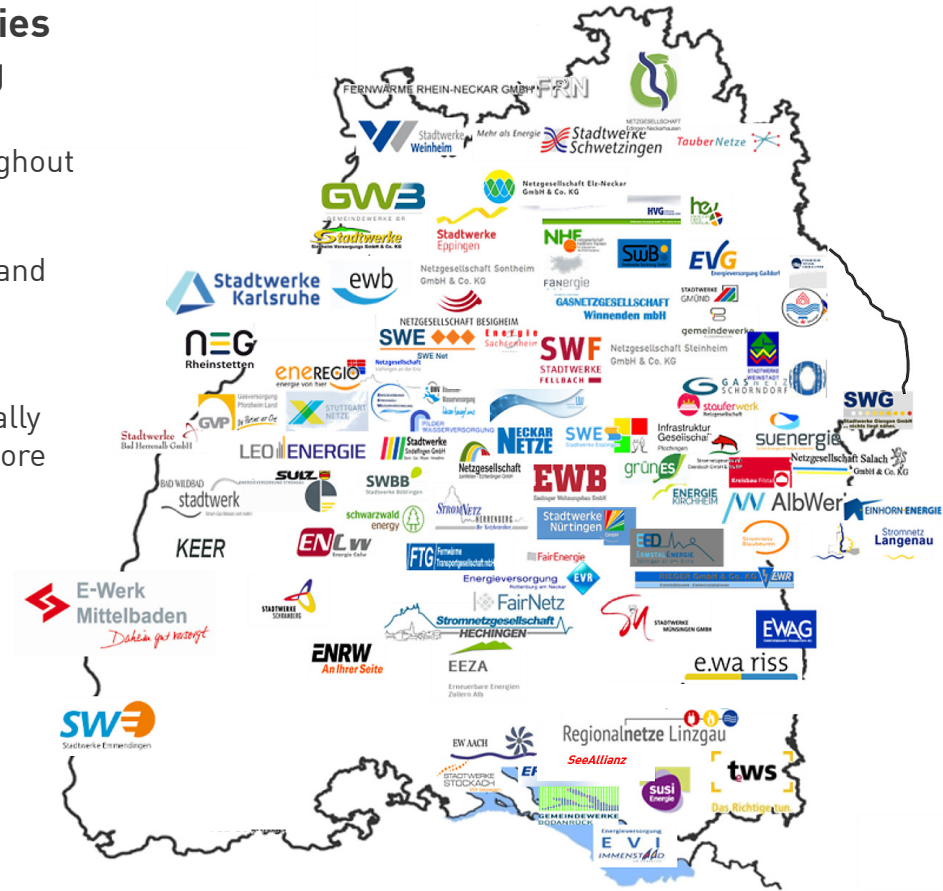
- Netze BW locations
- Grid area North
- Grid area Centre
- Grid area South

4.7.3 Local authorities and municipal utilities: Investment portfolio



In numerous joint entities with municipal authorities and utilities we are a driving force in alliances across Baden-Württemberg

- > As a minority shareholder in over 100 joint entities, EnBW has deep regional ties throughout Baden-Württemberg.
- > Business development in these utilities is shaped by the complementary perspectives and capabilities of their owners (municipal authorities and EnBW).
- > With both established capabilities (such as network and operating services) and new business areas (such as broadband and electric mobility), EnBW contributes substantially to the business development and ensuring the long-term viability of utilities and therefore of the entire region.



EnBW investment portfolio in Baden-Württemberg

20% Market share (electricity/gas, by volume) in Baden-Württemberg

€3 bn revenue

4.8.1 Grids: Electricity and gas grids constitute EnBW's core business



EnBW grid regions



EnBW has a thorough grasp of the grid business

- > EnBW and its predecessor companies have been in the grid business for more than 100 years
- > Security of supply is our highest priority – which is why we employ modern and tested technologies and maintain an extensive network of service centres
- > Efficiency benchmark from most recent regulatory period certifies generally best results for EnBW grids
- > High regulatory competence/market competence

Grid business has stabilising effect on portfolio

- > Electricity and gas grids are subject to regulation
- > Stabilising risk/return mix with stable cash flows

Excluding shareholdings in Energiedienst Holding AG, Erdgas Südwest GmbH, EnBW Ostwürttemberg DonauRies AG and ZEAG Energie AG

4.8.2 Grids: Electricity grids



EnBW Group: Network grid lengths

in km

	2018	2017
Transmission grid		
Extra-high voltage 380 kV	2,200	2,200
Extra-high voltage 220 kV	1,000	1,000
Distribution grid		
High voltage 110 kV	8,600	8,600
Medium voltage 30/20/10 kV ¹	44,400	45,100
Low voltage 0.4 kV ¹	94,400	94,200
Overall length	150,600	151,100

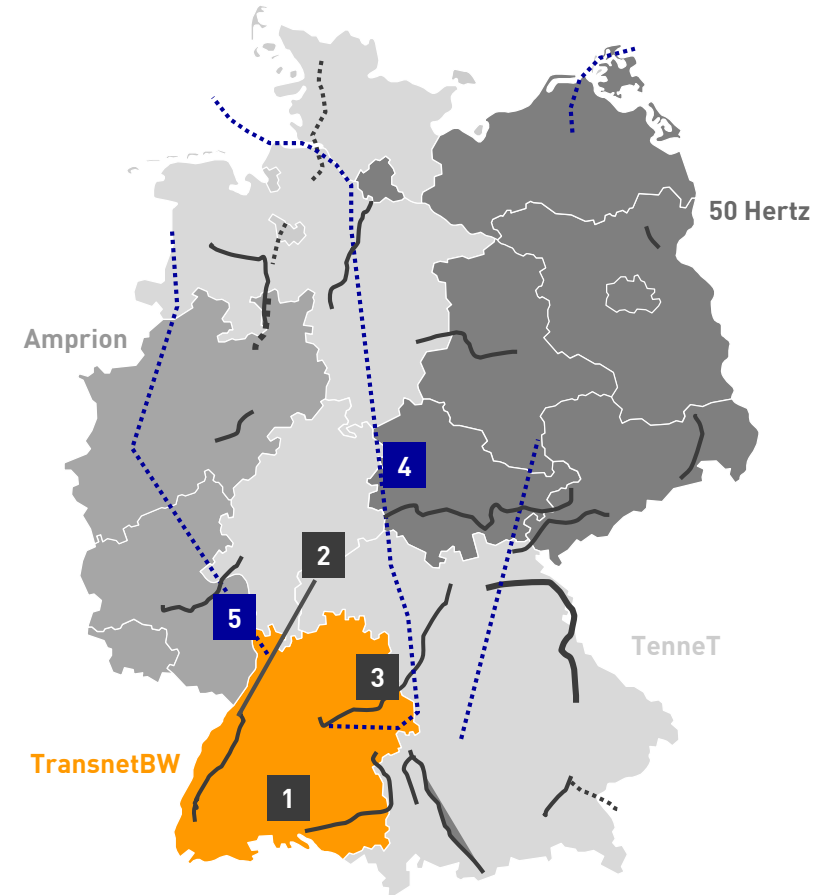


¹The slight decrease in the length of the distribution grid is mainly attributable to concession agreements not being renewed with some municipalities

4.8.3 Grids: Expansion of transmission grid to ensure security of supply

	Grid section	Scheduled completion
AC grid reinforcement		
1 for Rhine river area in Baden	119 km	2023
2 for north Baden-Württemberg	142 km	2023
3 for north east Baden-Württemberg	158/+56 km	2022/2030
DC expansion		
4 in corridor C "SuedLink" 4 GW corridor	700 km ¹	2025
5 in corridor A "Ultranet" 2 GW corridor EnBW contribution: converter, power lines in Baden-Württemberg	40 km	2023

Investment up to 2025: around €6.5 bn




- New construction (DC)
- New construction (AC)
- Grid reinforcement (AC)

Source: BNetzA, EnBW, Net Develop Plan (NEP) 2030 2. Draft 2019; www.netzausbau.de
¹ In cooperation with TenneT

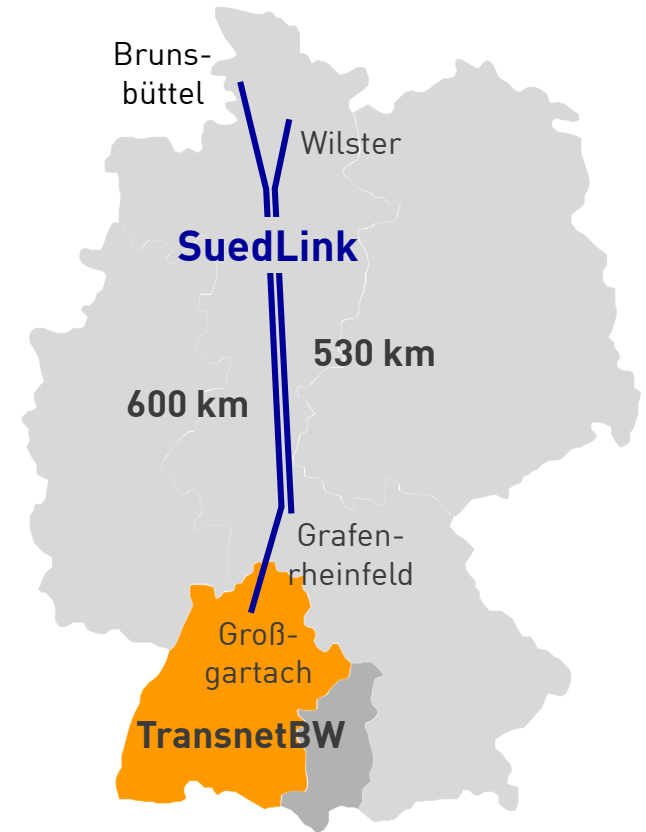


4.8.4 Grids: SuedLink is the largest infrastructure project of the Energiewende



TRANSNET BW cooperation with  **Tennet**

- > Main investments expected to start in: **2020**
- > Expected date of commissioning: **2025**
- > Rated output: **2x2 GW high voltage direct current transmission**
- > Voltage level: **Planned ±320 kV DC or 525 kV DC**



 **Total investment: €10 bn**

4.8.5 Grids: Investing in distribution grid to integrate renewables and electric cars whilst securing high quality supply

Challenges and activities

Challenges of the distribution grid in Baden-Württemberg ...

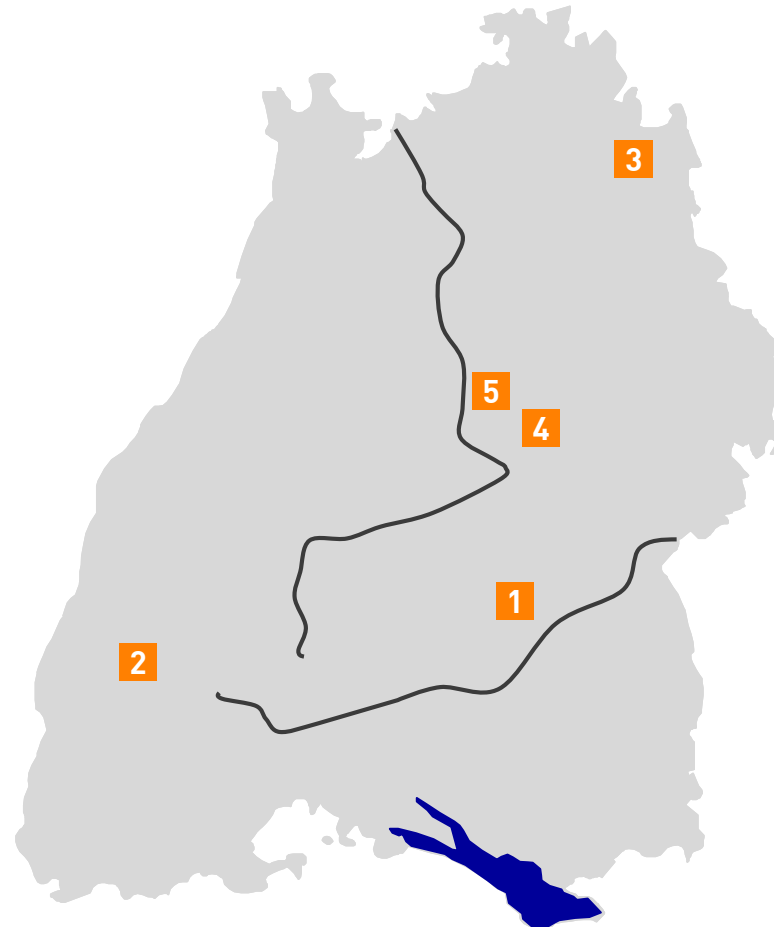
- > Widespread use of photovoltaics in the grid area
- > High expansion targets for wind power
- > Growing prevalence of electric cars

... necessitate grid expansion using smart technologies (e.g. controllable local grid station, current peaks storage, etc.)

In addition to expansion of the distribution grids, EnBW is investigating smart distribution grids together with partners in several "grid laboratories".

Through to 2025, investment of ~€2.5 bn necessary to develop the electricity distribution grid infrastructure in Baden-Württemberg

EnBW grid laboratories and grid innovations



- 1 Sonderbuch**
Interactive smart grid demonstrator
- 2 Freiamt**
The grid as distributed power plant; implementation of grid traffic light
- 3 Niederstetten**
Improvement of fault isolation and voltage regulation
- 4 E-Mobility Avenue**
Approaches for the integration of electric mobility in the low-voltage grid
- 5 Electric fleets**
Integration of electric fleets with the use of smart charging infrastructure

4.8.6 Grids: Gas grids



EnBW Group's gas grids in km

	2018	2017
Long-distance transmission grid		
High pressure	8,900	8,900
Distribution grid		
High pressure	2,300	2,300
Medium pressure	8,400	8,100
Low pressure	4,600	4,600
Overall length	24,200	23,900



4.9.1 Generation and portfolio: EnBW Group in 2018



	Generation portfolio		Own generation	
	2018 in MW	share in %	2018 in GWh	share in %
Renewable energies	3,738	28	8,414	16
Run-of-river	1,006	8	4,846	9
Storage/pumped storage (using natural flow of water)	1,507	11	1,030	2
Onshore wind	718	5	996	2
Offshore wind	336	3	1,233	2
Other	171	1	309	1
Thermal power plants	9,661	72	45,078	84
Lignite	875	6	6,048	11
Hard coal	3,491	26	12,868	24
Gas	1,468	11	3,518	7
Other	349	3	198	-
Pumped storage (not using natural flow of water)	545	4	1,790	3
Nuclear	2,933	22	20,656	39
Total	13,399	100	53,492	100



4.9.2 Generation and portfolio: Thermal power plants in 2018¹



 **Conventional**
in MW

Karlsruhe	1,351
Düsseldorf	1,246
Lippendorf	875
Heilbronn	778
Altbach/Deizisau	589
Mannheim	546
Rostock	259
Walsum	250
Stuttgart	211
Walheim	136

 **Nuclear**
in MW

Philippsburg	1,402
Neckarwestheim	1,096
Fessenheim, Cattenom (France)	

 **Grid reserve power plants²**
in MW

Marbach	426
Heilbronn	250
Walheim	244
Karlsruhe	353
Altbach	433



¹ Major power plants

² Continued temporary operation of 9 power plant units due to system relevance: HLB 5/6 , MAR DT III, MAR GT II, MAR GT III, WAL1/2, RDK4s and ALT HKW1

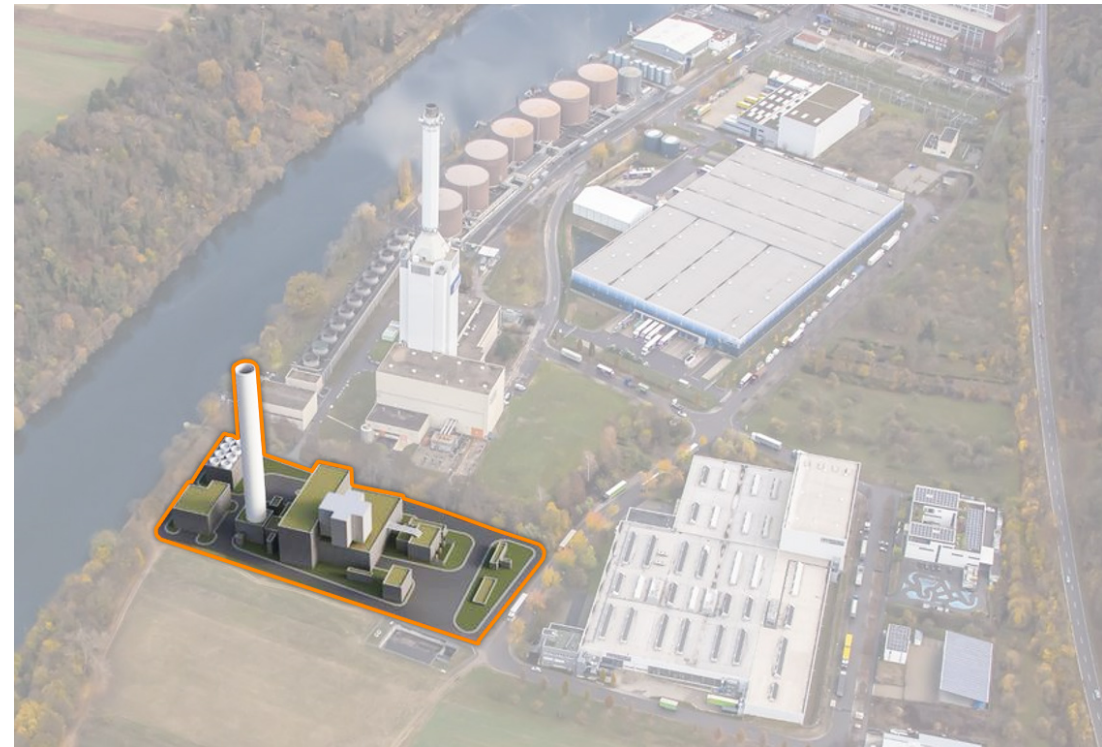
4.9.3 Generation and portfolio: New-built gas turbine power plant for grid stability purposes in South Germany

Additional capacity for grid stability in South Germany necessary

- › In 2017 the federal regulation agency approved additional power generation capacity of 1.2 GW in South Germany to maintain grid stability in the context of the so-called Energiewende.
- › Call for tenders of the South German grid operators (TSOs) started in July 2018. EnBW took part by proposing a 300 MW gas turbine power plant at the existing EnBW site Marbach a.N.
- › Contract awarded to EnBW in August 2019

Timeline and next steps

- › Permitting process ongoing
- › Construction works on site starting beginning of 2020
- › Commissioning around mid 2022
- › Commercial operation in October 2022



Artistic impression of the gas turbine power plant at the site Marbach a.N.



4.9.4 Generation and portfolio: Hydropower plants in 2018



Run-of-river in MW

Rhine power plants	560
Neckar, Donau, Murg, Nagold, Enz, Glatt, Jagst, Kocher, Argen	159
Iller power plants	51
EnAlpin	271



Pumped storage in MW

Schluchsee power plants	870
Vorarlberger Illwerke	1.049
Glems	90
Rudolf-Fettweis-Werk Forbach	43





4.10.1 Offshore wind: Portfolio and project pipeline

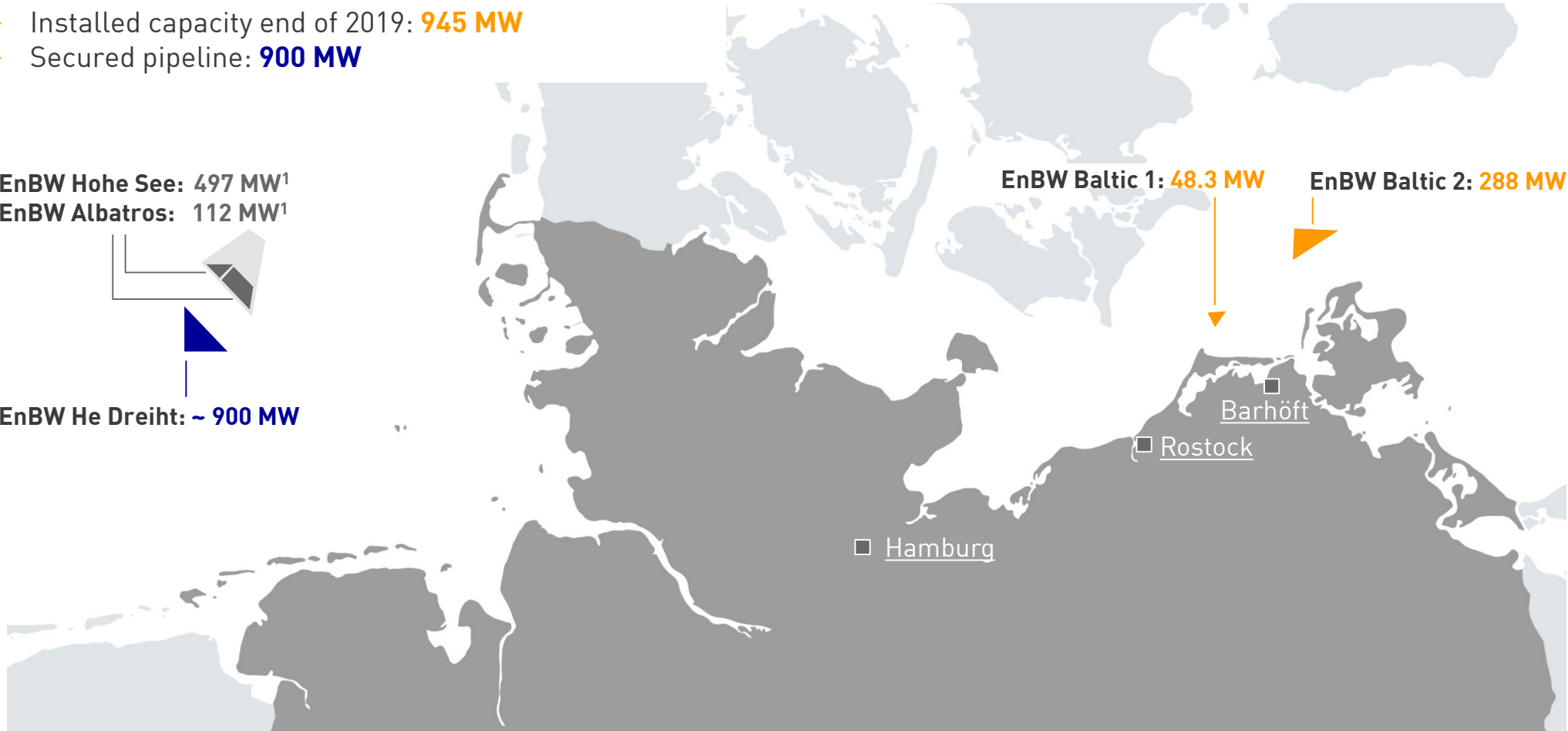


- > Installed capacity end of 2019: **945 MW**
- > Secured pipeline: **900 MW**

EnBW Hohe See: 497 MW¹
 EnBW Albatros: 112 MW¹



EnBW He Dreiht: ~ 900 MW



■ Construction ■ Development stage ■ In operation

¹ Planned commercial operation date (COD) - end of 2019



4.10.2 Offshore wind: Windfarms in operation



EnBW Baltic 1



EnBW Baltic 2

Country	Germany	Germany
Technology	Offshore Wind	Offshore Wind
Type of turbine	21 x Siemens SWT 2.3-93	80 x Siemens SWT 3.6-120
Total capacity	48.3 MW	288 MW
Shareholders	~50.1% EnBW ~49.9% 19 municipal utilities	~50.1% EnBW ~49.9% PGGM & ÄrzteVersorgung Westfalen-Lippe
Commissioned	April 2011	September 2015
Feed-in tariff	EEG 2009	EEG 2012



4.10.3 Offshore wind: Offshore windfarms under construction



EnBW Hohe See



EnBW Albatros

Country	Germany	Germany
Technology	Offshore Wind	Offshore Wind
Type of turbine	71 x Siemens SWT 7.0-154	16 x Siemens SWT 7.0-154
Total capacity	497 MW	112 MW
Shareholders	~50.1% EnBW ~49.9% Enbridge Inc./CPPIB	~50.1% EnBW ~49.9% Enbridge Inc./CPPIB
Commissioning	2019	2019
Feed-in tariff	EEG 2014	EEG 2014

4.10.4 Offshore wind: EnBW presence in Taiwan

Offshore wind market Taiwan

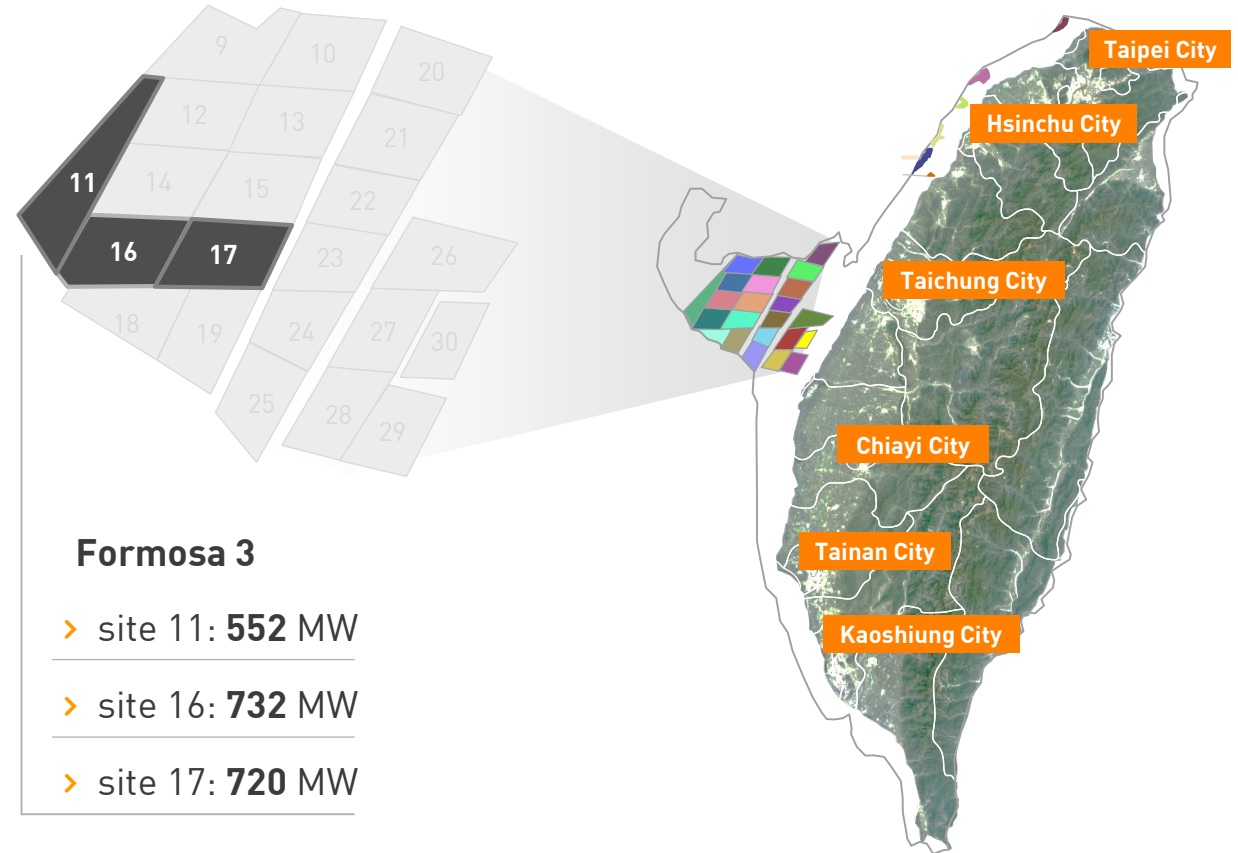
- > Estimated market volume of 5.5 GW by 2025
- > Long term goals of 11 GW by 2035 and 21 GW by 2050
- > 3rd stage auction expected for 2020 after general elections

EnBW Asia Pacific Ltd. established

- > Founded in 2018 and located in Taipei
- > Building-up a service JV and enhancing EnBW's local presence
- > Improving relations with local stakeholders and supply chain and transferring knowhow

Development of Formosa3-pipeline

- > Project development together with partners
- > Three offshore wind projects of up to 2 GW capacity
- > Several permits (e.g. EIA approval) obtained





4.10.5 Offshore wind: Project development activities in North America

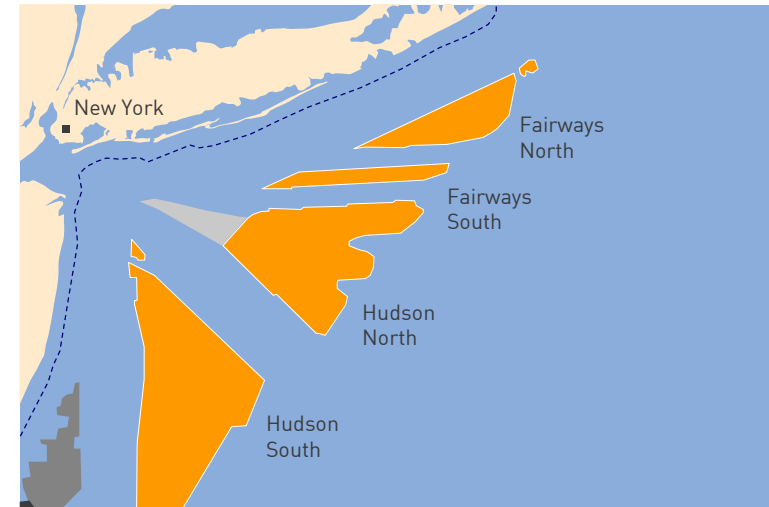


US West Coast

- > Joint venture Castle Wind LLC for first floating offshore wind project between local developer Trident Winds (20%) and EnBW North America (80%)
- > First commercial-scale floating offshore wind project developed in USA
- > California renewable energy generation target of 60% by 2030 and 100% by 2045

US East Coast

- > Local subsidiary EnBW North America Inc. legally established and in operation with local staff since 2018
- > Project company East Wind LLC established in order to achieve site control by participation in offshore wind lease auctions
- > Official offshore wind development targets of states along US East Coast increased to over 20 GW by 2035



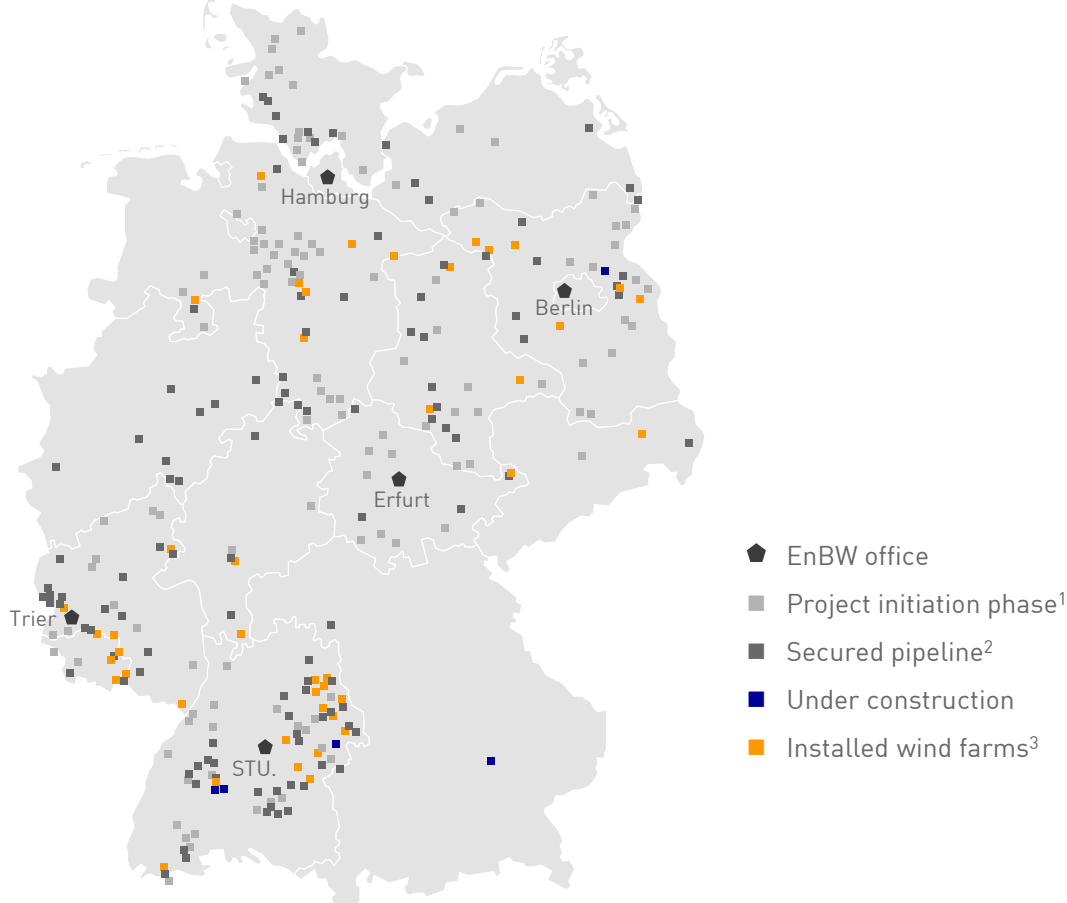
- Federal / State Boundary
- Proposed call areas
- BOEM lease areas**
- Statoil Wind US LLC OCS-A 0512
- US Wind Inc. OCS-A 0499
- Ocean Wind LLC OCS-A 0498



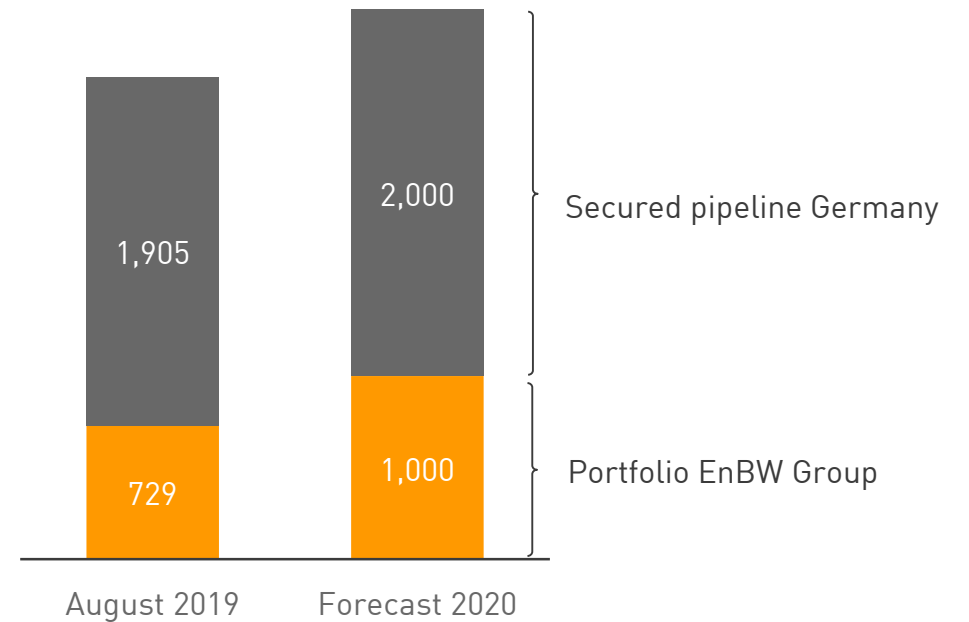
4.11.1 Onshore wind portfolio: Project pipeline 2019 in line with plans for growth up to 2020



Regional distribution of the 2019 portfolio and pipeline in Germany as of 31.8.2019



Onshore wind portfolio and pipeline in MW



¹ Negotiations for land contracts in Germany (low proportion make it to project development)

² At least land contracts concluded (large proportion is completed) in Germany

³ Wind parks in operation with EnBW majority shareholding



4.11.2 Onshore wind portfolio in Germany: Portfolio and windfarms under construction



Portfolio in Germany: Windfarms in operation as of 31.12.2018

	Germany
Installed total power	613 MW
Number of turbines	276
Number of locations	59



Under construction:

	Prötzel I
Country	Germany
Technology	Onshore
Type of turbine	Enercon E115
Total capacity in MW	9
Number of turbines	3
Operation date	May 2020
Feed-in system	EEG 2017

4.11.3 Onshore wind in Germany: Installed wind farms (1/7)



	Aalen-Waldhausen	Alt Zeschdorf	Benndorf	Berghülen	Boxberg-Angeltörn	Boxberg-Bobstadt	Boxberg-Oberschüpf	Braunsbach
Country	Germany	Germany	Germany	Germany	Germany	Germany	Germany	Germany
Technology	Onshore	Onshore	Onshore	Onshore	Onshore	Onshore	Onshore	Onshore
Type of turbine	Vestas V126	Vestas V90	NEG Micon NM1000	Enercon E82-E2	Enercon E-115	Enercon E-115	Enercon E-101	Enercon E-115
Total capacity in MW	16.5	6	5	6	12	12	3.1	15
Number of turbines	5	3	5	3	4	4	1	5
Commissioning date	Sep 2017	Dec 2009	Dec 2001	Dec 2012	Dec 2016 Feb 2017	Mar 2018	July 2017	Nov 2016 Dec 2016
Feed-in system	EEG 2014 and older	EEG 2014 and older	EEG 2014 and older	EEG 2014 and older	EEG 2014 and older	EEG 2014 and older	EEG 2014 and older	EEG 2014 and older



4.11.3 Onshore wind in Germany: Installed wind farms (2/7)



	Breitenbach	Bremervörde	Brettenfeld	Buchholz	Buchholz II	Buchholz III	Bühlertann	Burgholz
Country	Germany	Germany	Germany	Germany	Germany	Germany	Germany	Germany
Technology	Onshore	Onshore	Onshore	Onshore	Onshore	Onshore	Onshore	Onshore
Type of turbine	GE 2,75-120	Nordex S70	Nordex N131	Vestas V90	Enercon E82-E2	Vestas V126	Vestas V126	Vestas V126
Total capacity in MW	8.25	9	6.6	36	4	13.2	13.2	9.9
Number of turbines	3	6	2	18	2	4	4	3
Commissioning date	2x Dec 2017 1x Jan 2018	Nov 2016	Sep 2017	Dec 2009	Dec 2012	Sep 2017	May 2017	Sep 2017
Feed-in system	EEG 2017 ¹	EEG 2014 and older	EEG 2014 and older	EEG 2014 and older	EEG 2014 and older	EEG 2014 and older	EEG 2014 and older	EEG 2014 and older

¹ Temporary regulations

EEG: Erneuerbare Energien-Gesetz (renewable energy act)



4.11.3 Onshore wind in Germany: Installed wind farms (3/7)



	Christinendorf III	Dienstweiler	Dittelsdorf III	Dünsbach	Düsedau	Eisennach II	Elze	Eppenrod	Fichtenau
Country	Germany	Germany	Germany	Germany	Germany	Germany	Germany	Germany	Germany
Technology	Onshore	Onshore	Onshore	Onshore	Onshore	Onshore	Onshore	Onshore	Onshore
Type of turbine	Vestas V90	Nordex N117	Vestas V90	Vestas V126	NEG Micon NM72	Vestas V90	Enercon E53	NEG Micon NW52	Vestas V126
Total capacity in MW	6	4.8	6	9.9	7.5	12	3.2	2.7	9.9
Number of turbines	3	2	3	3	5	6	4	3	3
Commissioning date	Dec 2011	Mar 2017	Jun 2010	Aug 2017	Dec 2002	Dec 2009	Dec 2010	Dec 2001	Sep 2017
Feed-in system	EEG 2014 and older	EEG 2014 and older	EEG 2014 and older	EEG 2014 and older	EEG 2014 and older	EEG 2014 and older	EEG 2014 and older	EEG 2014 and older	EEG 2014 and older

4.11.3 Onshore wind in Germany: Installed wind farms (4/7)



	Freckenfeld	Friedberg	Fürth	Görike	Grevenbroich	Harthäuser Wald	Hasel	Hauersweiler
Country	Germany	Germany	Germany	Germany	Germany	Germany	Germany	Germany
Technology	Onshore	Onshore	Onshore	Onshore	Onshore	Onshore	Onshore	Onshore
Type of turbine	Nordex N131	Vestas V90	Nordex N131	Vestas V90	Vestas V90 GS	Enercon E-115	Vestas V126	Nordex N117
Total capacity in MW	19.8	6	16.5	10	2	54	9.9	15
Number of turbines	6	3	5	5	1	18	3	6
Commissioning date	Dec 2017	Dec 2011	Jun 2018	Dec 2010	Jul 2014	Nov 2015 Dec 2015 Sep 2017	Nov 2017	Dec 2010
Feed-in system	EEG 2014 and older	EEG 2014 and older	EEG 2014 and older	EEG 2014 and older	EEG 2014 and older	EEG 2014 and older	EEG 2014 and older	EEG 2014 and older

4.11.3 Onshore wind in Germany: Installed wind farms (5/7)



	Homburg	Ilshofen- Ruppertshofen	Kemberg II	Königheim	Langenburg	Leddin II	Müncheberg	Neuruppin	Niederlinx- weiler
Country	Germany	Germany	Germany	Germany	Germany	Germany	Germany	Germany	Germany
Technology	Onshore	Onshore	Onshore	Onshore	Onshore	Onshore	Onshore	Onshore	Onshore
Type of turbine	Nordex N117	Enercon E-101	Vestas V90	Enercon E-115	Vestas V126	Vestas V90	Vestas V90	Vestas V90	Nordex N117
Total capacity in MW	9.6	6.1	12	6	40.05	2	8	16	4.8
Number of turbines	4	2	6	2	12	1	4	8	2
Commissioning date	Mar 2017	Jul 2014 Jun 2015	Jul 2014	Sep 2017	Dec 2017	Dec 2009	Nov 2006	Feb 2014	Dec 2015
Feed-in system	EEG 2014 and older	EEG 2014 and older	EEG 2014 and older	EEG 2014 and older	EEG 2014 and older	EEG 2014 and older	EEG 2014 and older	EEG 2014 and older	EEG 2014 and older

4.11.3 Onshore wind: Installed wind farms (6/7)



	Nonweiler	Oldendorf	Ostercappeln	Puschwitz	Rosenberg Süd	Rositz	Rot am See	Schnittlingen	Schopfloch
Country	Germany	Germany	Germany	Germany	Germany	Germany	Germany	Germany	Germany
Technology	Onshore	Onshore	Onshore	Onshore	Onshore	Onshore	Onshore	Onshore	Onshore
Type of turbine	Nordex N117	Enercon E53	Nordex S70	Vestas V80	Nordex N131	Nordex S70	Vestas V126	DeWind D6	Enercon E82
Total capacity in MW	4.8	12	18	20	6.6	13.5	9.9	1	2
Number of turbines	2	15	12	10	2	9	4	1	1
Commissioning date	Mar 2017	Dec 2010	Nov 2016	Dec 2017	Sep 2017	Nov 2016	Sep 2016 Jun 2019	Dec 2002	Dec 2012
Feed-in system	EEG 2014 and older	EEG 2014 and older	EEG 2014 and older	EEG 2014 and older	EEG 2014 and older	EEG 2014 and older	EEG 2014 and older	EEG 2014 and older	EEG 2014 and older

4.11.3 Onshore wind in Germany: Installed wind farms (7/7)

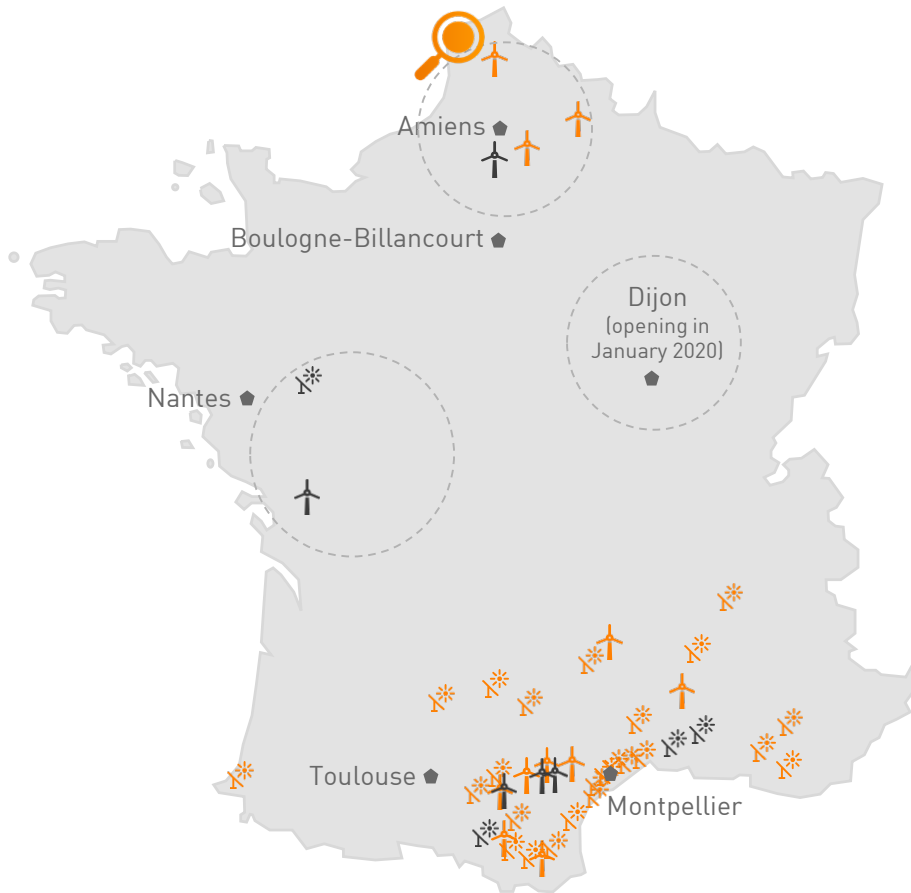


	Schulenburg II	Schwiebau II	Söllenthin	Webenheim	Westerheim I	Willich	Winterbach	Zernitz
Country	Germany	Germany	Germany	Germany	Germany	Germany	Germany	Germany
Technology	Onshore	Onshore	Onshore	Onshore	Onshore	Onshore	Onshore	Onshore
Type of turbine	Vestas V90	Vestas V80	Vestas V90	Repower MM92	NEG Micon NM600	Vestas V80	Nordex N131	Enercon E66
Total capacity in MW	6	10	6	6.15	0.6	4	9.9	14.4
Number of turbines	3	5	3	3	1	2	3	8
Commissioning date	Dec 2010	Dec 2009	Jul 2014	Dec 2016	Dec 1998	Nov 2004	Dec 2017	Nov 2016
Feed-in system	EEG 2014 and older	EEG 2014 and older	EEG 2014 and older	EEG 2014 and older	EEG 2014 and older	EEG 2014 and older	EEG 2014 and older	EEG 2014 and older

4.12 Activities in France: Valeco SAS



The Valeco wind and solar asset portfolio 2019



Audincthun wind farm commissioned in summer 2019
6 Enercon E-92/2.35 MW turbines – installed capacity 14.1 MW

- ◆ Valeco office
- ↑ Wind farm
- ☀ Solar farm
- In operation
- Under construction
- Valeco pipeline focus regions

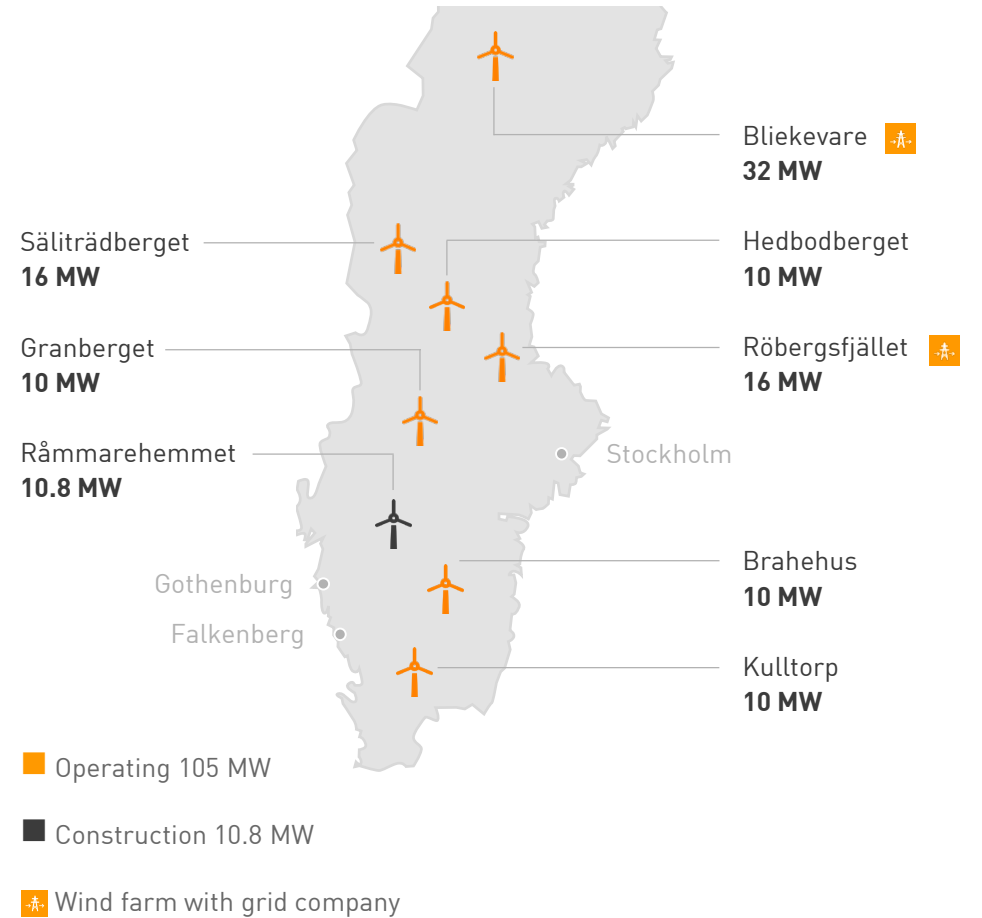


- > Develops, owns and operates
 - > onshore wind
 - > solar and
 - > small hydro projects
- > Main focus on the French Market
- > 133 employees
- > Generation portfolio as of 30.9.2019:
 - > 344 MW wind (100 MW fully consolidated)
 - > 61 MW solar (30 MW fully consolidated)
- > Valeco develops and enhances a wind onshore and solar PV pipeline of approx. **1.7 GW** with **promising market potential** (esp. Hauts-de-France, Bourgogne-Franche-Comté, Nouvelle-Aquitaine)

4.13 Activities in Sweden¹: EnBW Sverige AB



- > EnBW acquired independent service provider Connected Wind Service (CWS) with three subsidiaries CWS Denmark, CWS Sweden and CWS Germany in 2016. CWS Sweden is one of the market leaders for wind maintenance work in Sweden, operating from Falkenberg.
- > In 2018 EnBW Sverige AB was established by acquisition of a project development permit for a wind farm in south Sweden (three turbines, currently in construction phase).
- > The company is being built up in Falkenberg to develop a constantly growing wind portfolio.
- > Since the end of 2018, EnBW Sverige AB has operated a 105 MW wind portfolio in Sweden through two subsidiaries after acquiring Power Wind Partners AB (previously owned by investment firms FAM AB and Proventus and insurer Folksam) and Gnösjö Energi AB (from Folksam). The portfolio comprises plus two grid companies.



¹ Figures as of 31 December 2018

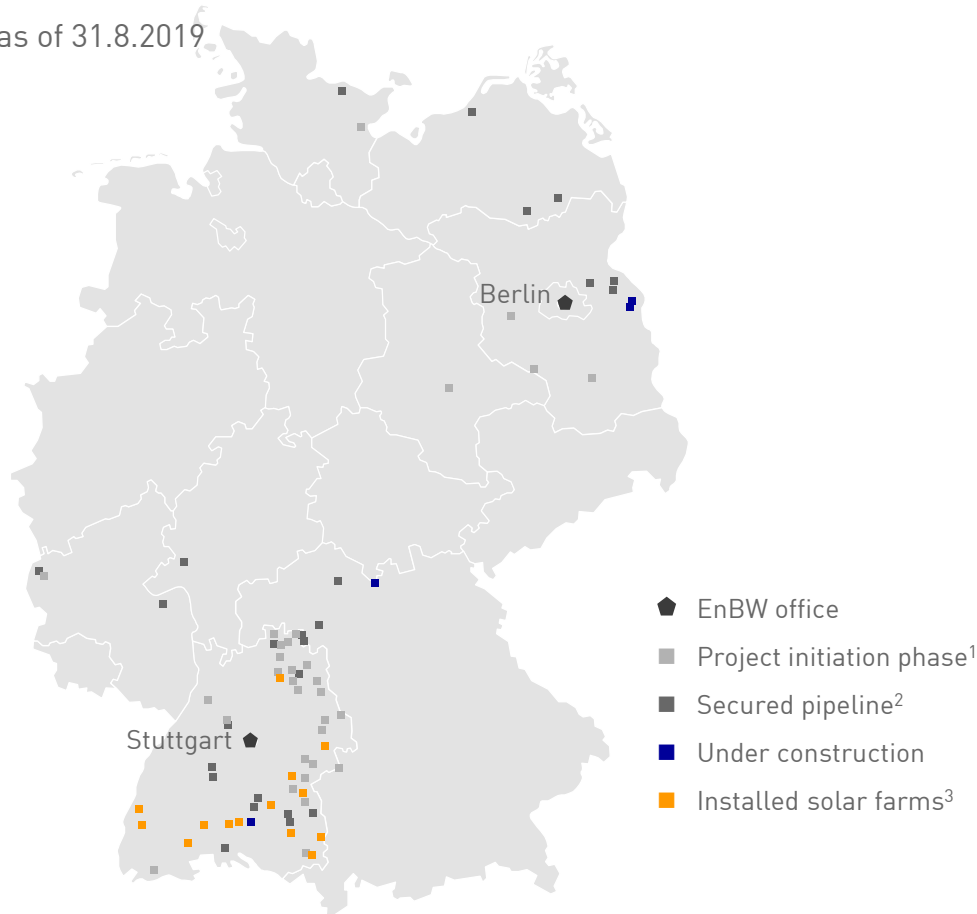


4.14.1 Photovoltaics portfolio in Germany: Project pipeline 2019 in line with plans for growth up to 2020



Regional distribution of the 2019 portfolio and pipeline in Germany

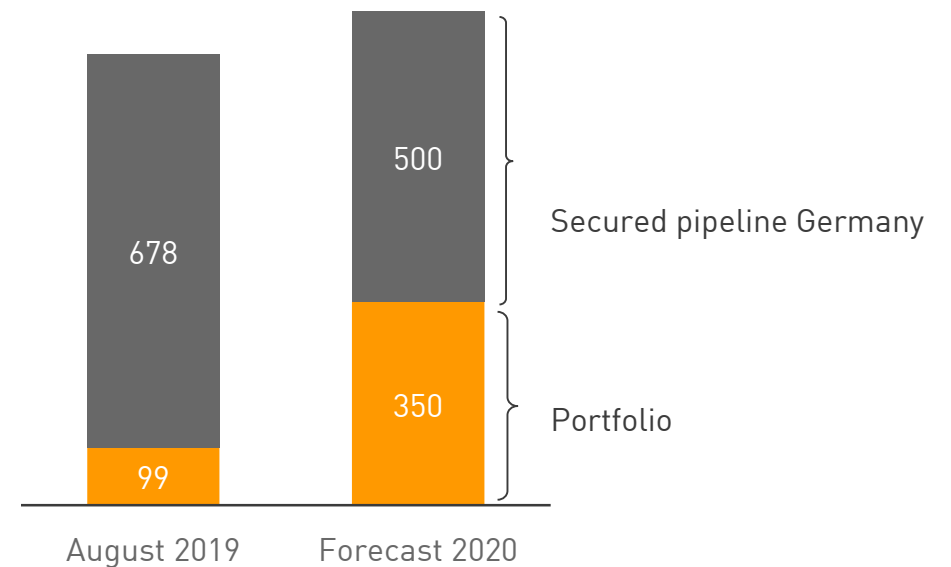
as of 31.8.2019



Portfolio and pipeline

in MW_p

> Besides projects within the EEG system, EnBW focuses on developing projects on a larger scale without feed-in tariff.



¹ Negotiations for land contracts (low proportion make it to project development)

² At least land contracts concluded (large proportion are completed)

³ Solar parks in operation with EnBW majority shareholding



4.14.2 Photovoltaics portfolio in Germany: Portfolio and projects under construction



In operation: as of 31.12.2018

	Germany
Installed total power	73 MW
Number of solar parks	>50



Installed in 2019:

	Leibertingen 2
Country	Germany
Technology	Solar
Total capacity in MW	5
Operation date	Aug 2019
Feed-in system	EEG 2017



Under construction:

	Birkenfeld	Inzigkofen	Lindendorf
Country	Germany	Germany	Germany
Technology	Solar	Solar	Solar
Total capacity in MW	5.8	7.5	6.9
Operation date	Oct 2019	Oct 2019	Oct 2019
Feed-in system	EEG 2017	EEG 2017	EEG 2017

EEG: Erneuerbare Energien-Gesetz (renewable energy act)



4.15 EnBW's trading activities: Central access to wholesale markets to manage price and volume risks



EnBW's trading activities:

- > Market access to wholesale commodity markets for customers and EnBW group: **power, gas, emissions, coal, fuels**
- > Direct marketing of renewables 2019: **3,500 MW+**
- > Annual trading volumes, 2018:
 - > **850 TWh power**
 - > **1,740 TWh natural gas**
 - > **170 mn t coal**
 - > **600 mn t EUAs**
 - > **34 mn bbl oil**
- > **200+** employees
- > **2,000,000+** trades per year
- > Buying and selling power and gas on wholesale markets from intraday to 10 years+
- > Trading "Energiewende" products:
 - PPAs
 - International expansion of portfolio
 - Guarantees of origin
 - Direct marketing of renewables
- > Origination activities for power and gas including LNG
 - Substitution of conventional generation assets by contracts
 - Expansion of LNG trading activities
- > Commercial optimisation of flexible gas and power portfolios including storage and supply contracts, also for third parties
- > Procurement and risk management for EnBW sales companies and support for their electricity and gas customers
- > OTC access for power to NL, FR, CH, AT, CZ, IT, HU
- > OTC access for gas TTF, Gaspool (H/L), NCG (H/L), AT VTP, IT, FR
- > Active on major power and commodity exchanges including EEX (Leipzig), ICE (London) PEGAS (Paris) and EPEX Spot (Paris), as well as on OTC markets where we trade with 150+ counterparties

PPAs: Power purchase agreements
 TTF: Title transfer facility
 NCG: NetConnect Germany
 PEGAS: Pan-European Gas Cooperation

LNG: Liquid natural gas
 (H/L): High calorific gas, low calorific gas
 ICE: Intercontinental Exchange
 EPEX: European Power Exchange

OTC: Over-the-counter
 AT VTP: Austria Virtual Trading Point
 EEX: European Energy Exchange

NL: Netherlands
 CH: Switzerland
 CZ: Czech Republic
 HU: Hungary

FR: France
 AT: Austria
 IT: Italy



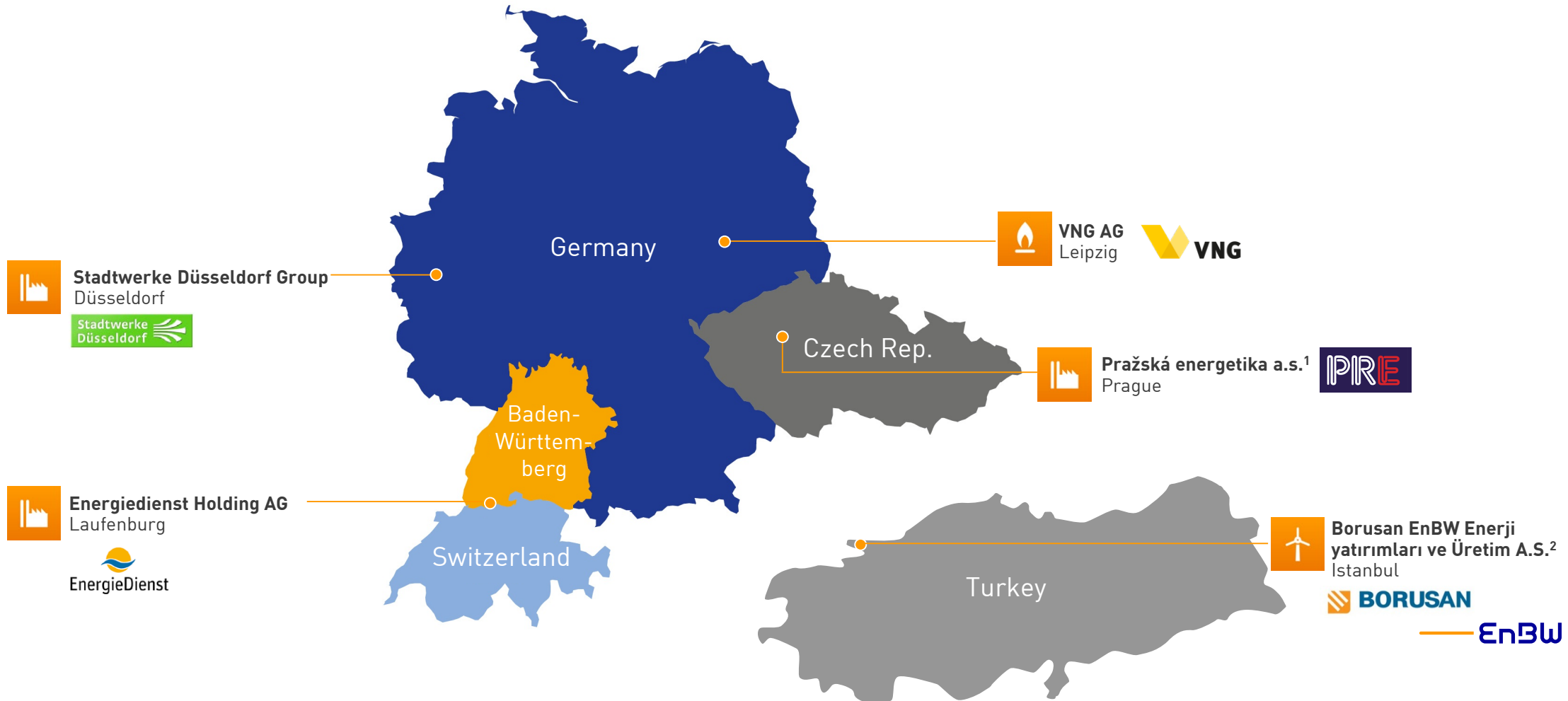
Agenda 5 – EnBW's Main Shareholdings



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 - > Key non-financials
2. Environment..... page 6 >>
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 - > Regulatory environment
 - > Markets
3. Strategy page 34 >>
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 - > EnBW 2025 Strategy
 - > Further strategic aspects:
Broadband, Contracting, Digitization, Research and Development,
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 - > Sales
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5. **EnBW's Main Shareholdings**..... page 111 >>
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 - > Stadtwerke Düsseldorf Group
 - > VNG AG
 - > Borusan EnBW Enerji yatırımları ve Üretim A.S
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 - > Financial calendar
 - > Contact details
 - > Important links

5.1 EnBW's Main Shareholdings



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 as of 31.12.2018 is published at www.enbw.com/report2018-downloads.

Further information: www.enbw.com/shareholdings.



5.2.1 Energiedienst Holding AG



Established
1908



Employees
994



Profile

- > Energiedienst generates green electricity from hydropower and sells electricity and gas. The group's own grid companies supply customers with electricity.
- > In addition, Energiedienst is growing in new business areas for tomorrow's world of decentralised, renewable and digital energy. The group drives the Energiewende for customers by providing smart interconnected products and services, including solar panels, heat pumps, electricity storage systems and electric mobility together with car sharing.



Location
Laufenburg,
Switzerland



Energiedienst



Alexander Lennemann

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- > +49 7623 92 2660
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5.2.2 Energiedienst Holding AG at a glance¹



Spanning the Swiss & German markets

Sound investment with potential

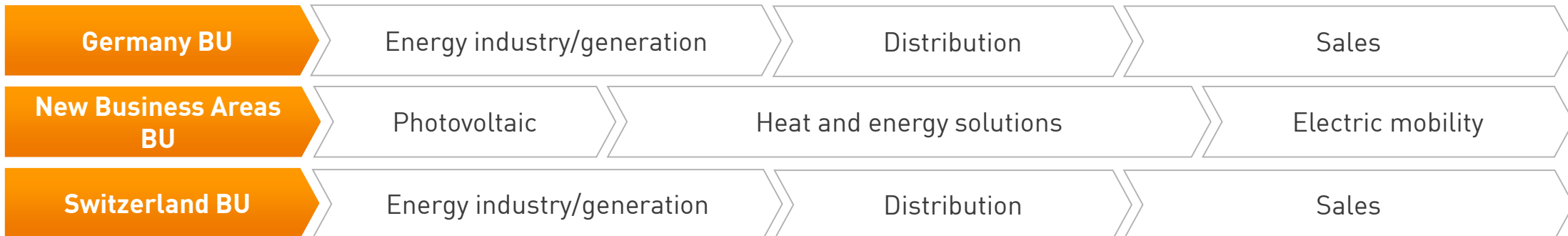
Additional figures

- > 651 MW installed capacity in renewables (primarily run-of-river power plants)
- > Approximately 8,100 km low-voltage grid
- > Around 270,000 electricity and gas customers
- > 986 employees

- > Stable cash flows in traditional businesses
- > Clear strategic focus on developing new businesses

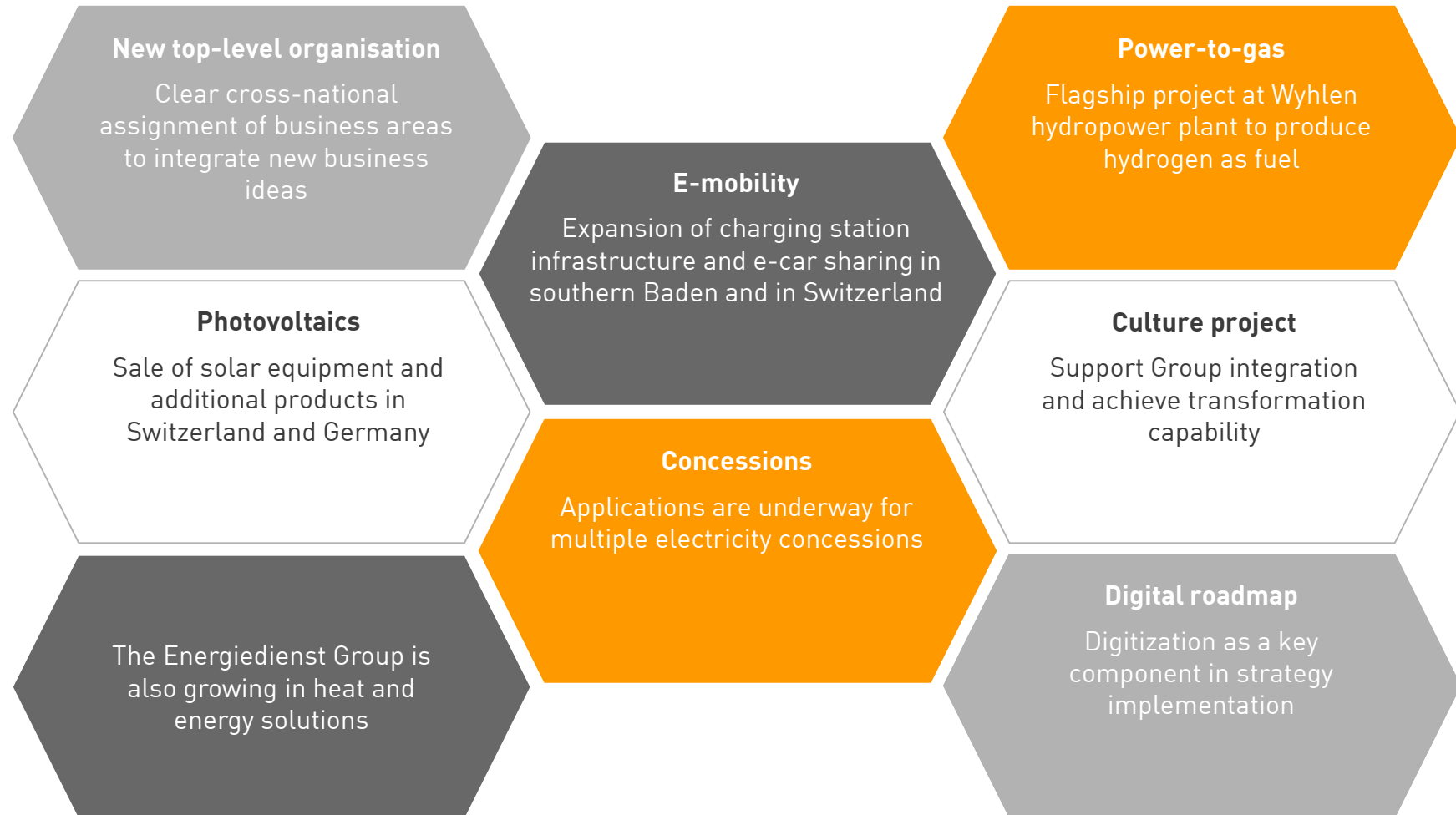
- > Net revenue: €896 m
- > Adjusted EBIT: €28.4 m
- > Net profit: €13.2 m
- > Free cash flow: -€4.7 m
- > Equity ratio: 51.6%

Three business segments



¹ As of 31 December 2018

5.2.3 Energiedienst Holding AG: Current key topics and projects



5.3.1 Pražská energetika, a. s.



Established
1897



Employees
1,478



Profile

- > Electricity distribution in Prague
- > Electricity and gas supplies to all customer segments in the Czech Republic; focus on B2C segment in Prague
- > Renewable generation
- > Energy infrastructure services for B2C, B2G and B2B



Location
Prague, CZ



Mgr. Petr Holubec

- > +420 602 265 790
- > www.pre.cz/en



5.3.2 Pražská energetika, a. s. at a glance¹



Number 3 utility in the Czech Rep.

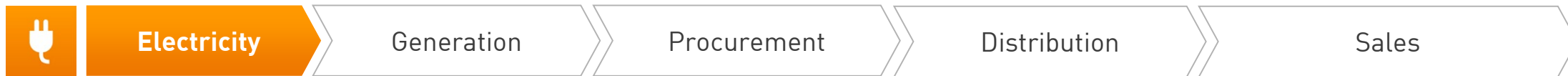
- > 6,327 GWh electricity distributed
- > Stable shareholder structure
- > 1,478 employees
- > Strong roots in Prague

Balanced risk-return profile

- Focus on**
- > Distribution (~60% EBITDA) and
 - > Electricity and gas supply (~30% EBITDA)

Key figures

- > Revenues: CZK 20,459 m
- > Adj. EBITDA: CZK 4,873 m
- > Group net profit: CZK 2,868 m



Three business segments

Sales

Grids

Renewable Energies and Energy Services

¹ As of 31 December 2018



5.3.3 Pražská energetika, a. s.: Segment overview



Sales

- > **Adjusted EBITDA 2018:** CZK 1,329 m
- > **Employees:** 647
- > **Activities/products:** Sale of electricity and gas; focus on customer retention in Prague (PRE brand) and growth outside of Prague (Yello brand)



Grids

- > **Adjusted EBITDA 2018:** CZK 3,116 m
- > **Employees:** 575
- > **Activities/products:** Distribution of electricity; provision of grid-related services; guaranteeing security of supply and system stability



Renewable Energies / Energy Services

- > **Adjusted EBITDA 2018:** CZK 428 m
- > **Employees:** 256
- > **Activities/products:** Energy-related services; project development and management; construction and operation of renewable energy power plants (photovoltaics); energy efficiency consultancy; e-mobility services; operation of local distribution networks

5.3.4 Pražská energetika, a. s.:

Current key topics and projects



E-Mobility

- › **Expansion** of public charging **network**
- › B2B and B2C **private charging** solutions
- › Provision of **integrated e-mobility solutions** (for OEMs, B2B, B2C), i.e. chargers, commodity, billing, cars (with partner)



Fibre

- › Synergetic development of **electricity and fibre** grid
- › Backbone for **smart grid** applications
- › Provision of fibre infrastructure for telco retail partners (**FTTH**)



Smart city

- › Digitisation of network operation; upgrade to **smart distribution** stations
- › Installation of **multifunctional smart lamps** (SMIGHT)
- › **E-car sharing** pilot in Prague
- › **Multi-commodity measuring** in buildings



Energy services

- › Installation of **roof-top solar** systems incl. storage
- › Installation of **heating, ventilation and air conditioning** systems
- › Servicing of **local distribution networks**



5.4.1 Stadtwerke Düsseldorf Group



Established

20 September 1866



Employees

3,327



Profile

- > City energy utility: electricity, gas, water and district heating
- > Demand-driven development of interconnected urban infrastructure in the fields of energy, mobility and buildings



Location

Düsseldorf,
Germany



Carsten Capari

Business Accounting and Finances

> info@swd-ag.de

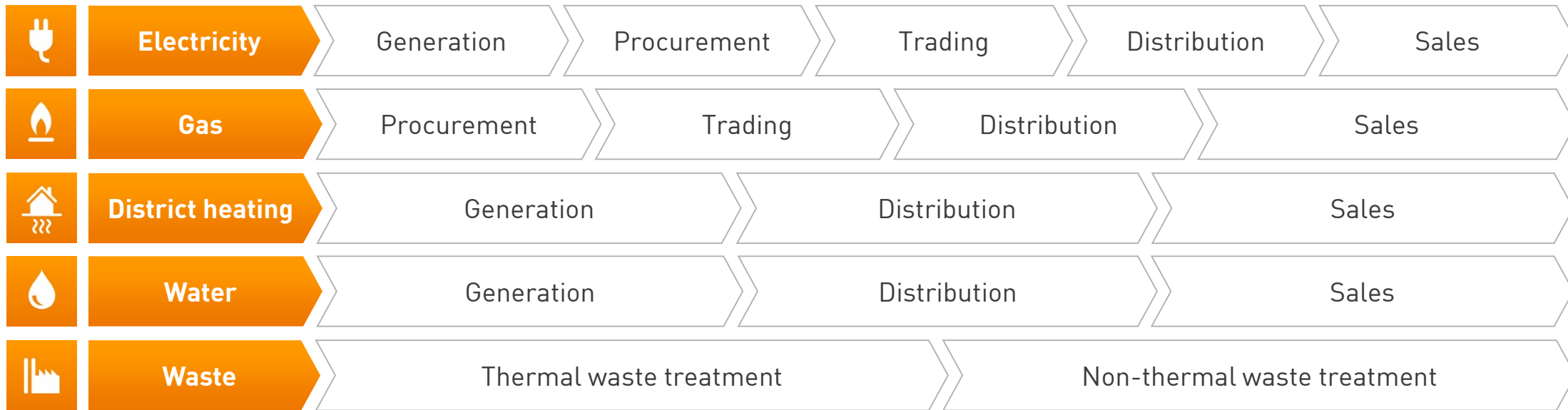
> www.swd-ag.de

5.4.2 Stadtwerke Düsseldorf Group at a glance¹

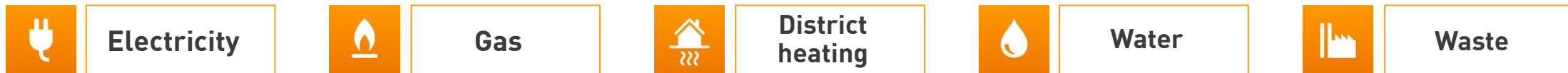


Key figures

- > Revenue: €1,768 m
- > EBITDA: €209 m
- > Net profit: €91 m
- > Equity: €758 m
- > Equity ratio: 38%
- > Total assets: €2,015 m



Five business segments



¹ As of 31 December 2018



5.4.3 Stadtwerke Düsseldorf Group: Segment overview¹



Electricity

- > **Revenue:** €1,106 m
- > **Business area:** Generation, Trading, Grids, Sales
- > **Production:** 14,871 m kWh
- > **Installed capacity:** conventional: 1,246 MWel
renewable: 59 MWel



Gas

- > **Revenue:** €289 m
- > **Business area:** Generation, Grids, Sales
- > **Production:** 9,211 m kWh



District heating

- > **Revenue:** €82 m
- > **Business area:** Generation, Grids, Sales
- > **Production:** 1,186 m kWh
- > **Installed capacity:** conventional: 2,416 MWth



Water

- > **Revenue:** €93 m
- > **Business area:** Generation, Grids, Sales
- > **Production:** 52m m³



Waste

- > **Revenue:** €184 m
- > **Business area:** Thermal waste treatment
- > **Production:** 425 kt



Others

- > **Revenue:** €14 m
- > **Business area:** Services

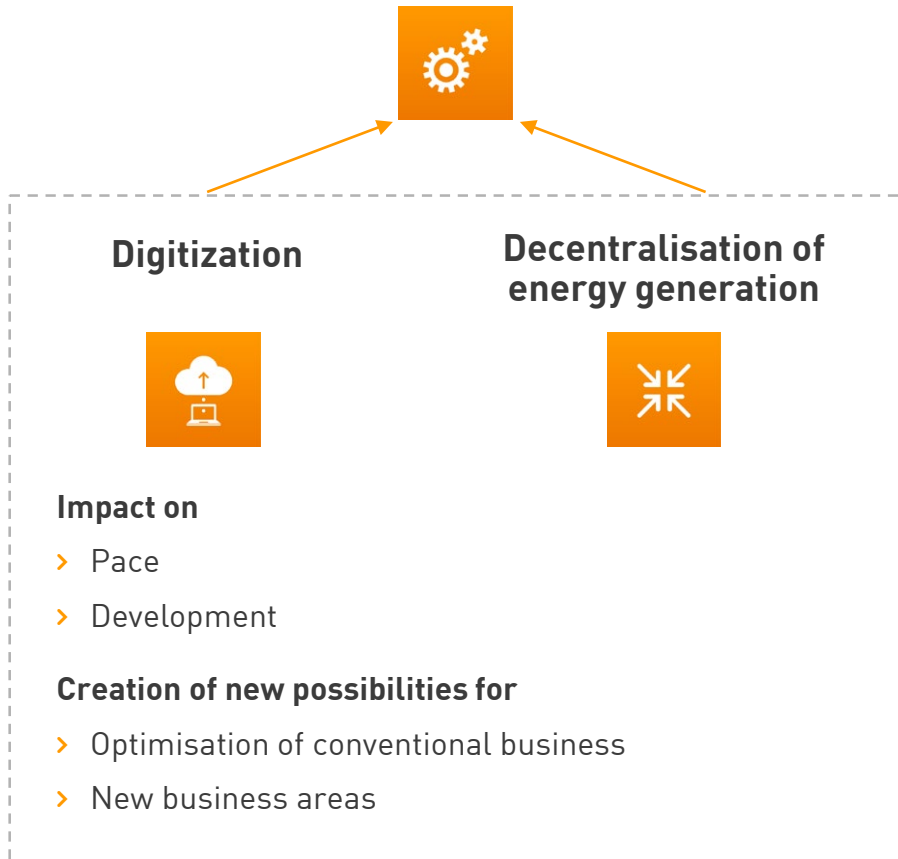
¹ As of 31 December 2018



5.4.4 Stadtwerke Düsseldorf Group: Current key topics and projects



Business development



Optimisation of conventional business

- > Systematic optimisation of our **sustainable generation infrastructure**
- > Focus among other things on **creating a smart district heating system** for the City of Düsseldorf for enhanced efficiency and customer friendliness
 - > The heart of this district heating system is the Fortuna plant
 - > Electricity and heat are produced using climate-friendly cogeneration technology and natural gas as a low-carbon energy source
 - > Düsseldorf Airport will be connected to the district heating system by the end of 2019

New business areas

- > A successful product, the **“eddy” e-scooter** hit Düsseldorf’s streets in 2017
 - > Emission-neutral transport reducing congestion and powered by green electricity for lower environmental impact
 - > Eddy is a prime example of modern sector coupling (electricity, heating/climate action and mobility)
 - > Number of scooters increased due to strong demand
 - > ADAC automobile club test: Top marks for scooter sharing





5.5.1 VNG AG



Established
1958



Employees
1,101



Profile

- > VNG is a group of over 20 companies active in the European energy industry with a broad, future-oriented portfolio of products and services in gas and infrastructure, and more than 60 years of experience in the energy market. Headquartered in Leipzig, the Group concentrates on three links in the gas value chain: Trading & Sales, Transport, and Storage.
- > Building on these core competences in the gas business, the Group's "VNG 2030+" strategy places a growing focus on new business fields. These include biogas, digital infrastructure, and district solutions.



VNG Group Locations

Germany	14
Italy	2
Austria	2
Poland	2
Slovak Republic	1
Czech Republic	1



VNG AG

- > info@vng.de
- > +49 341 443-0
- > www.vng.de/en



5.5.2 VNG AG at a glance¹



Trading & Sales business area

- > Wholesale and Retail divisions in Germany and Europe
- > 500 bn kWh gas send-out
- > Power and gas consumers (B2C)
 - > Germany: 182,500 | Austria: 58,000 | Poland: 37,000
- > Eight sales offices in Germany (Berlin, Dusseldorf, Erfurt, Frankfurt/Main, Hamburg, Leipzig, Munich, Stuttgart)



Transport business area

- > As an independent transmission operator, ONTRAS is responsible for Germany's second-longest gas transmission system
- > 7,000 km high-pressure gas pipeline system
- > 450 network interconnection points
- > 130 downstream network operators



Storage business area

- > Third-largest storage facility operator in Germany
- > Four underground storage facilities (Bad Lauchstädt, Bernburg, Etzel, Jemgum)
- > 2.2 bn m³ storage capacity



New businesses

- > Green Gases: Significant position in owning and operation of biogas plants, development of a position in hydrogen
- > Digital Infrastructure: Independent provider of mission-critical infrastructure in fibre, data centres and infrastructure-based applications
- > District Solutions: Building and operation of integrated municipal/industrial energy solutions



Revenue: **€11.2 bn**
 Investment result: **€296 m**



Adjusted EBIT: **€159 m**
 EBIT: **€196 m**



Group net profit : **€142 m**

¹ As of 31 December 2018

5.5.3 VNG AG: Current key topics and projects (1/2)

Core business



Trading & Sales

- › Optimisation of market position in terms of procurement and sales
- › Focus on the development of midstream excellence and moderate growth in retail business
- › Digitization of processes and market access



Storage

- › Focus on ensuring and extending cost and innovation leadership
- › Integration of and scaling up of service business for third parties
- › Development of use cases for underground storage of hydrogen
- › Remaining an integral part of future energy supply as storage facilities for volatile renewable energies



Transport

- › Increasing implementation of new business segments and continuous optimisation in the regulatory framework (e.g. efficiency improvements)
- › Development of comprehensive expertise in the field of green energy infrastructure
- › Focused on future options for sustainable, green use of the gas infrastructure with renewable natural gas

5.5.3 VNG AG: Current key topics and projects (2/2)

New business



Green gases

- › Following a road map for green gases with the aim of increasing the share of biogas and hydrogen in the energy mix
- › Focus on acquisition, integration and optimisation of biogas plants as well as the development of concepts post EEG subsidy scheme
- › Positioning of VNG in hydrogen



District solutions

- › Developing integrated local solutions with advanced network infrastructure in an approach which is independent of individual manufacturers
- › Optimisation along the value chain



Digital infrastructure

- › Becoming a leading independent provider of fibre optic infrastructure and of critical infrastructure-based data services in Germany



Innovations and startup-activities

- › Implementation of group-wide innovation process and development of new business areas
- › Private venture capital fund created to invest in new startups with a strategic fit to VNG
- › Strategic partnership with accelerators (SpinLab) to access innovative solutions and support internal entrepreneurial development



5.6.1 Borusan EnBW Enerji yatırımları ve Üretim A.S.



Established

September 2009



Employees

~150



Location

Istanbul, Turkey



Engin Aslan

- > e.aslan@enbw.com
- > +90 212 2903432
- > <https://www.borusanenbw.com.tr/en/anasayfa>

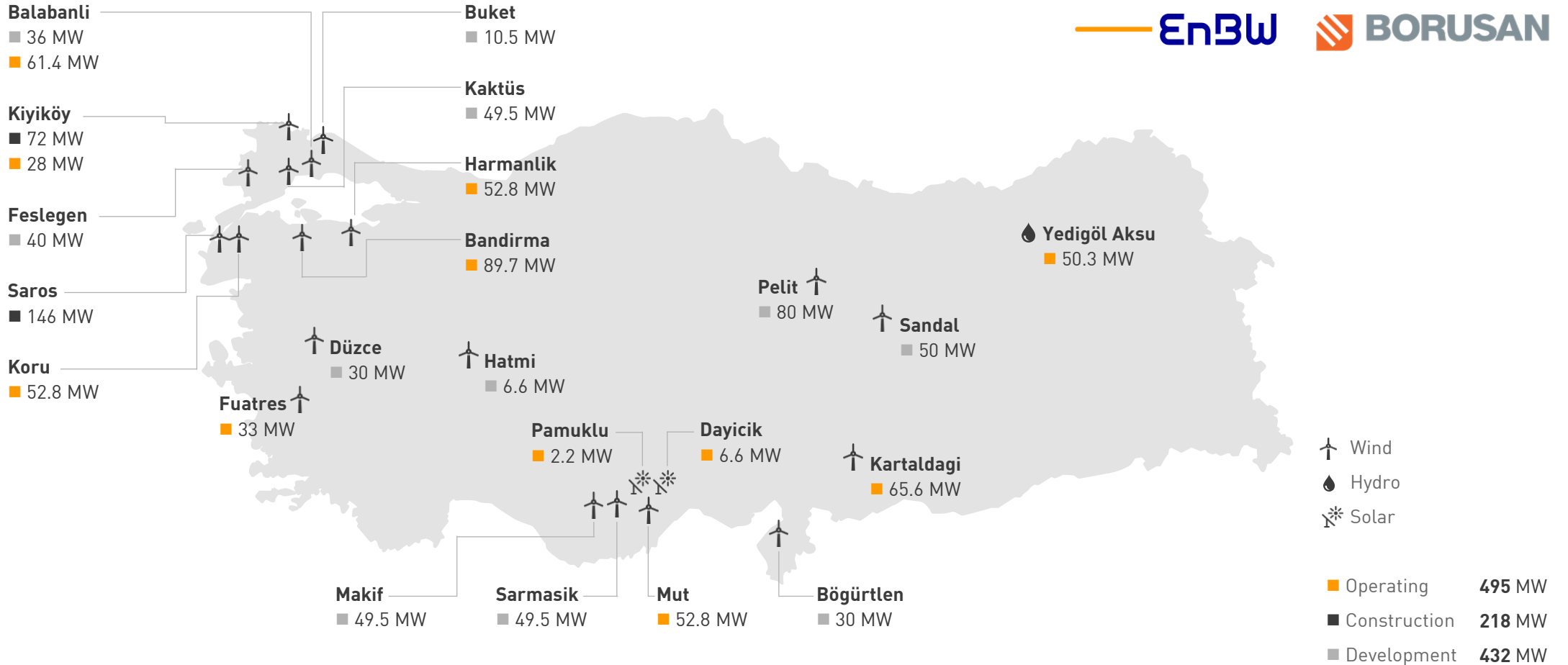


Profile

- > Borusan EnBW Enerji continues its activities with a vision of being a leading energy generation company in wind energy segment. From investments to operations, in all of its activities, efficiency and respect to society and nature are of utmost importance. In electricity sales and trading, Borusan EnBW Enerji plays a prominent role in Turkish electricity sector.



5.6.2 Activities in Turkey¹: Borusan EnBW Energy portfolio projects



¹ Figures not consolidated



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 - > Key non-financials
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 - > Regulatory environment
 - > Markets
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 - > EnBW 2025 Strategy
 - > Further strategic aspects:
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6.1 Five-year summary (1/2)



EnBW Group¹

		2018	2017	2016	2015	2014
Earnings						
External revenue	€ m	20,618	21,974	19,368	21,167	21,003
EBITDA	€ m	2,090	3,752	731	1,918	2,137
Group net profit/loss ²	€ m	334	2,054	-1,797	158	-466
Balance sheet						
Equity	€ m	6,273	5,863	3,216	5,123	4,546
Net financial debt	€ m	3,738	2,918	3,654	3,329	4,403
Cash flow						
Cash flow from operating activities	€ m	827.6	-1,696.1	473.6	1,918.3	1,775.7
Free cash flow	€ m	-374.9	-2,789.0	-494.7	651.6	330.2
Profitability						
ROCE	%	6.5	7.3	7.8	9.5	10.0
Value added	€ m	32	152	124	354	376
Capital markets						
Dividend per share	€	0.65	0.50	0.00	0.55	0.69
Energy sales						
Electricity	bn kWh	137	122	115	115	126
Gas	bn kWh	328	250	139	135	117

¹ The figures for 2017 have been restated

² No figures for the comparative period 2014 are available for the new performance indicators.

6.1 Five-year summary (2/2)



EnBW Group¹

		2018	2017	2016	2015	2014
Sales segment						
Electricity	bn kWh	37	40	44	48	48
Gas	bn kWh	57	57	54	82	72
External revenue	€ m	7,061	7,354	7,771	9,061	9,067
Adjusted EBITDA	€ m	271	330	250	255	231
Grids segment						
External revenue	€ m	3,215	7,472	6,644	6,351	6,231
Adjusted EBITDA	€ m	1,177	1,046	1,004	747	886
Renewable Energies segment						
Electricity sales	bn kWh	2	2	3	3	4
External revenue	€ m	478	508	511	447	407
Adjusted EBITDA	€ m	298	332	295	287	191
Generation & Trading segment						
Electricity sales	bn kWh	97	80	68	65	75
Gas sales	bn kWh	272	193	85	53	45
External revenue	€ m	9,856	6,631	4,434	5,300	5,290
Adjusted EBITDA	€ m	429	377	337	777	900

¹ The figures for 2017 have been restated

6.2.1 Fiscal year 2018: Key performance figures

Financial and strategic performance indicators

		2018	2017	Change in %
Cash flow from operating activities	€ m	827.6	-1,696.1	-
Free cash flow	€ m	-374.9	-2,789.0	-86.6
Equity ratio	%	15.8	15.1	2.4
Net debt	€ m	9,586.6	8,413.3	13.9
Internal financing capability	%	93.2	111.9	-16.7
Value added ²	€ m	32.1	151.2	-78.8
ROCE	%	6.5	7.3	-
Group net profit/loss ^{1,2}	€ m	334.2	2,054.1	-83.7
Earnings per share from Group net profit ¹	€	1.23	7.58	-83.7

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

² The figures 2017 have been restated.

6.2.2 Fiscal year 2018: Non-financial key performance figures



Customers and society goal dimension

	2018	2017	Change in %
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) ²	62	60	3.3
TOP LTIF ³	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 % ¹	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 Group⁴

	31.12.2018	31.12.2017	Change in %
Employees	21,775	21,352	2.0
Full-time equivalents ⁵	20,379	19,939	2.2

LTIF: Lost Time Injury Frequency

SAIDI: System Average Interruption Duration Index

¹ The figures for 2017 have been restated.

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).






⁴ Number of employees excluding apprentices/trainees and inactive employees.

⁵ Converted into full-time equivalents.

6.2.3 Fiscal year 2018: ROCE and value added

Group level

- › Decrease in value added to €32 m (2017: €151 m)
- › ROCE at 6.5 % compared to 7.3 % in the prior year
- › Increase in average capital employed

		 Sales		 Grids		 Renewable Energies		 Generation & Trading		 Other / Consolidation		Total	
		2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017
Value added to the EnBW Group by segment¹													
Adjusted EBIT incl. the adjusted investment result ²	€ m	220.3	262.8	768.4	686.8	123.7	164.9	-24.2	-27.0	-46.6	21.2	1,041.6	1,108.7
Average capital employed	€ m	1,037.0	836.8	7,019.8	5,919.2	3,667.4	3,276.9	2,139.1	2,242.4	2,190.0	2,844.6	16,053.3	15,146.1
ROCE	%	21.2	31.4	10.9	11.6	3.4	5.0	-1.1	-1.2	-	-	6.5	7.3
WACC	%	7.7	7.7	5.3	5.4	6.1	6.1	8.0	8.0	-	-	6.3	6.3
Value added	€ m	140.0	198.3	393.1	367.0	-99.0	-36.0	-194.7	-206.3	-	-	32.1	151.2






¹ The figures for the previous year have been restated.

² 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.

6.2.4 Fiscal year 2018: Segment reporting (1/2)

Segment reporting¹

in € m






	 Sales		 Grids		 Renewable Energies		 Generation & Trading		 Other / Consolidation		Total	
	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017
Revenue												
External revenue	7,061.4	7,354.3	3,215.4	7,471.8	477.5	507.5	9,856.2	6,631.1	7.0	9.3	20,617.5	21,974.0
Internal revenue	677.1	921.1	2,353.1	2,558.6	333.1	281.3	2,647.7	2,739.2	-6,011.0	-6,500.2	0.0	0.0
Total revenue	7,738.5	8,275.4	5,568.5	10,030.4	810.6	788.8	12,503.9	9,370.3	-6,004.0	-6,490.9	20,617.5	21,974.0
Earnings indicators												
Adjusted EBITDA	270.6	330.0	1,176.9	1,045.9	297.7	331.7	428.6	377.1	-16.3	28.3	2,157.5	2,113.0
EBITDA	232.6	317.8	1,120.0	1,025.3	285.1	622.5	407.9	1,703.1	44.0	83.7	2,089.6	3,752.4
Depreciation and amortisation	-68.4	-68.2	-457.5	-435.4	-173.7	-160.4	-471.1	-422.8	-29.3	-27.4	-1,200.0	-1,114.2
Impairment losses	-2.5	-8.6	0.0	-0.8	-0.8	-13.5	-9.4	-111.3	-1.1	0.0	-13.8	-134.2
Net profit/loss from entities accounted for using the equity method	1.1	3.7	22.2	29.8	-48.3	-4.4	0.9	-0.2	0.0	14.4	-24.1	43.3
Significant non-cash items	-11.0	31.2	51.1	27.2	4.8	2.8	30.0	0.6	-7.9	-14.1	67.0	47.7

¹ The figures for 2017 have been restated

6.2.4 Fiscal year 2018: Segment reporting (2/2)

Segment reporting¹

in € m

Assets and liabilities	 Sales		 Grids		 Renewable Energies		 Generation & Trading		 Other / Consolidation		Total	
	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017
Capital employed	1,009.4	1,004.6	7,213.9	6,534.8	3,843.2	3,501.9	2,164.4	2,293.0	2,714.6	2,021.0	16,945.5	15,355.3
Of which carrying amount of entities accounted for using the equity method	(188.2)	(198.8)	(402.1)	(386.0)	(863.4)	(670.2)	(146.5)	(133.6)	(0.0)	(0.0)	(1,600.2)	(1,388.6)
Capital expenditure on intangible assets and property, plant and equipment	91.5	83.3	959.3	784.0	138.9	417.3	160.3	115.7	19.5	18.9	1,369.5	1,419.2

¹ The figures for the previous year have been restated

6.2.5 Fiscal year 2018: Internal financing capability

		2018	2017	Change in %
Retained cash flow (RCF)	€ m	999.1	3,050.3	-67.2
Adjusted retained cash flow ¹	€ m	1,199.1	1,529.5	-21.6
Net (cash) investment	€ m	1,287.1	1,367.1	-5.9
Internal financing capability	%	93.2	111.9	-16.7

- › **RCF: Cash-relevant earnings after settlement of stakeholder needs (interest payments, taxes, dividends)**
- › **Adjusted retained cash flow¹: Adjusted for the following effects of the nuclear fuel tax refund**
 - › Will be used for debt repayment of around €836 m in 2018
 - › Will be used for additional investment of €685 m from 2018 to 2020
- › **Internal financing capability:**
 - › Key performance indicator for the Group's ability to finance its capital expenditures (net cash investment) internally without the need to raise additional capital
 - › In 2018 the value for internal financing capability was slightly below the target value of ≥100%.

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

6.3.1 Half-year 2019: Financial and strategic performance indicators

		1.1. – 30.6.2019	1.1. – 30.6.2018	Change in %
External revenue ¹	€ m	11,529.0	10,073.0	14.5
Adjusted EBITDA	€ m	1,276.0	1,141.0	11.8
Share of adjusted EBITDA accounted for by Sales	€ m / %	108.8/8.5	158.9/14.0	-31.5/-
Share of adjusted EBITDA accounted for by Grids	€ m / %	719.8/56.4	684.9/60.0	5.1/-
Share of adjusted EBITDA accounted for by Renewable Energies	€ m / %	204.9/16.1	164.8/14.4	24.3/-
Share of adjusted EBITDA accounted for by Generation and Trading ¹	€ m / %	261.2/20.5	139.4/12.2	87.4/-
Share of adjusted EBITDA accounted for by Other/Consolidation	€ m / %	-18.7/-1.5	-7.0/-0.6	-/-
EBITDA	€ m	1,071.1	1,184.7	-9.6
Adjusted EBIT	€ m	572.3	549.4	4.2
EBIT	€ m	365.7	586.8	-37.7
Adjusted Group net profit ²	€ m	510.0	328.3	55.3
Group net profit ²	€ m	286.2	346.2	-17.3
Earnings per share from Group net profit/loss ²	€	1.06	1.28	-17.3
Retained cash flow	€ m	514.0	333.5	54.1
Total investments	€ m	1,528.6	574.3	-

¹ The figures for the previous year have been restated.

² In relation to the profit/loss attributable to the shareholders of EnBW AG.

6.3.2 Half-year 2019: Non-financial performance indicators¹

	1.1. – 30.6.2019	1.1. – 30.6.2018	Change in %
Customers goal dimension			
Customer Satisfaction Index for EnBW/Yello ²	116/161	130/150	-10.8/7.3
SAIDI (electricity) in min/year	8	8	-
Employees goal dimension			
LTIF ³	2.1	2.5	-16.0
Employees of the EnBW group^{4,5}			
Employees	22,488	21,397	5.1
Full-time equivalents	21,086	19,999	5.4

LTIF: Lost Time Injury Frequency

SAIDI: System Average Interruption Duration Index

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

² The figures for the key performance indicators Reputation Index, Employee Commitment Index (ECI), installed output of renewable energies (RE) in GW and the share of the generation capacity accounted for by RE in % and CO₂ intensity are solely collected at the end of the year.

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).

⁴ Number of employees excluding apprentices/trainees and inactive employees.

⁵ The number of employees for the ITOs (ONTRAS Gastransport GmbH, terranets bw GmbH and TransnetBW GmbH) is only updated at the end of the year; for intervals of less than a year, the number of employees from 31/12/2018 is carried forward.

6.4.1 Financial and non-financial KPIs and targets: Finance and strategy goal dimensions

Goal	KPI	2018	Target 2020	
Finance				
Secure profitability	Adjusted EBITDA in € bn	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.
Strategy¹				
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 is becoming 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.

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

6.4.2 Financial and non-financial KPIs and targets: Other goal dimensions



Goal	KPI	2018	Target 2020	
Customers & 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.
Employees				
Employee commitment	Employee Commitment Index (ECI) ¹	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 ²	2.3	≤previous year	The number of accidents at work and the resulting days of absence remains stable or is falling.
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.

LTIF: Lost Time Injury Frequency

SAIDI: System Average Interruption Duration Index

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).



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7.1 Financial objectives and financing strategy



EnBW's financial objectives

- > Optimisation of financing
- > Guaranteeing sufficient level of liquidity
- > Limiting interest rate risks
- > Maintaining a strong credit standing



EnBW's financing strategy

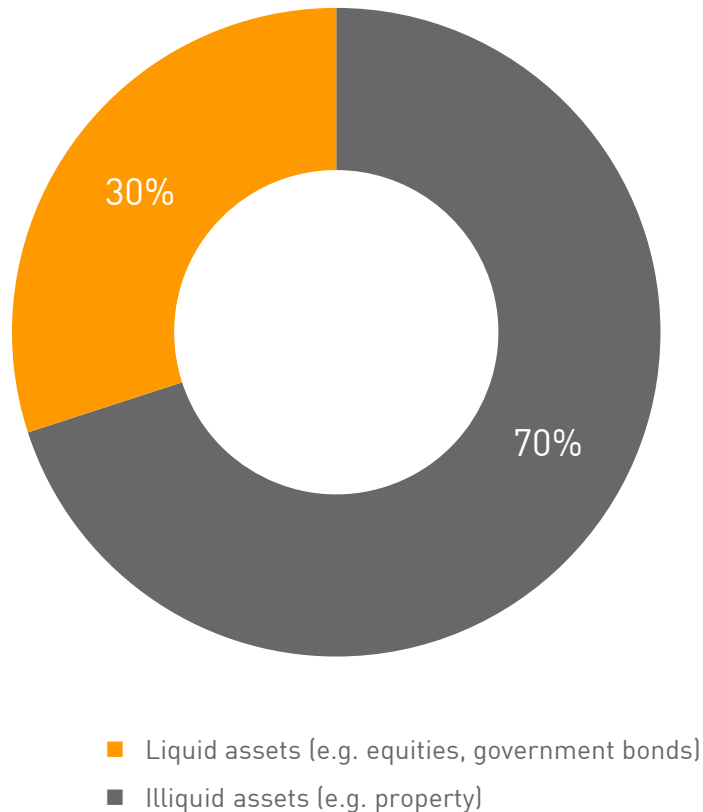
- > Multi-pillar strategy offering maximum flexibility in financing
- > Diversified market approach
- > Well-balanced spread maturity profile with preference for long-term financing for the purpose of risk mitigation
- > Hybrid capital to support senior debt holders
- > Investments limited to RCF and thus managing net financial debt
- > Sophisticated Asset Liability Management to cover future pension and nuclear provisions and limit burden on OCF



7.2.1 Financial Asset Management: Covering the Group's pension and nuclear provisions

— EnBW

Strategic asset allocation



- To meet EnBW's pension and nuclear obligations:
- > Active management of long-term financial assets
 - > Diversification within the permitted nine asset classes
 - > Effects on the balance sheet as well as income statement are taken into account



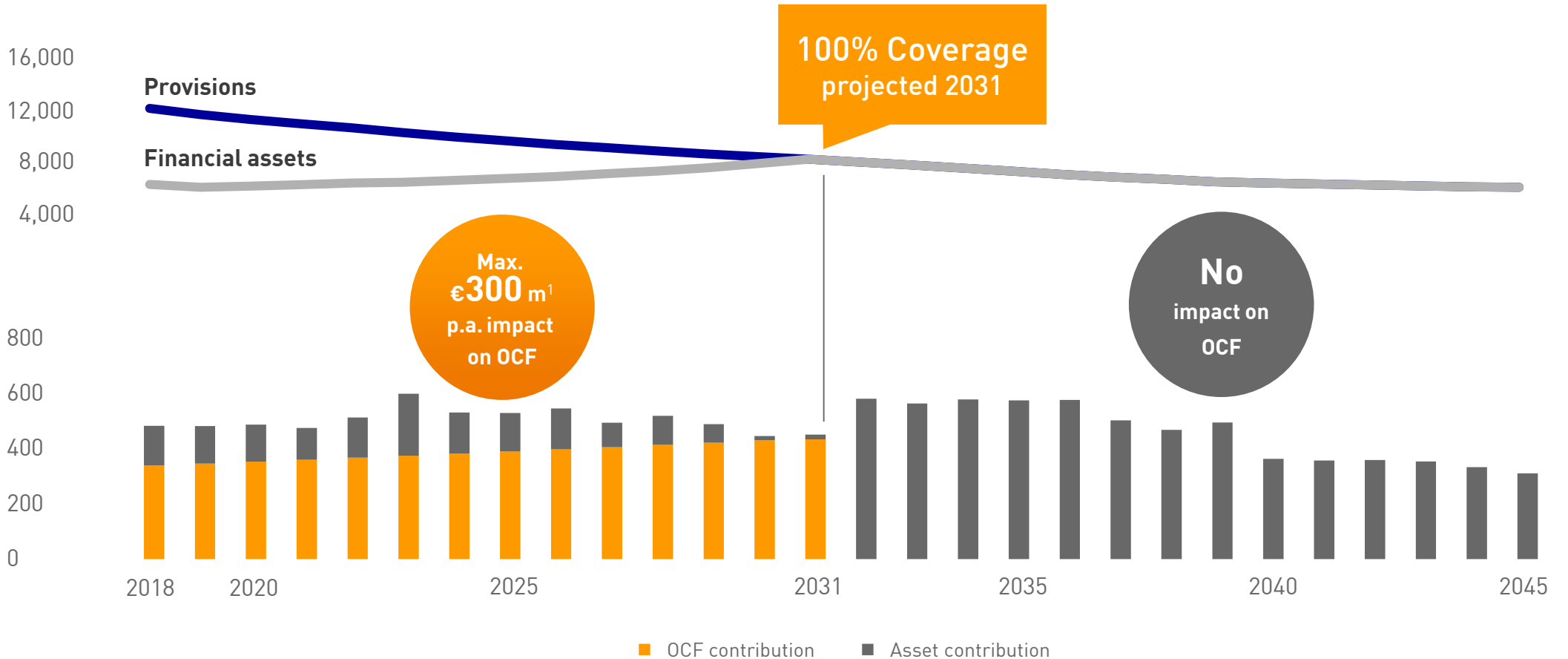
- To reach investment targets:
- > Risk-optimised investments with a performance in line with market trends
 - > Ensuring the functionality of EnBW's Asset Liability Management Model at the same time

7.2.2 Asset Management: Asset Liability Management Model EnBW nuclear and pension provisions still covered



EnBW's cash flow-based model

in € m

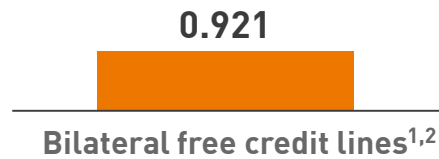
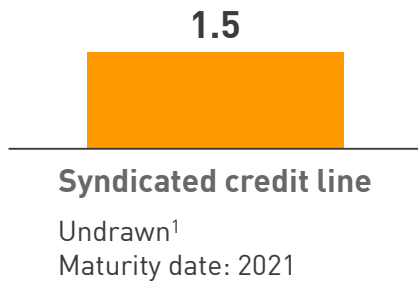
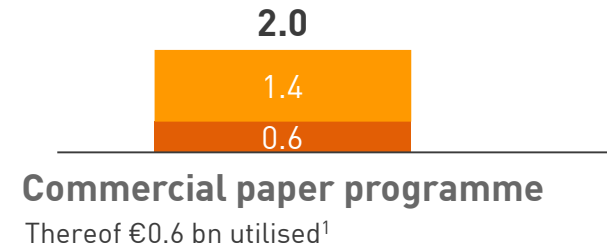
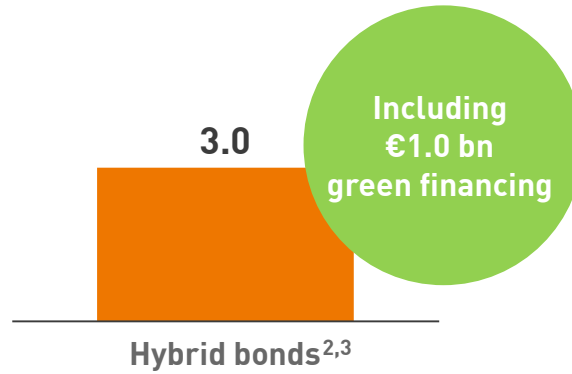
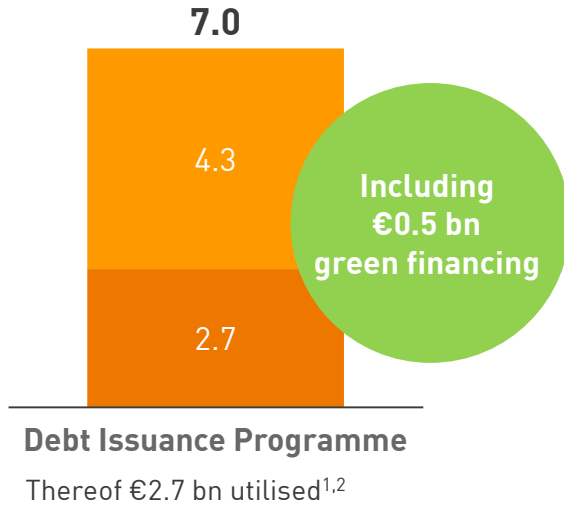


¹ Adjusted for inflation

OCF: Operating cash flow

7.3 EnBW has a flexible access to various financing sources

in € bn



Project financing and low-interest loans from the EIB

¹ As of 30 June 2019
² Rounded figures
³ As of 5 August 2019

7.4.1 Fixed income: EnBW's senior bonds

Issuer: EnBW International Finance B.V.

Bond Type	CCY	Denomination	Volume (mn)	Term (years)	Issue date	Maturity	Coupon (%)	Interest date	Security No. (WKN)	ISIN No.	Stock Exchange
Senior	CHF	5,000	100	10	12.7.2013	12.7.2023	2.250	1.7.	A1HM5N	CH0217677654	S
Senior	€	1,000	500	20	9.12.2004	16.1.2025	4.875	16.1.	A0DG9U	XS0207320242	L
Senior	€	1,000	500	12	4.6.2014	4.6.2026	2.500	4.6.	A1ZJ9E	XS1074208270	L
Green	€	1,000	500	15	31.10.2018	31.10.2033	1.875	31.10.	A2RTNC	XS1901055472	L
Senior	€	100,000	100	20	13.6.2014	13.6.2034	2.875	13.6.		Private Placement	
Senior	YEN	100,000,000	20,000	30	16.12.2008	16.12.2038	3.880	16.6. & 16.12.		Private Placement	
Senior	€	1,000	600	30	7.7.2009	7.7.2039	6.125	7.7.	A1AJTV	XS0438844093	L
Senior	€	100,000	100	25	16.6.2014	16.6.2039	3.080	16.6.		Private Placement	
Senior	€	100,000	75	22	15.1.2019	21.1.2041	2.080	21.1.		Private Placement	
Senior	€	100,000	50	30	1.8.2014	1.8.2044	2.900	1.8.		Private Placement	

as of 30 June 2019

L: Luxembourg, S: Switzerland, CCY: Currency

7.4.2 Fixed income: EnBW's hybrid bonds

Issuer: EnBW Energie Baden-Württemberg AG

Bond Type	CCY	Denomination	Volume (mn)	Term (years)	Issue date	Maturity	Coupon (%)	Interest date	Security No. (WKN)	ISIN No.	Stock Exchange
Hybrid	€	1,000	1,000 ²	62	18.3.2014	2.4.2076	3.625	2.4.	A11P78	XS1044811591	F, L
Hybrid	USD ¹	2,000	300 ²	60.5	5.10.2016	5.4.2077	5.125	5.4.	A2BN7K	XS1498442521	L
Hybrid	€	1,000	725 ²	60.5	5.10.2016	5.4.2077	3.375	5.4.	A2BPDF	XS1405770907	L
Green Hybrid	€	100,000	500	60	5.8.2019	5.8.2079	1.625	5.8.	A2YPEQ	XS2035564629	L
Green Hybrid	€	100,000	500	60.25	5.8.2019	5.11.2079	1.125	5.11.	A2YPEP	XS2035564975	L

as of 30 June 2019

L: Luxembourg, F: Frankfurt, CCY: Currency

¹ Regulation S: These Notes are not offered or sold within the United States or to, or for the account or benefit of, U.S. persons

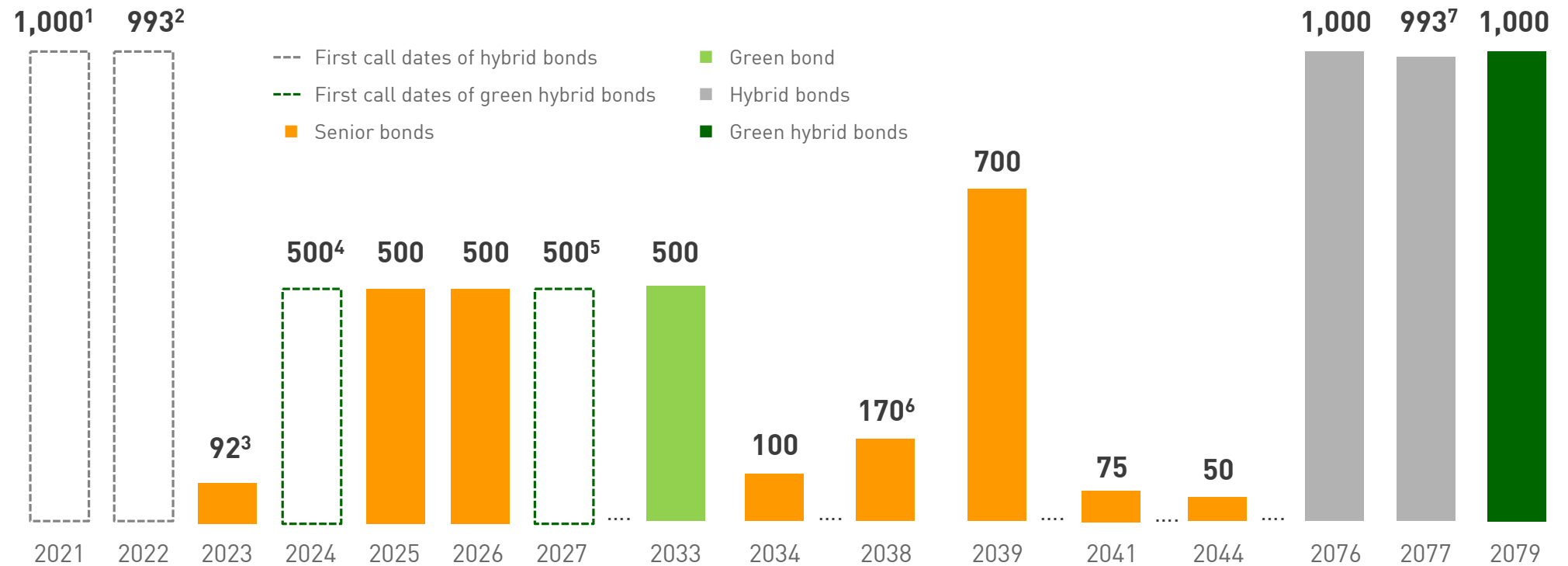
² Hybrid bond coupon initially



7.4.3 Fixed Income: Maturities of EnBW's bonds



in € m



¹ First call date: hybrid maturing in 2076

² First call date: hybrid maturing in 2077; includes USD 300 million (swap in €), coupon before swap 5.125%

³ CHF 100 million, converted as of the reporting date of 5.8.2019

⁴ First call date: hybrid maturing in 2079

⁵ First call date: hybrid maturing in 2079

⁶ JPY 20 billion (swap in €), coupon before swap 5.460%

⁷ Includes USD 300 million, converted as of 5.10.2016



7.4.5 Fixed income: Credit Ratings



Rating: Sound financial policy has allowed EnBW to maintain A category ratings



A3 / negative
14 June 2019

- > Leadership position as vertically integrated utility within Baden-Wuerttemberg
- > 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 strategy
- > Historically balanced financial policy and demonstrated commitment to maintaining a robust credit quality
- > Evolving operating environment in Germany for conventional generation and challenging environment in retail markets
- > Certain execution risks relating to large investment programme
- > Anticipated erosion of financial flexibility following acquisitions of VALECO a and Plusnet in 2019
- > Strong shareholder support



**STANDARD & POOR'S
RATINGS SERVICES**
McGRAW HILL FINANCIAL

A- / stable
26 July 2019

- > Increasing share of operating income from low-risk regulated activities and long-term contracted renewables
- > Well-diversified sources of cash flow
- > Geographical diversification in the renewables segment in Taiwan, the U.S., and France
- > Difficult operating environment in Germany for conventional power generation
- > Still significant exposure to volatile and commodity-driven wholesale power prices
- > Debt increase following the integration of new acquisitions, in line with the company's strategy
- > Prudent financial policy
- > Moderate likelihood of government support



A- / stable
28 September 2018

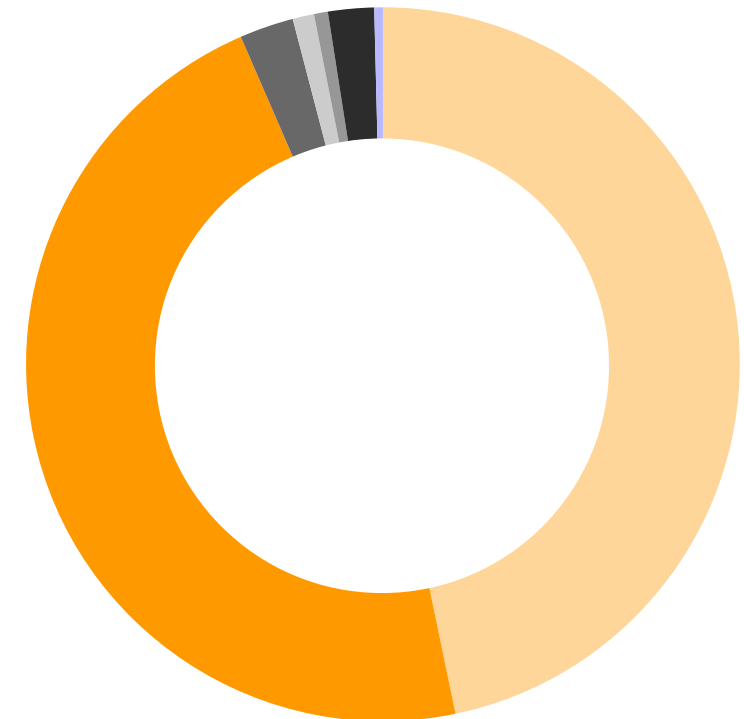
- > Continued evolution towards a more regulated and contracted business profile
- > High earnings visibility in grids and renewables partly offset by residual nuclear decommissioning risk; payment of €4.8 bn for transferring responsibility for nuclear waste storage has substantially reduced these risk
- > Average forecast credit metrics are generally stronger than peers, with some exceptions with respect to funds from operations (FFO) fixed charge cover
- > If the share of regulated EBITDA exceeds 50% on a sustained basis, Fitch may apply a one-notch uplift to the senior unsecured rating



7.6.1 Equity capital market: Shareholder structure

Shareholder structure¹

OEW Energie-Beteiligungs GmbH	46.75%
NECKARPRI-Beteiligungsgesellschaft mbH ²	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%



Stock exchange information

ISIN/security identification no.	DE0005220008/ 522000
Stock exchange abbreviation	Bloomberg EBK GY/reutersEBK/EBKG.DE
Transparency level	General Standard
Indices	General All Share, DAX sector All Utilities, CDAX
Number of shares	276,604,704
Class of share	Ordinary no-par value bearer shares
Stock markets	Regulated market: Frankfurt and Stuttgart Over-the-counter trading: Berlin and Munich

¹ May not add up to 100% due to rounding; Figures as of 31 December 2018

² 100% subsidiary of NECKARPRI GmbH, which is a 100% subsidiary of the State of Baden-Württemberg

7.6.2 Equity capital market: EnBW share in figures¹

		2018	2017	2016	2015	2014
Annual high	€	34.00	29.63	24.25	27.00	28.39
Annual low	€	25.40	20.00	18.29	20.21	24.50
Closing price	€	29.20	28.78	19.69	20.62	25.60
Number of shares outstanding ² as of 31 December	Thousand shares	270,855	270,855	270,855	270,855	270,855
Market capitalisation as of 31 December	€ bn	8.1	7.8	5.3	5.6	6.9
Stock exchange trade (total)	Number of shares	86,190	157,021	80,173	125,440	157,809
Stock exchange trade (daily average)	Number of shares	435	604	391	568	711
Distribution ³	€ m	176	135.4	0.00	149.0	186.9
Dividend per share	€	0.65	0.50	0.00	0.55	0.69



¹ Share price based on closing price trading the EnBW share in XETRA

² Total number of shares 276.605 million shares

³ Distribution in terms of eligible shares as of year-end.



7.7 Key financial indicators



	Securing Profitability	Portfolio Transformation Grids and Renewables with ~70% adj. EBITDA contribution by 2020	Adj. EBITDA Target 2020 €2.3-2.5 bn Adj. EBITDA Target 2025 €3.0-3.3 bn	
	High Level of Financial Discipline	Internal Financing Capability Retained Cash Flow minus Net Investments >0	Coverage of pension and nuclear provisions Asset Liability Management Model Cap on operating cash flow of €300 m p.a.	
	Increasing Group Value	ROCE > WACC 8.5-11.0	Access to Capital Markets Solid investment grade ratings	Sustainable Dividend Level Payout ratio of 40%-60% (medium-term target)



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8.1 Financial calendar



8 November 2019

Quarterly Statement January to September 2019

26 March 2020

Integrated Annual Report January to December 2019

12 May 2020

Annual General Meeting

15 May 2020

Quarterly Statement January to March 2020

30 July 2020

Six-Monthly Financial Report January to June 2020

13 November 2020

Quarterly Statement January to September 2020



8.2 Contact details



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Service-focused Investor Relations

- > Investor Relations strives to meet the information requirements of investors, analysts, rating agencies and banks in a timely manner.
- > Active communication and ongoing dialogue with the target groups enable us to underscore EnBW's potential for generating value added.
- > As only a small proportion of our shares are in free float, our investor relations activities concentrate on fixed-income investors and credit analysts on the buy and sell side.
- > EnBW is aware of the importance of investor relations. The interest of our investors is always of relevance when taking strategic decisions.



8.3 Important links



EnBW group online	www.enbw.com
EnBW Investor Relations	www.enbw.com/investors
EnBW Overview Board of Management	https://www.enbw.com/company/the-group/about-us/executive-board/
EnBW Overview Supervisory Board	https://www.enbw.com/company/the-group/about-us/supervisory-board/
EnBW Strategy	https://www.enbw.com/company/investors/strategy/group-strategy.html
EnBW Renewables Energies	https://www.enbw.com/renewable-energy/renewables/
Financial Calendar	https://www.enbw.com/company/investors/events/finance-calender/
Six monthly report 2019	https://www.enbw.com/enbw_com/downloadcenter/quarterly-statements/six-monthly-financial-report-january-to-june-2019.pdf
Integrated Annual Report 2018	https://www.enbw.com/enbw_com/bericht/bericht_2018/downloads/integrated-annual-report-2018.pdf
Financing facilities	https://www.enbw.com/company/investors/strategy/
Maturities of our bonds	https://www.enbw.com/company/investors/bonds/index-en.html
EnBW current ratings	https://www.enbw.com/company/investors/bonds/ratings.html

8.4 Important note

Unless indicated otherwise, all data contained hereinafter refers to the EnBW Group and is calculated according to IFRS.

No offer or investment recommendation

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Future-oriented statements

This presentation contains future-oriented statements that are based on current assumptions, plans, estimates and forecasts of the management of EnBW. Such future-oriented statements are therefore only valid at the time at which they are published for the first time. Future-oriented statements are indicated by the context, but may also be identified by the use of the

words “may”, “will”, “should”, “plans”, “intends”, “expects”, “believes”, “assumes”, “forecasts”, “potentially” or “continued” and similar expressions.

By nature, future-oriented 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 future-oriented statements made in this presentation. Therefore it cannot be guaranteed nor can any liability be assumed otherwise that these future-oriented statements will prove complete, correct or precise or that expected and forecast results will actually occur in the future.

No obligation to update the information

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