Investor Update 2019

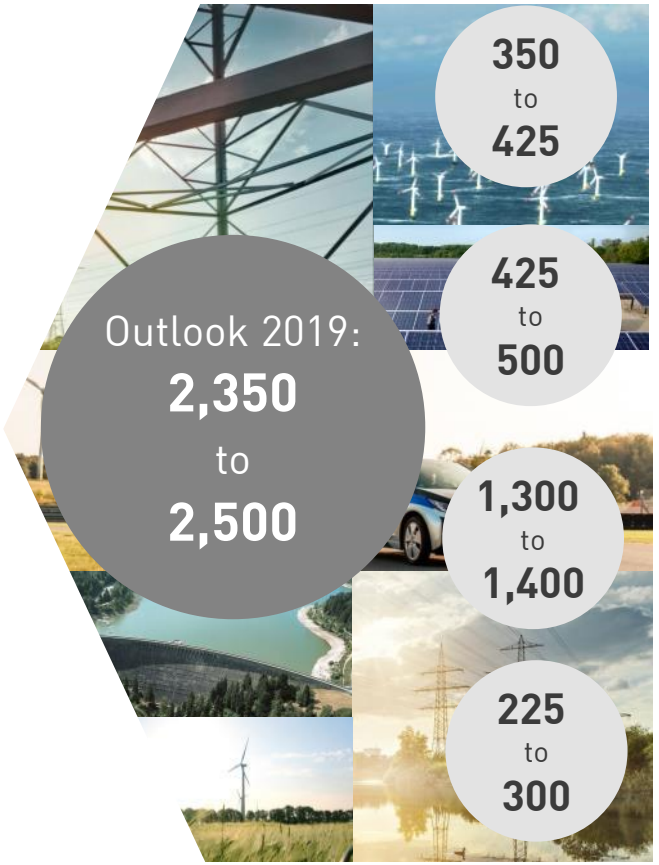
April 2019

EnBW

Portfolio transformation successful – adjusted EBITDA target likely to be met in 2019 already

	2012		2020
Generation and Trading	1.2	-80%	0.3
Renewable Energies	0.2	+250%	0.7
Grids	0.8	+25%	1.0
Sales	0.2	+100%	0.4
	2.4		2.4

Adjusted EBITDA in € bn

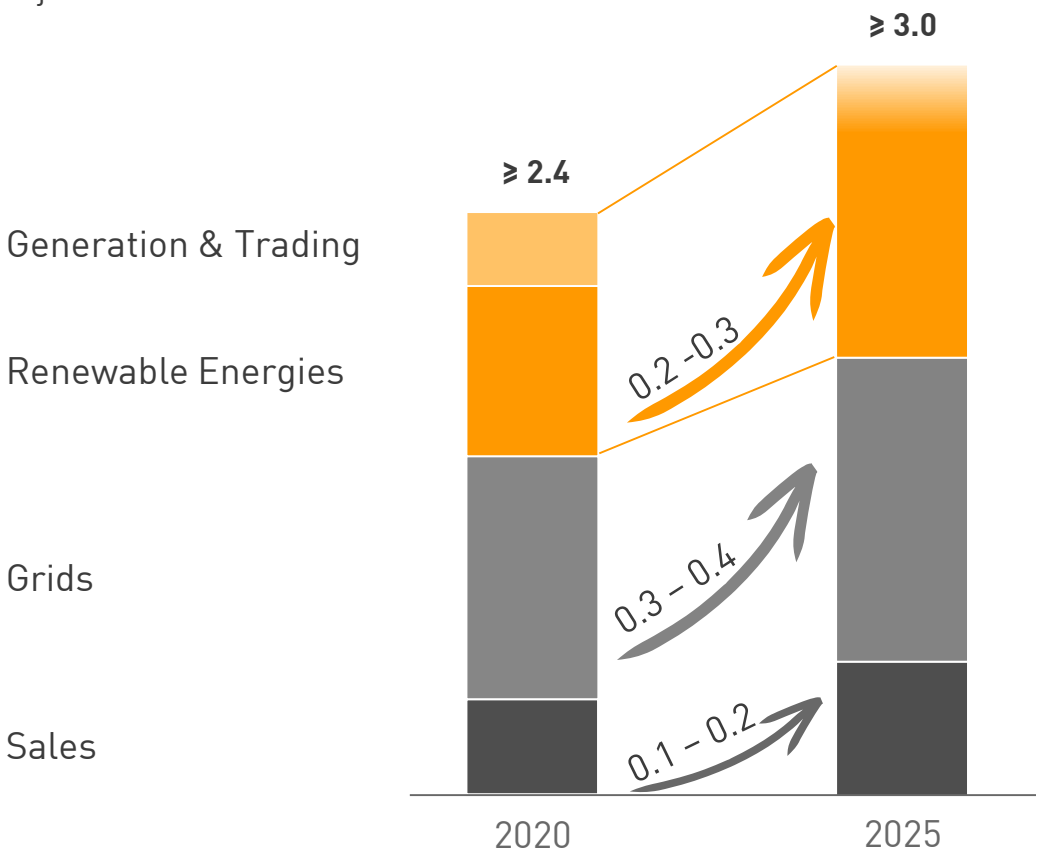


Adjusted EBITDA in € m

Transformation phase 2013 - 2020 followed by growth phase 2021 - 2025

Development of earnings

Adjusted EBITDA in € bn



1 Sustainable power infrastructure, i.a.

- Expansion of renewable energies (e.g. onshore and offshore wind to ≥ 3,500 MW, portfolio development of large photovoltaic projects)
- Selective international business activities
- Active design of decarbonisation

2 System-critical infrastructure, i.a.

- Profitable growth in the distribution grid (e.g. grid integration of e-mobility and decentralised energy generation)
- Significant expansion of electricity transmission grid
- Growth of network-related services (grid)

3 Smart infrastructure for customers, i.a.

- Reorganisation and digitisation of B2C sales as well as transformation to customer infrastructure business
- Expansion of the solution portfolio (e.g. e-mobility, photovoltaic / battery and heat)
- New infrastructure-related business areas beyond energy (e.g. urban infrastructure and public security)

SuedLink is the largest infrastructure project of the Energiewende

TRANSNET BW

Cooperation with TenneT

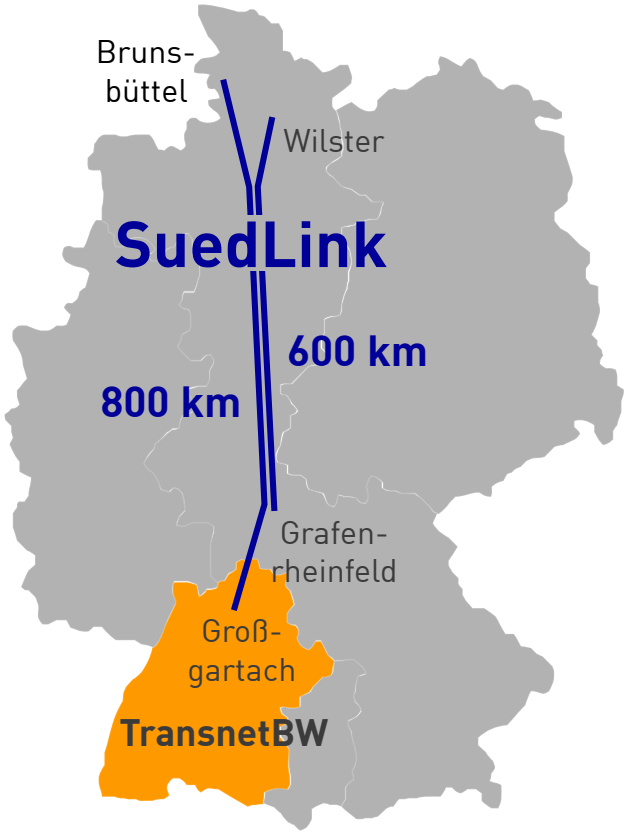
Main investments expected to start in 2020

2025 Expected date of commissioning

Rated output: 2 x 2 GW high voltage direct current transmission

Voltage level: Planned ±320 kV DC

€10 bn total invest



Competitive edge in sales mainly based on smart infrastructure solutions

E-mobility

- EnBW as full service provider: expansion of electricity supply and charging infrastructure
- Cooperations to extend fast-charging infrastructure
- EnBW mobility+ App tripling charging points from 8,000 to 22,000 in 2018
- SAFE project together with 77 municipalities, utilities and communities to extend charging infrastructure in Baden-Wuerttemberg

Contracting

- Optimised offer process, customer proximity and response times
- E.g. energy interconnections between industrial companies and local authorities
- Cogeneration and utilisation of waste heat leading to lower carbon emissions and energy cost

Sales

Broadband

- Supporting communities in planning and setting up infrastructure
- Focus on cost efficiency, high implementation speed and customer satisfaction
- E.g. RBS wave (subsidiary of NetCom) as general project planner for optical-fibre network

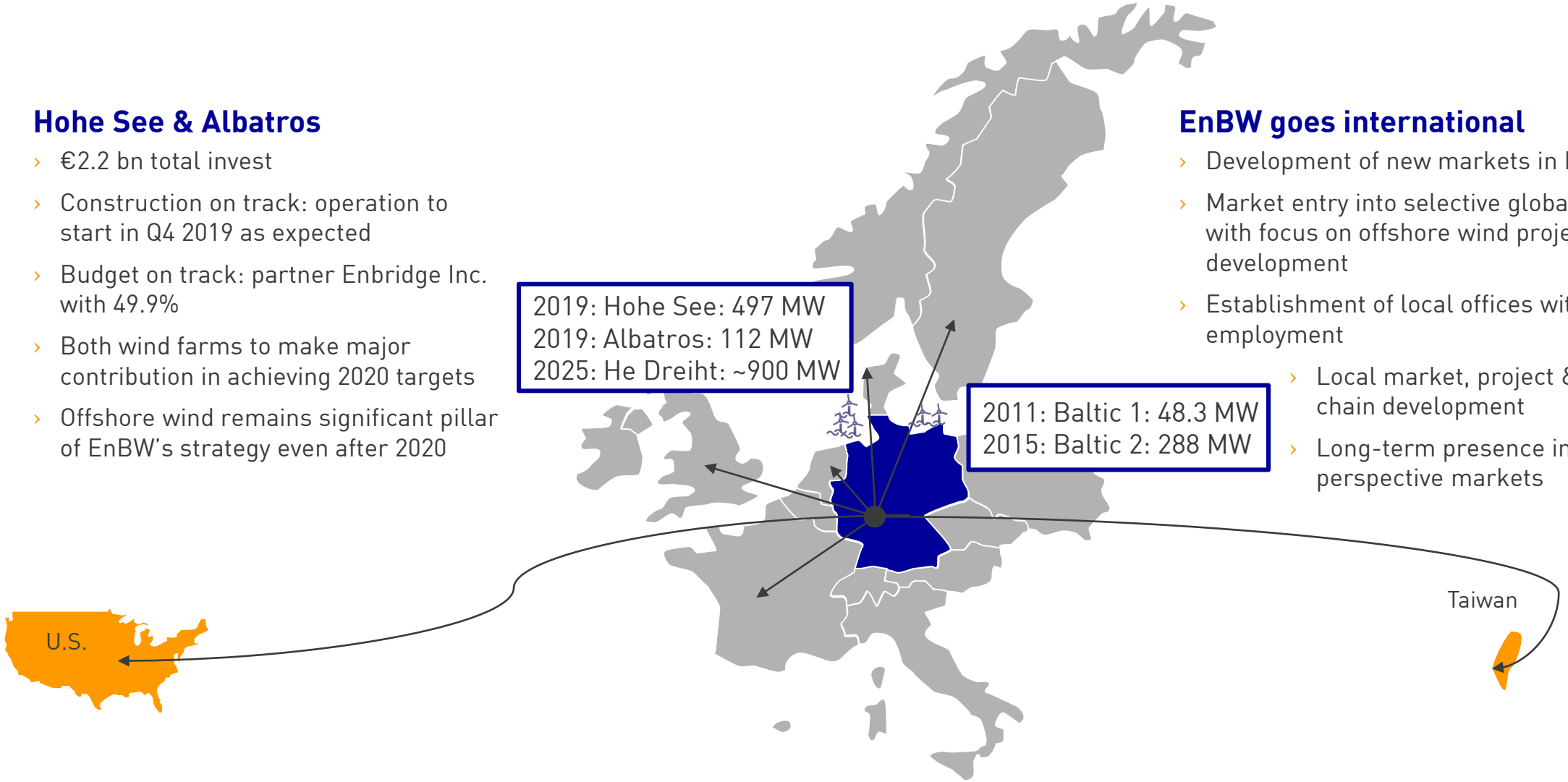
EnBW solar+

- Solar system to produce and store electricity
- Cooperation with SENEC (acquired in 2018): EnBW now full-range provider of smart home energy solutions
- SENEC sold 20,000 systems to make them one of the Top German providers

EnBW intends to become a multinational specialist for offshore wind power

Hohe See & Albatros

- €2.2 bn total invest
- Construction on track: operation to start in Q4 2019 as expected
- Budget on track: partner Enbridge Inc. with 49.9%
- Both wind farms to make major contribution in achieving 2020 targets
- Offshore wind remains significant pillar of EnBW's strategy even after 2020



EnBW goes international

- Development of new markets in Europe
- Market entry into selective global markets with focus on offshore wind project development
- Establishment of local offices with local employment
  - Local market, project & supply chain development
  - Long-term presence in perspective markets

Further expansion of onshore portfolio and development of solar portfolio as third pillar

Onshore wind:
~718 MW in operation; target of doubling onshore and offshore capacity to over 3.5 GW by 2025

Photovoltaics:
Development of a portfolio of large projects

- 200 MW by 2020
- 600-800 MW by 2025

Sweden

Acquisition of 7 onshore wind farms with **105 MW** in 2018

Brandenburg (Germany)

Building of **largest** solar project in Germany with **175 MW** and first project **without EEG funding** (FID in 2019)

France

EnBW selected as exclusive bidder for the acquisition of **Valeco** Group in March 2019

- **276 MW wind onshore** and **56 MW photovoltaics**
- Project **pipeline of 1,700 MW**

GROUPE VALECO
Renewable Energy Producer

Wide range of activities offsetting declining physical generation portfolio

Generation portfolio

Low-carbon generation

- EnBW's generation fleet getting smaller
- 1,706 MW CO_2 intensive installed capacity already transferred to grid reserve

Fuel switch

- Energiewende also in the heat sector
- E.g. combined heat and power plant in Stuttgart-Gaisburg with 30 MW electrical and 205 MW thermal capacity

Nuclear phase out

- 2019: Philippsburg 2
- 2022: Neckarwestheim II

Management of EnBW's outright position

First long-term power purchase agreement

- PPA for subsidy-free 85 MW solar park with Energiekontor in 2019
- Fixed price/15 years

EnBW gas trading also active in international LNG business

- Expansion of trading business in cooperation with VNG
- Acquisition of 2 ship cargoes (each 1 TWh)

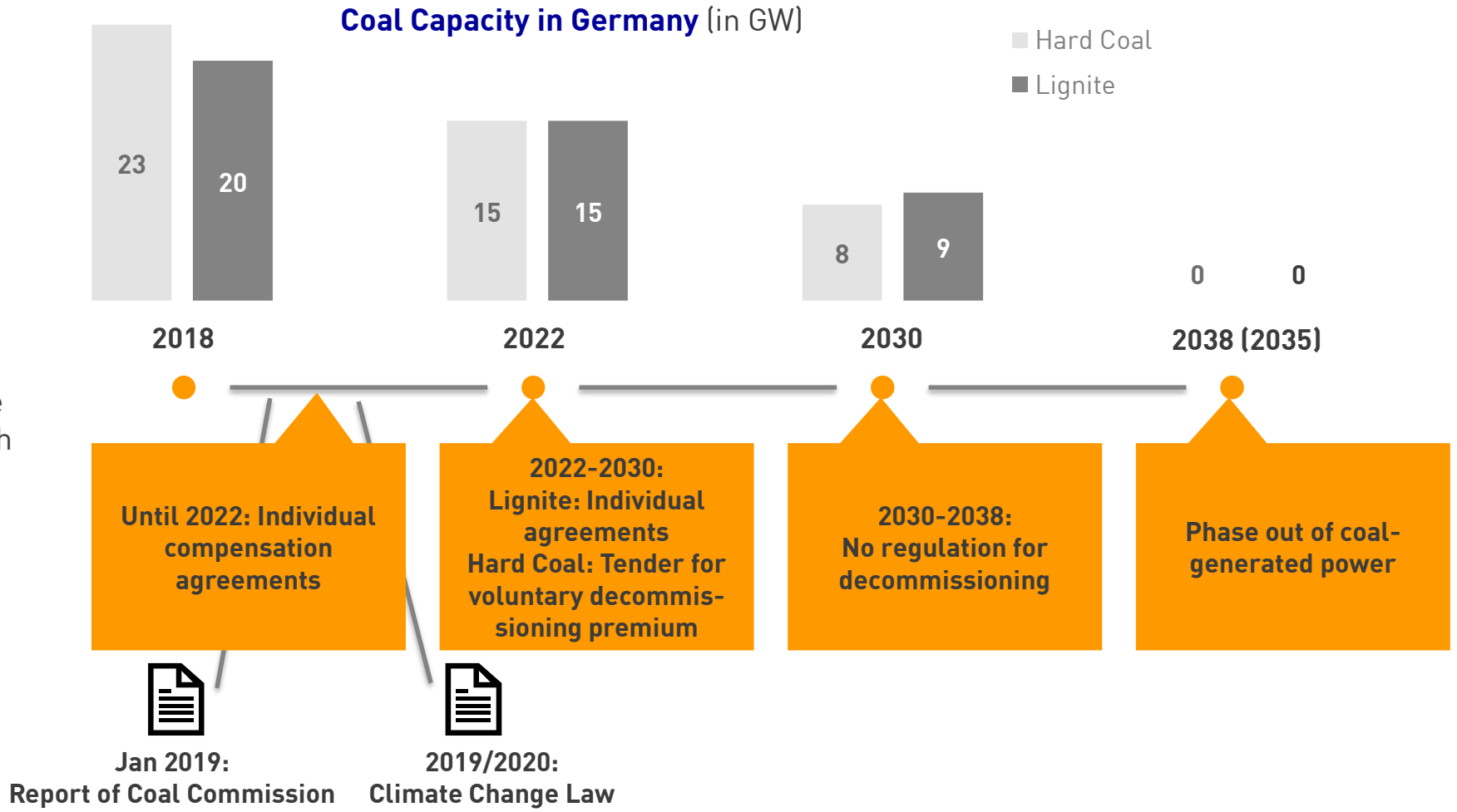
Gradual reduction of physical position being substituted by contracts

No immediate effect by suggestions of coal commission due to EnBW´s fleet structure

EnBW

Implications on EnBW

- Moderate **wholesale price** effect expected (2-3 €/MWh in 2030)
- **No** short/medium-term **effect on EnBW plants** due to system relevance or high efficiency
- Potential **fuel switch subsidy** to build highly efficient **district heating** plants



Overview German power plants / Source: Bundesnetzagentur: https://www.bundesnetzagentur.de/EN/Areas/Energy/Companies/SecurityOfSupply/GeneratingCapacity/PowerPlantList/PubliPowerPlantList_node.html

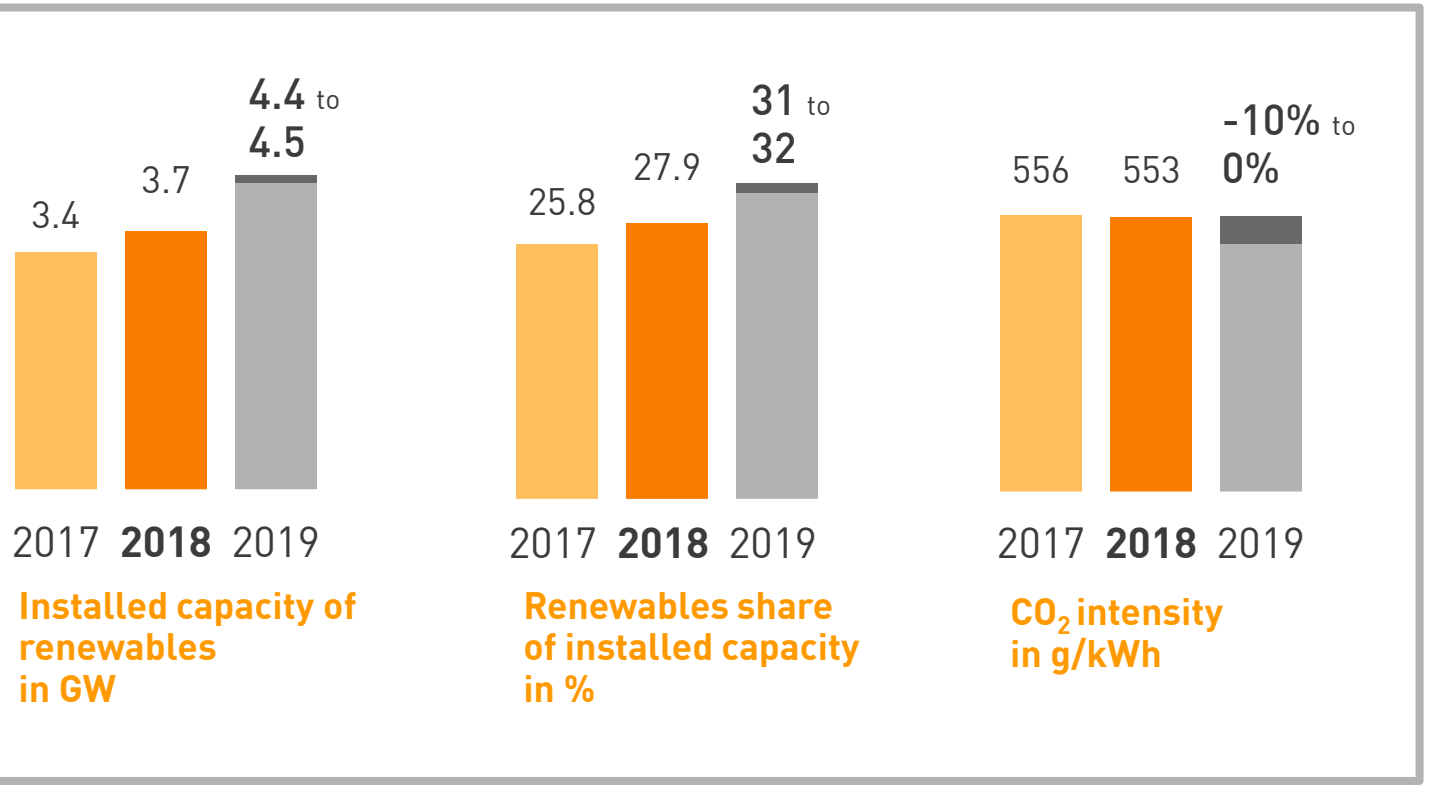
Sustainable business model reflected in EnBW's key performance indicators

Sustainability Dimensions

- Economic
- **Environmental**
- Social/employees

Finance Dimensions

Strategy Dimensions



Financing follows strategy - corporate financing based on sustainable products

Issuance of inaugural **Green Bond** on 31 Oct 2018

- €500 m issue size
- 15 years maturity
- 1.875% coupon

Green Financing underpins strategy

- Transformation towards 70% l**ow-risk** earnings in 2020
- **Renewables** and smart **infrastructure** as core element of strategy
- Integral **sustainability** in business model

- **Use of proceeds[1]: Asset categories**

Offshore wind

Onshore wind

Solar

E-mobility

Renewable energy: 98% Portfolio share

Wind: 93% Portfolio share

Solar: 5% Portfolio share

Clean transportation: 2% Portfolio share

[1] SPO ISS-oekom, 10 October 2018: Verification of the sustainability quality of the first Green Bond by EnBW

Infrastructure investments add well to EnBW's business model

€1.8 bn investment

2018

Grids, almost €1 bn

- Expansion of electricity grids
- Construction of the EUGAL gas pipeline
- Electromobility and smart grids

Renewables, almost €500 m

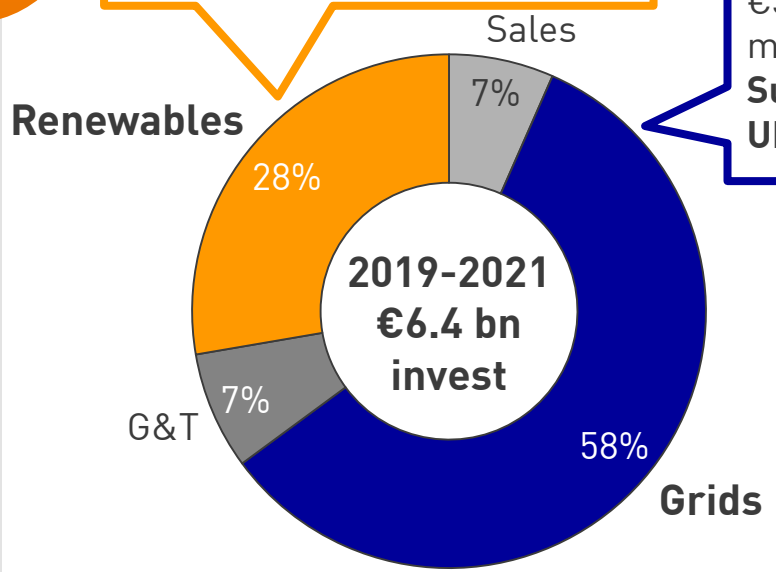
- Onshore wind farms in Germany and Sweden

~€0.5 bn divestments

- Primarily sale of VNG Norge (E&P business)

€1.8 bn
Offshore wind **Hohe See** & **Albatros**, Onshore-Wind & PV

€3.7 bn mainly in **SuedLink** & **ULTRANET**



~€1 bn divestments

- Participation models in onshore sector
- Disposal of the remaining minority share in EWE

€12 bn investment

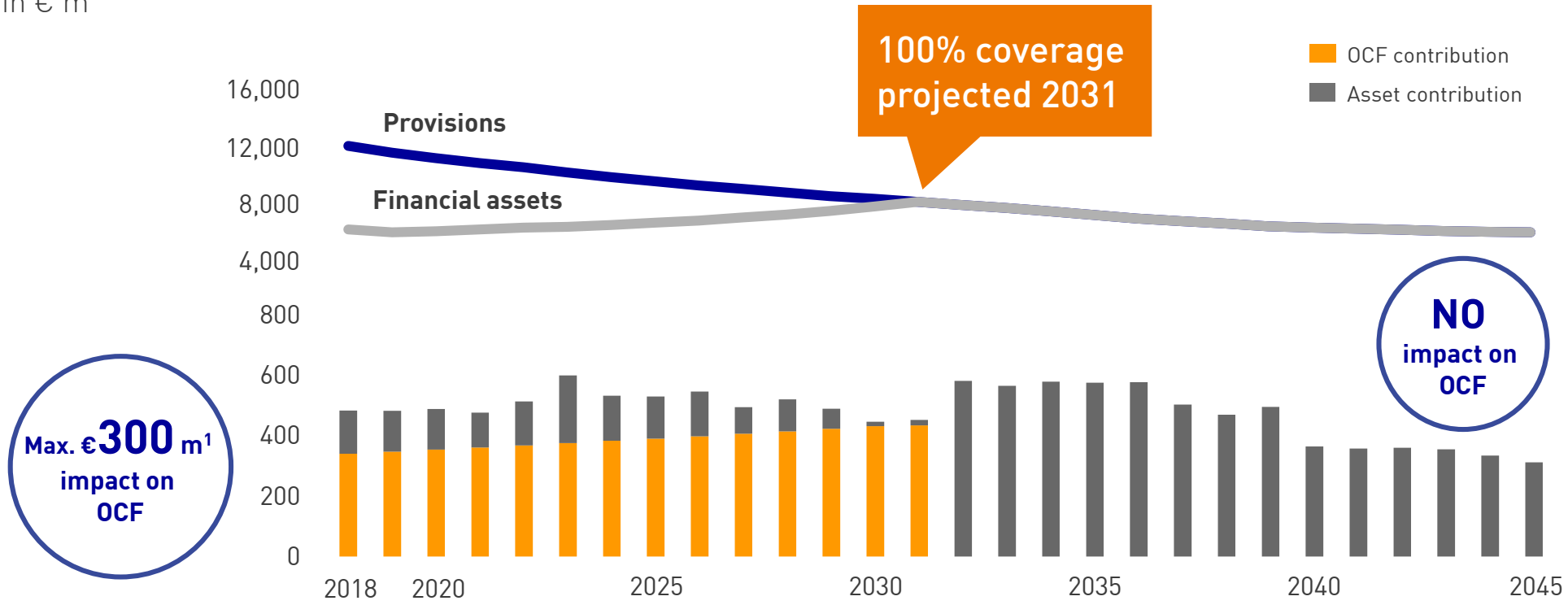
2021-2025

- ~35% Sustainable power infrastructure
- ~50% System-critical infrastructure
- ~15% Smart infrastructure for customers

Internal financing capability and ALM model express EnBW's high financial discipline

EnBW's CF-based Asset Liability Model

in € m



[1] Adjusted for inflation

Diversified and sustainable low-risk business profile

Securing profitability	**Until 2020 portfolio transformation** towards high share of low-risk business **2021 - 2025 growth phase** diversification into new markets	**Adj. EBITDA target 2020 ≥ €2.4 bn** **Adj. EBITDA target 2025 > €3.0 bn**
High level of financial discipline	**Internal financing capability until 2020** Retained cash flow > net investments	**Debt repayment potential 2021-2025** Retained cash flow / net debt of at least 16%
High attention on investors	**Access to debt capital markets** Solid investment grade ratings	**Sustainable dividend level** Payout ratio of 40% to 60% (medium-term target)
Focus on sustainability	**Transforming generation portfolio** Expansion of renewables and zero-carbon electricity generation	**Funding strategy** Based on sustainable finance products

Questions & Answers ›

Appendix

EnBW at a glance[1]

One of the largest German utilities

- 5.5 m customers
- 13 GW generation portfolio
- Stable shareholder structure
- 21,775 employees
- Strong roots in Baden-Wuerttemberg

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 m

Fully integrated utility in Germany

Electricity	Generation	Trading/procurement	Transmission/ distribution	Sales	
Gas	Import contracts/ infrastructure	Storage	Trading/portfolio management	Transport/distribution	Sales

Four business segments

- Sales
- Grids
- Renewable Energies
- Generation & Trading

[1] As of 31 December 2018

Political & regulatory environment: Overview

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 onshore wind (4GW) and PV (4GW) between 2019-2021
- Debate on tariff system and costs of power ongoing.
- Debate on increasing acceptability of RES expansion ongoing

Coal phase-out

Goal Coal phase-out commission recommends phase-out by 2038 (check in 2032 if phase-out by 2035 possible)

Goal Various intermediate steps proposed:

- By 2022: decommissioning of 3GW lignite + 4GW hard coal
- By 2030: decommissioning of further 6GW lignite + 7GW hard coal
- Compensations for operators envisaged
- Financial support for gas-to-coal fuel switch

Electricity grid expansion

Goal Remove bottleneck in energy transition (i.e. slowing grid expansion)

- Underground cabling given priority over overhead powerlines
- System of grid charges to be amended in next legislative period

Political & regulatory environment: Market development

Generation and trading

- Sustained trend towards renewable energies[1]:
  - > 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
- Moderate expansion of gas grids

Customers

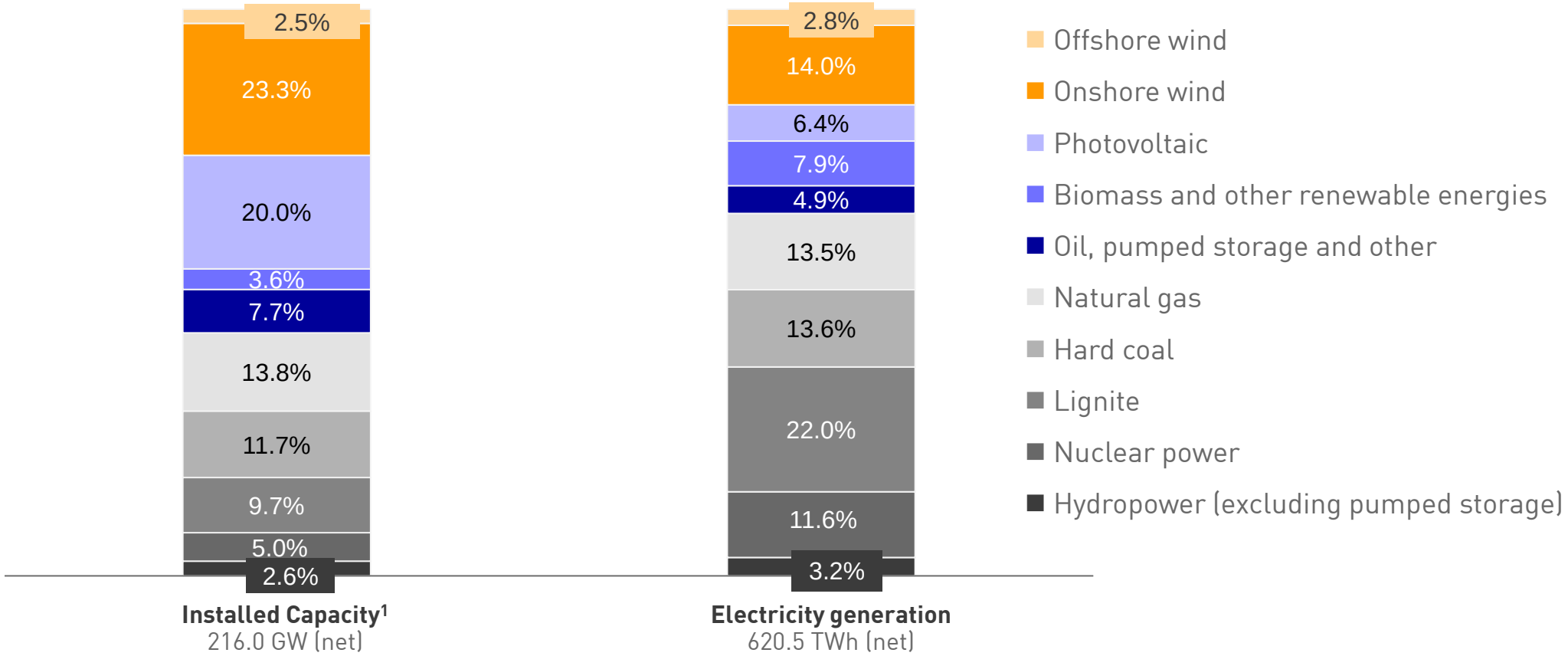
- Downturn in demand for electricity and gas due to energy efficiency and rise in demand from electric vehicles and residential heating sector[1] in the future.
- Renewables for the most part in the hands of non-PSCs[2]
- Consumer playing an increasingly active role with PV and battery systems and electromobility[3]
- Landlord-to-tenant electricity supply still uneconomic (inhibited by EEG levy)
- Number of energy co-operatives has increased sixfold since 2008 from ~150 to 970.
- Rising 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 conditions**: 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

German electricity market: Installed capacity and electricity generation 2017[1]

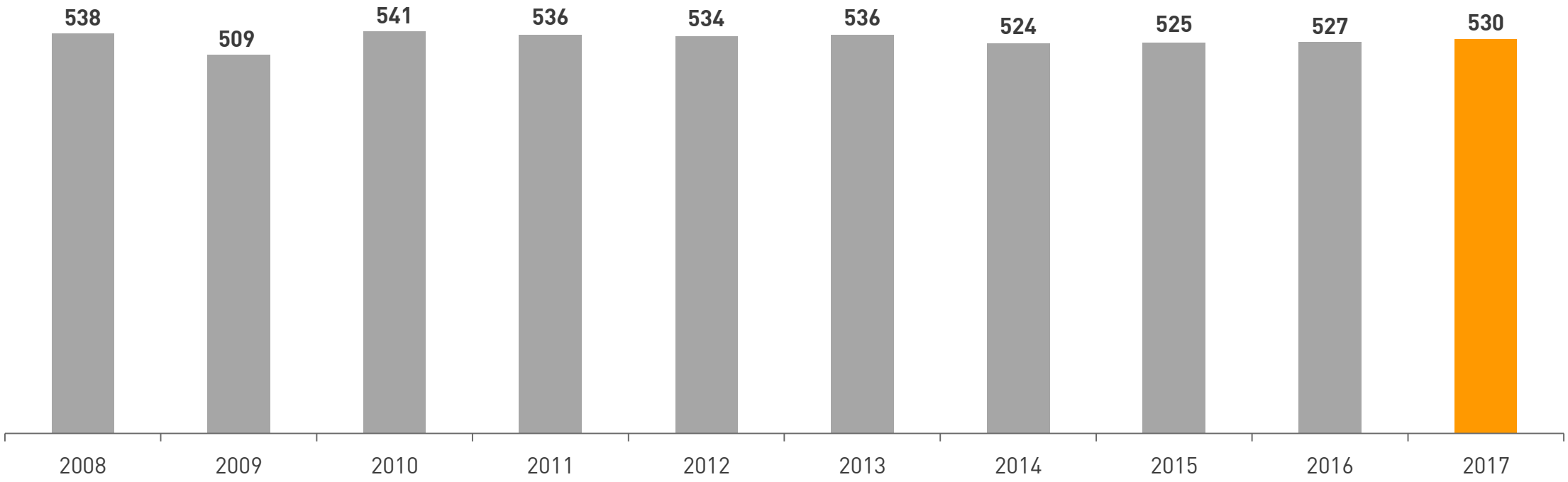


Source: BDEW, April 2018
[1] As of 31 December 2017

German electricity market: Electricity consumption

Electricity consumption in Germany

in TWh



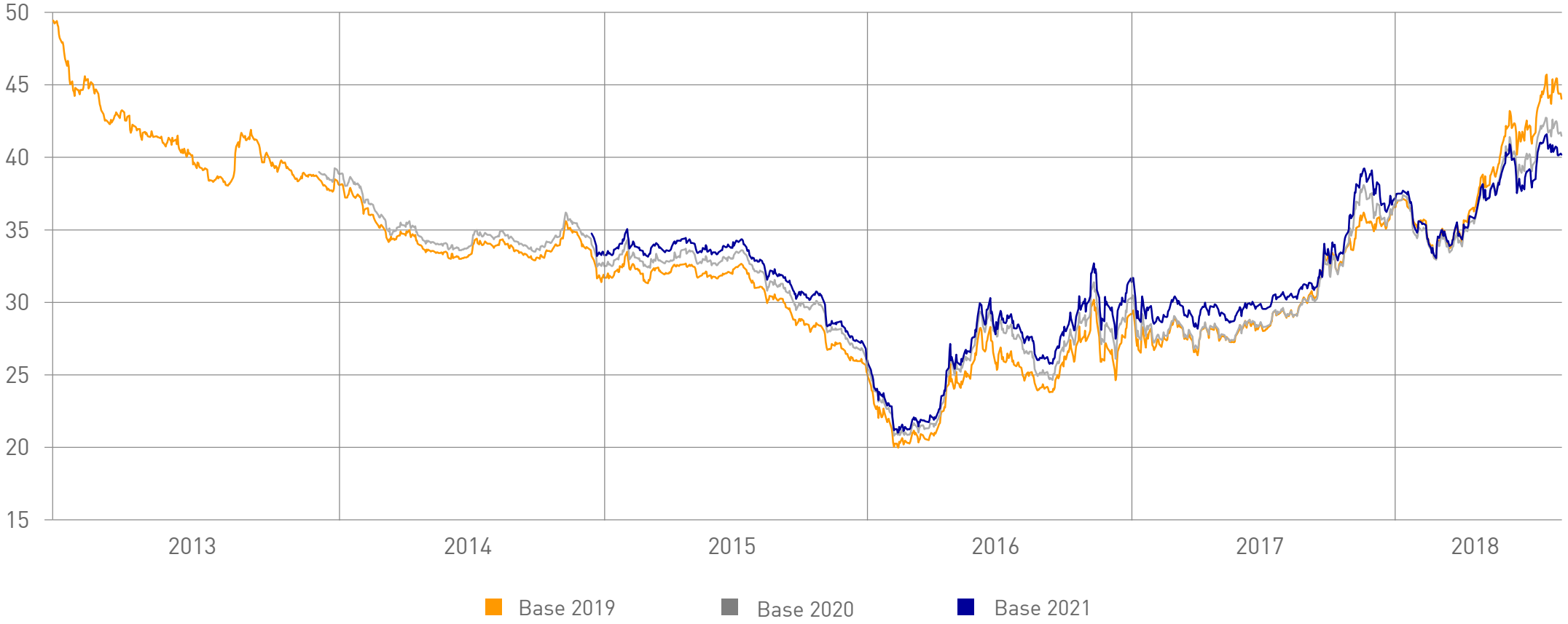
Net electricity consumption stable in the past few years; reduction due to efficiency is compensated by changes in consumption habits and economic growth

Figures as of February 2018; Source: AGEB

German electricity market: Wholesale forward price

Forward price for baseload electricity in Germany

in €/MWh

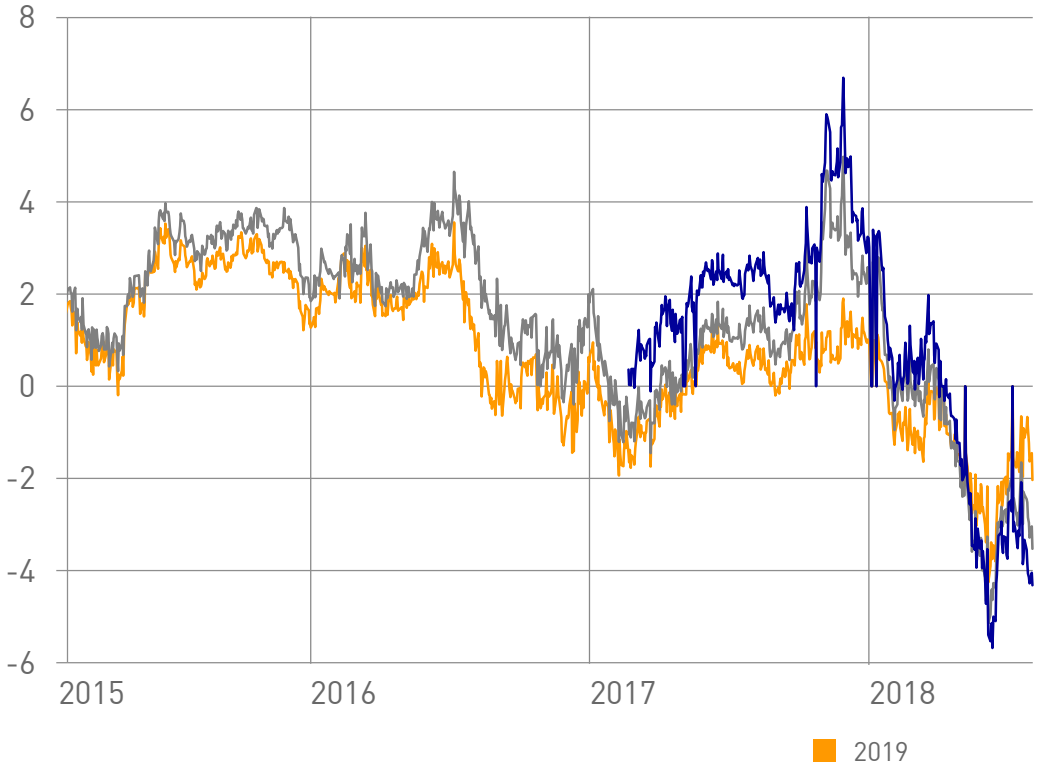


German electricity market: CSS at low levels and negative prices for CDS

Clean-dark-spread base

in €/MWh

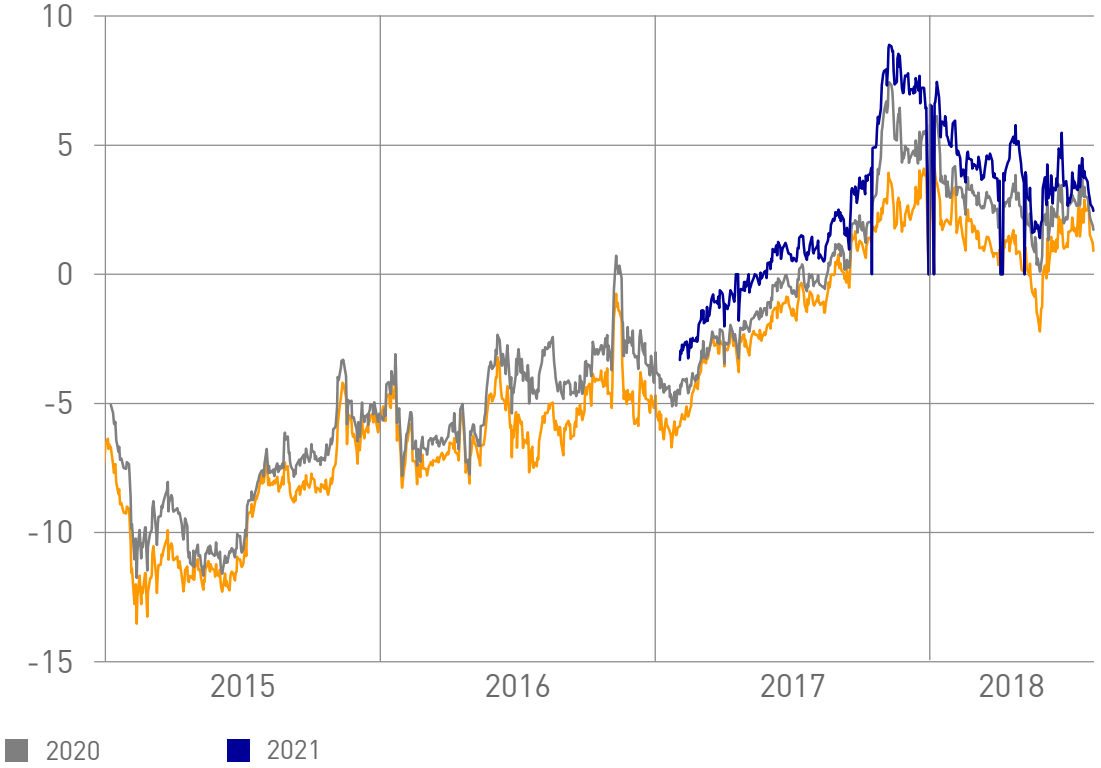
- Gross margin of a coal-fired power plant (plant efficiency: 36%)



Clean-spark-spread peak

in €/MWh

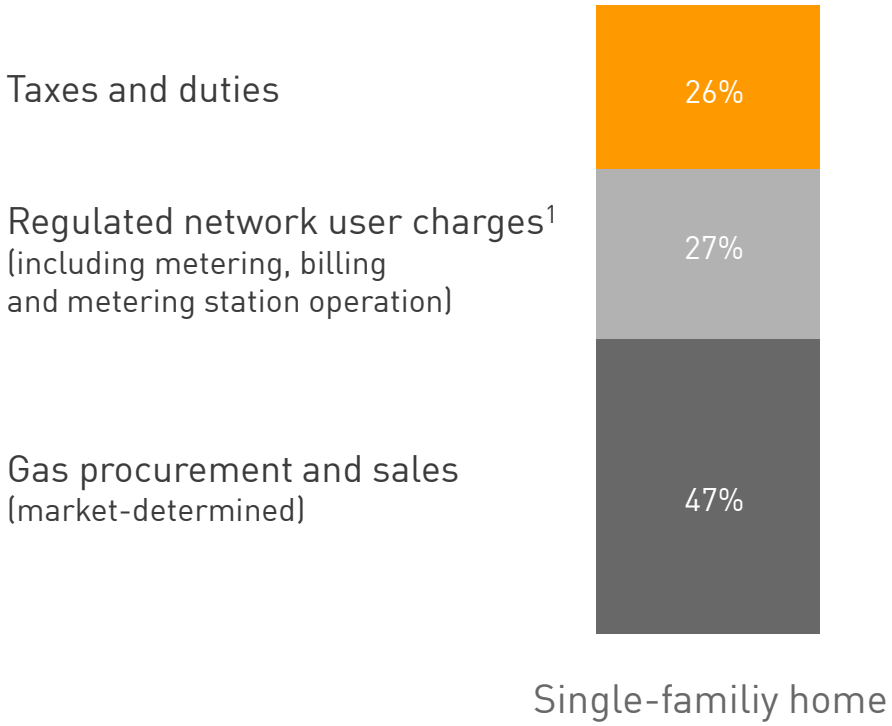
- Gross margin of a gas-fired power plant (plant efficiency: 50%)



Clean-spark-spread represents the net revenue a generator makes from selling power, having bought gas and the required number of carbon allowances.
Clean-dark-spread is the corresponding indicator for coal-fired generation of electricity.

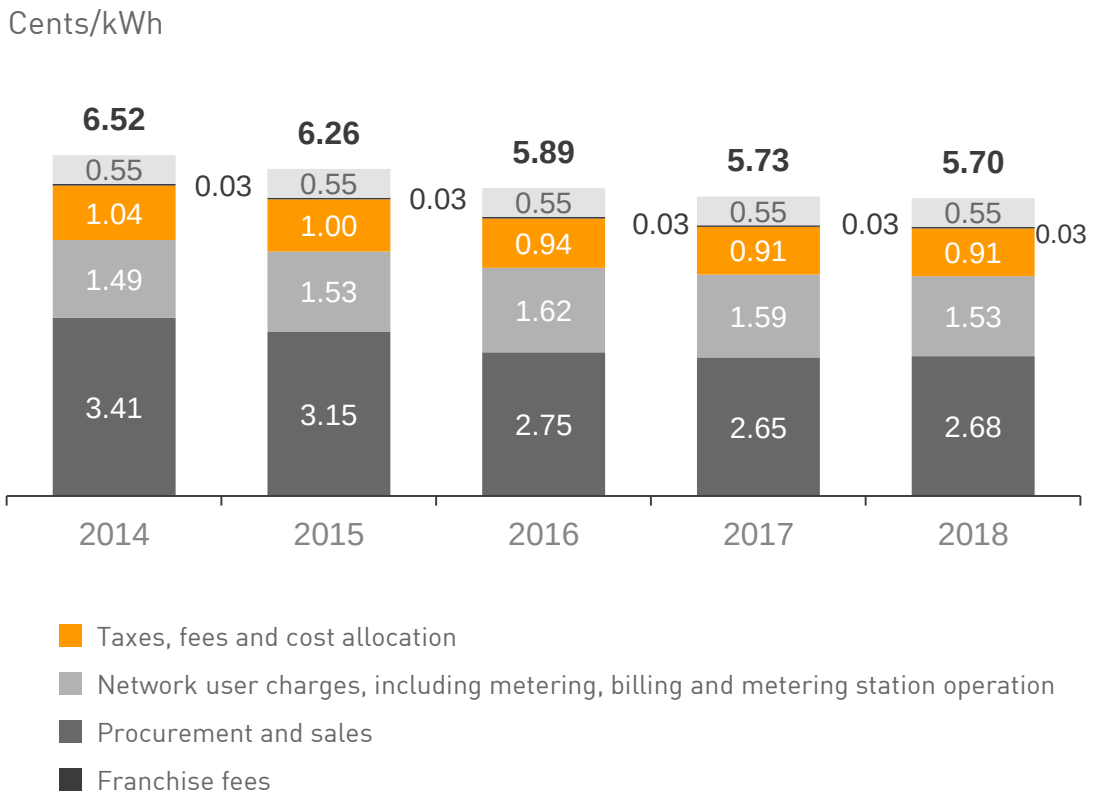
German gas market: Gas price

Gas price



Single-family home, gas central heating

including hot water, customer on contract with regional default supplier[2]
(annual consumption 20,000 kWh)



[1] Average net network user charge including charges for metering, metering station operation and billing, subject to large regional variation, source: BDEW, as of 01/2018

[2] Most heating gas customers are customers on contract with the regional default supplier, with reduced concession fee (0.03 ct/kWh), source: BDEW, 01/2018

German gas market: Front month price development

Front month reference prices[1]
in €/MWh

[1] Average of Gaspool and NCG

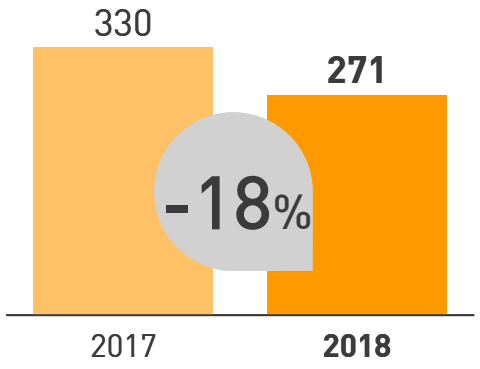
German gas market: Spot price development

Spotmarket reference prices[1]
in €/MWh

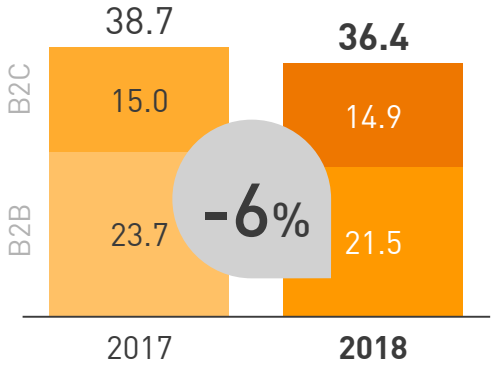
[1] Average of Gaspool and NCG

Sales
Operating decrease due to out-of-period effects

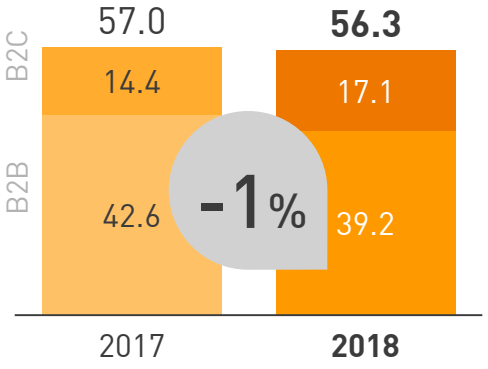
Adjusted EBITDA
in € m



Sales volume Electricity
in TWh



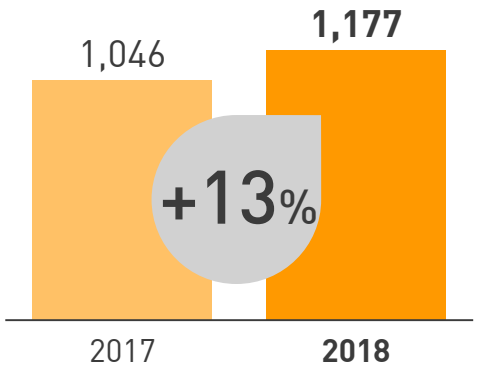
Gas
in TWh



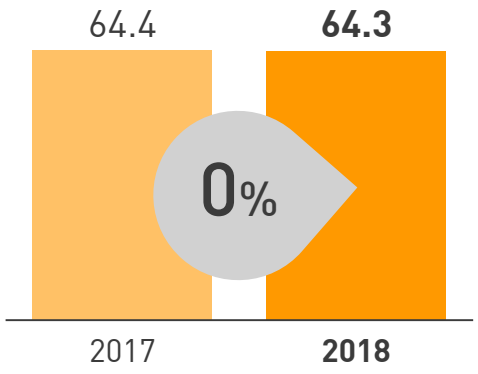
Planned elimination of positive out-of-period effects, i.a. the reversal of provisions for issues that have since lapsed

Grids
Expected increase

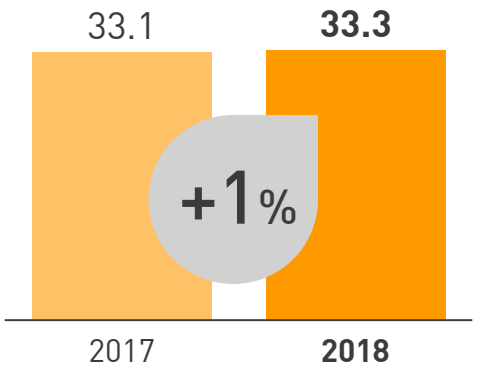
Adjusted EBITDA
in € m



Transmission volume Electricity
in TWh



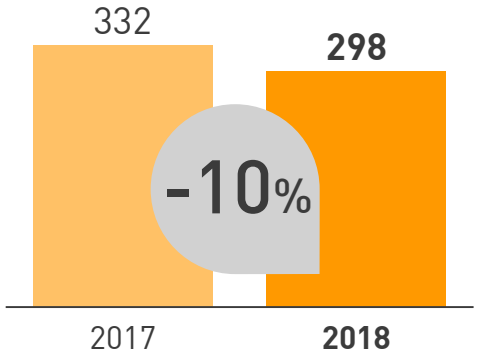
Gas
in TWh



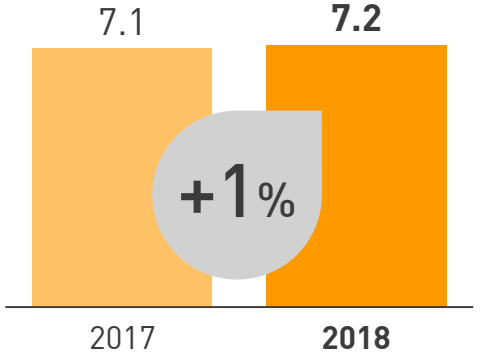
- Full consolidation of VNG
- Higher revenues from the electricity grid user charges

Renewable Energies
Weather-related decrease

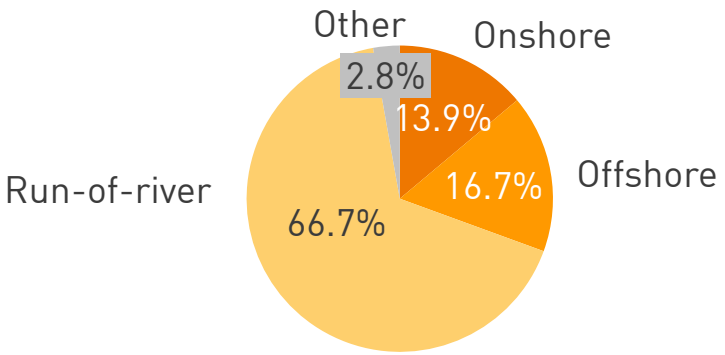
Adjusted EBITDA
in € m



Generation volume
in TWh[1]



Renewables generation mix
in TWh[1]

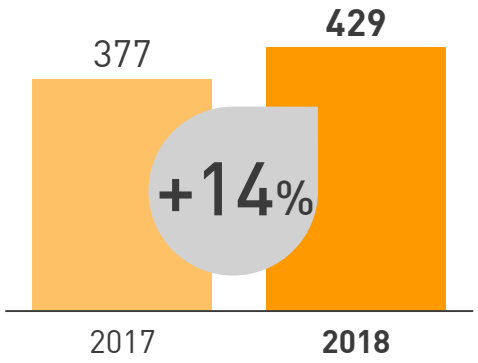


- Improved generation output, due to new onshore wind farms commissioned since mid-2017 (+178 MW)
- Reduced earnings from run-of-river power plants due to low water levels
- Lower wind yields compared to previous year, notably at offshore wind farms

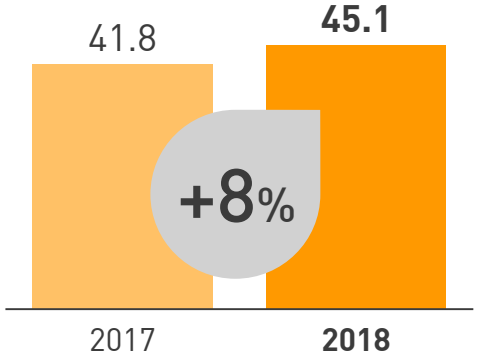
[1] Figures are taken from the segments. Segment excludes generation from pump storage plants that is associated in the generation and trading segment

Generation and Trading
Improved operating performance

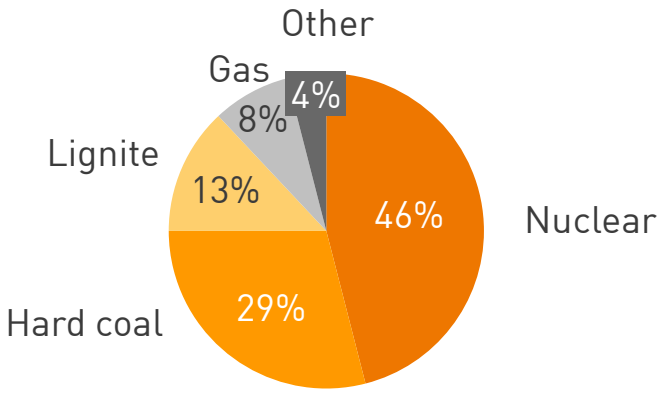
Adjusted EBITDA
in € m



Generation volume
in TWh[1]



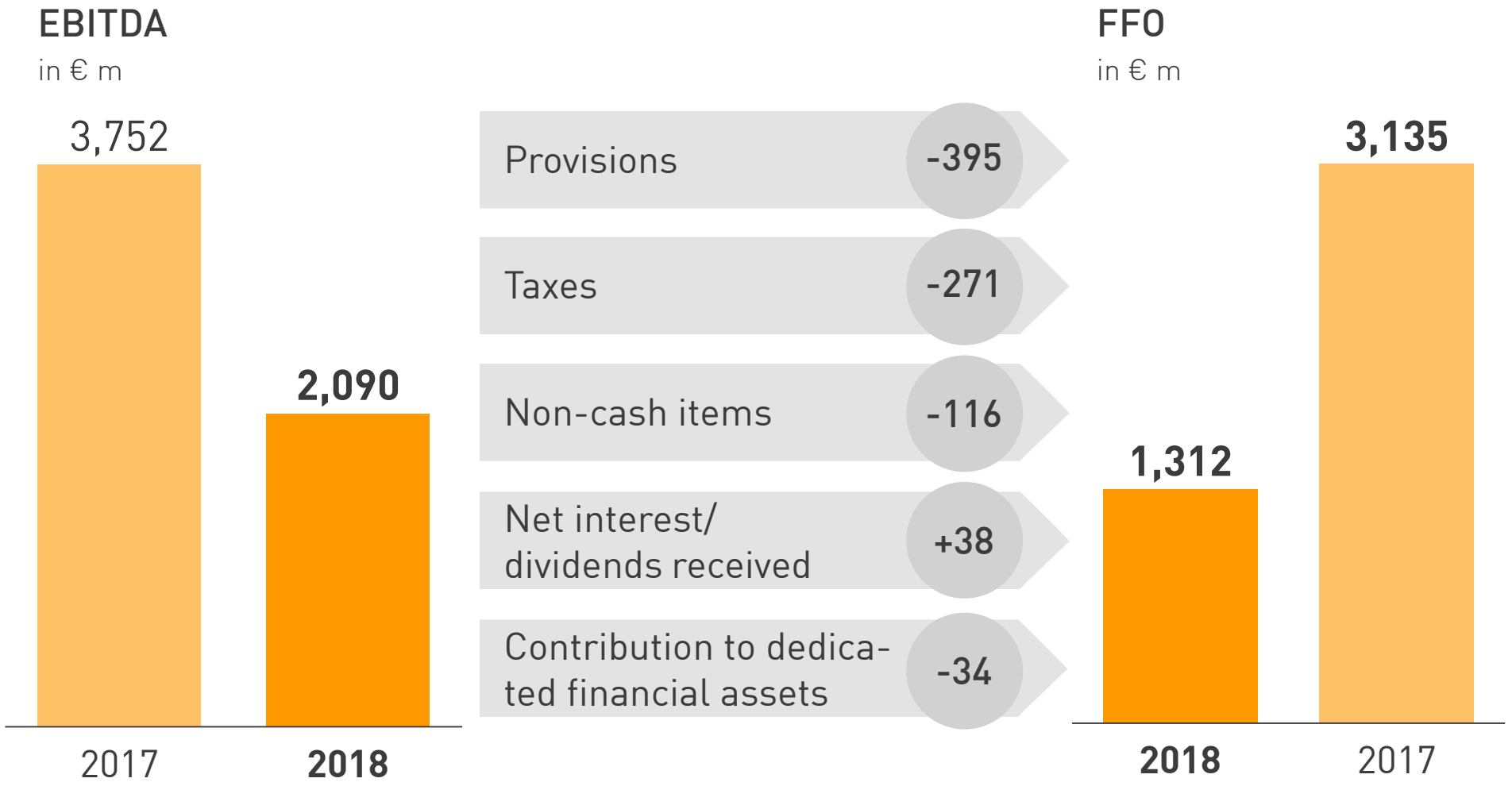
Conventional generation mix
in TWh[1]



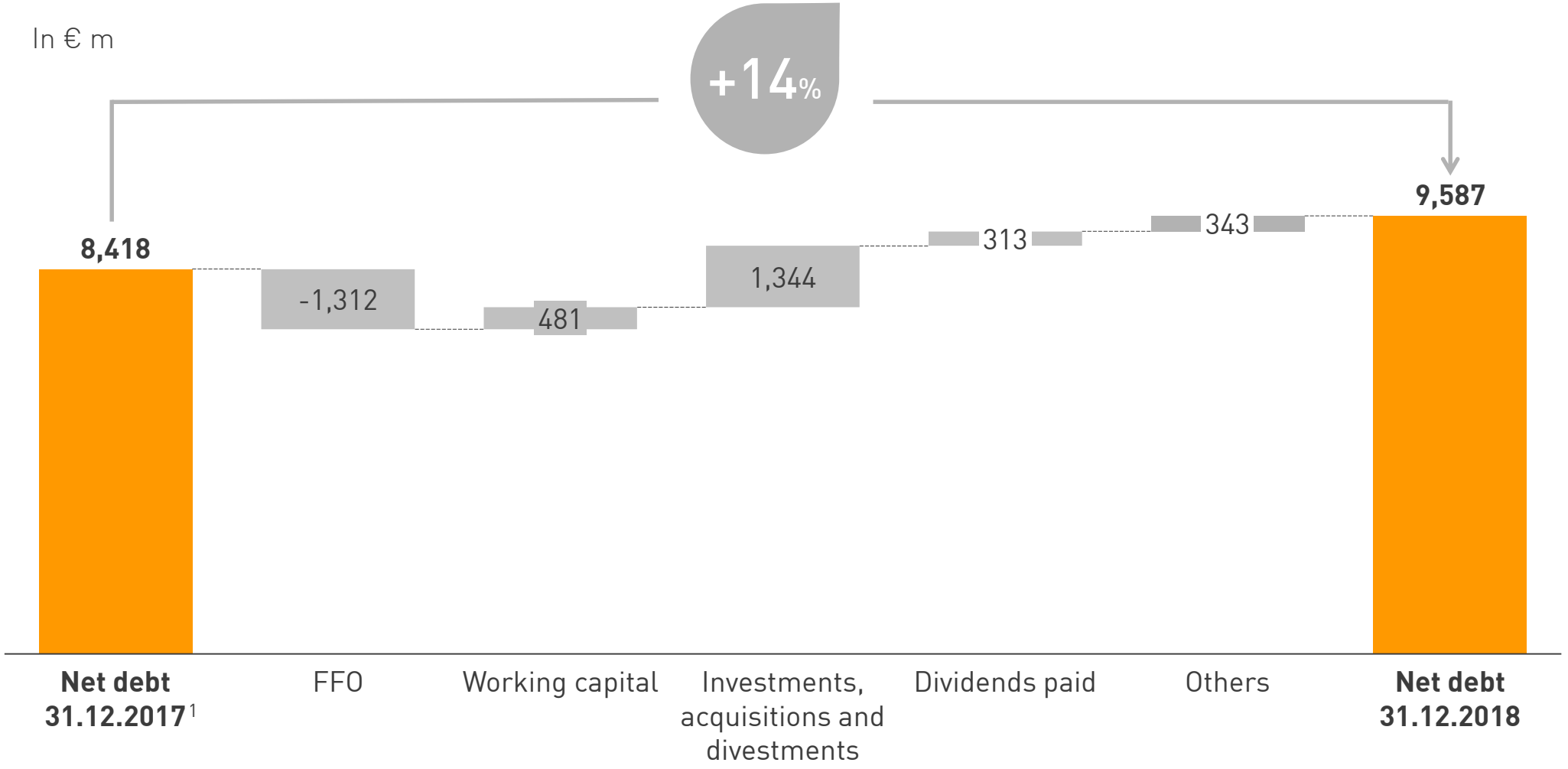
- ➕ Downtime of KKP 2 nuclear power plant in 2017
- ➖ Extended revision of the GKN II nuclear power plant
- ➖ Unfavorable weather conditions

[1] Figures are taken from the segments. Segment includes pump storage plants

FFO decreased mainly driven by the nuclear fuel tax refund in 2017



Increase in net debt

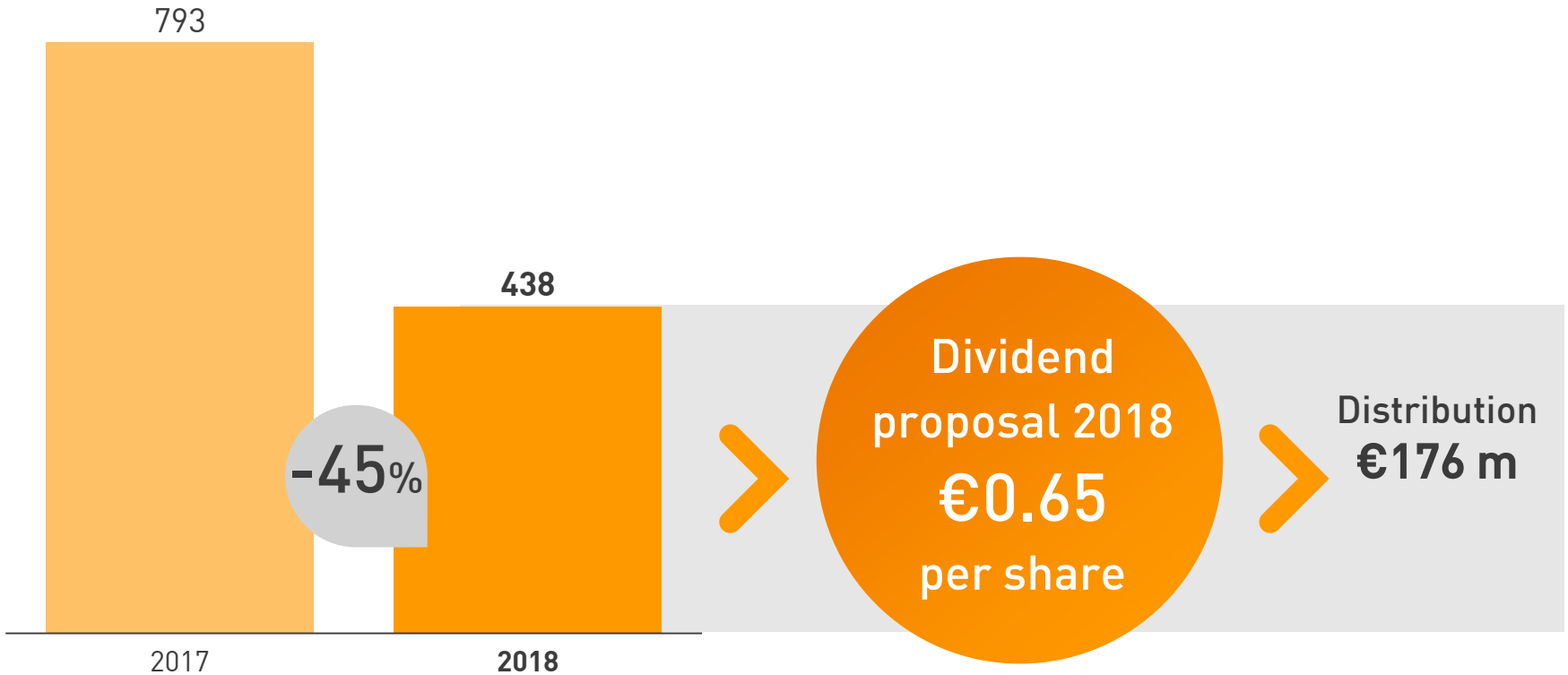


[1] The figure for the previous year has been restated

Adjusted group net profit decreased as expected

Adjusted Group net profit[1]

in € m



[1] In relation to the profit attributable to the shareholders of EnBW AG

Generation and portfolio of the EnBW Group in 2018

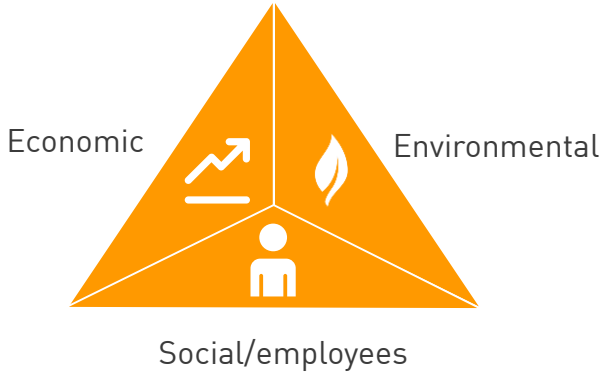
	Generation portfolio in MW		Own generation in GWh	
	2018	**share**	**2018**	**share**
Renewable Energies	**3,738**	**28%**	**8,414**	**16%**
Run-of-river	1,006	8%	4,846	9%
Storage/pumped storage (using natural flow of water)	1,507	11%	1,030	2%
Wind onshore	718	5%	996	2%
Wind offshore	336	3%	1,233	2%
Other	171	1%	309	1%
Thermal power plants	**9,661**	**72%**	**45,078**	**84%**
Brown coal	875	7%	6,048	11%
Hard coal	3,491	3%	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%**

Divergence from 100% possible due to rounding effects

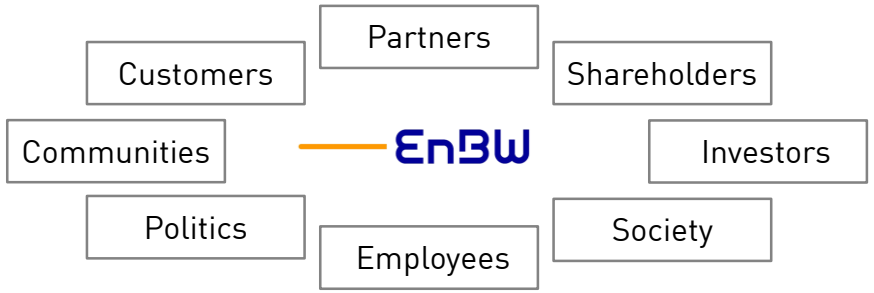
Corporate Sustainability: Integral part of the strategy

Sustainability at EnBW

- **Sustainability dimensions**



- **EnBW stakeholders**



Sustainability is integrated in

- **Corporate strategy** ✓
- **Non-financial top KPIs and targets** ✓
- **Stakeholder management** ✓
- **Risk and opportunity analysis** ✓
- **Annual reporting** ✓

Corporate Sustainability: Ratings

ISS-oekom

2018

B-

Prime status

Major improvements in

- Products and services
- Corporate governance and business ethics

Sustainalytics

2018

73

Outperformer status

Major improvements in

- Environmental aspects
- Social aspects

Carbon Disclosure Project

2018

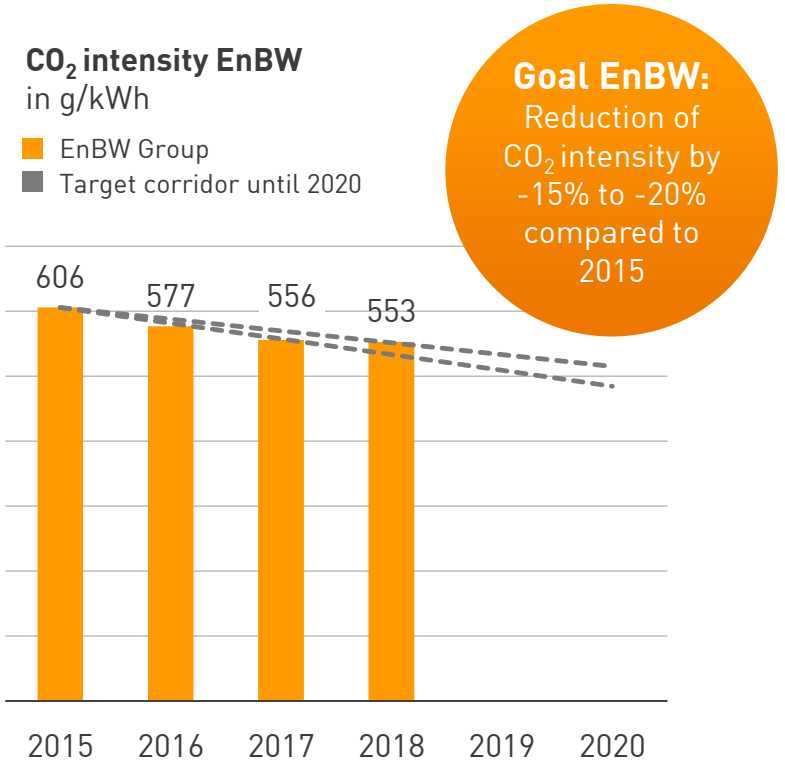
B

Management status

- Effective initiatives in the field of climate protection
- Transparent reporting on emissions, opportunities and risks of climate change

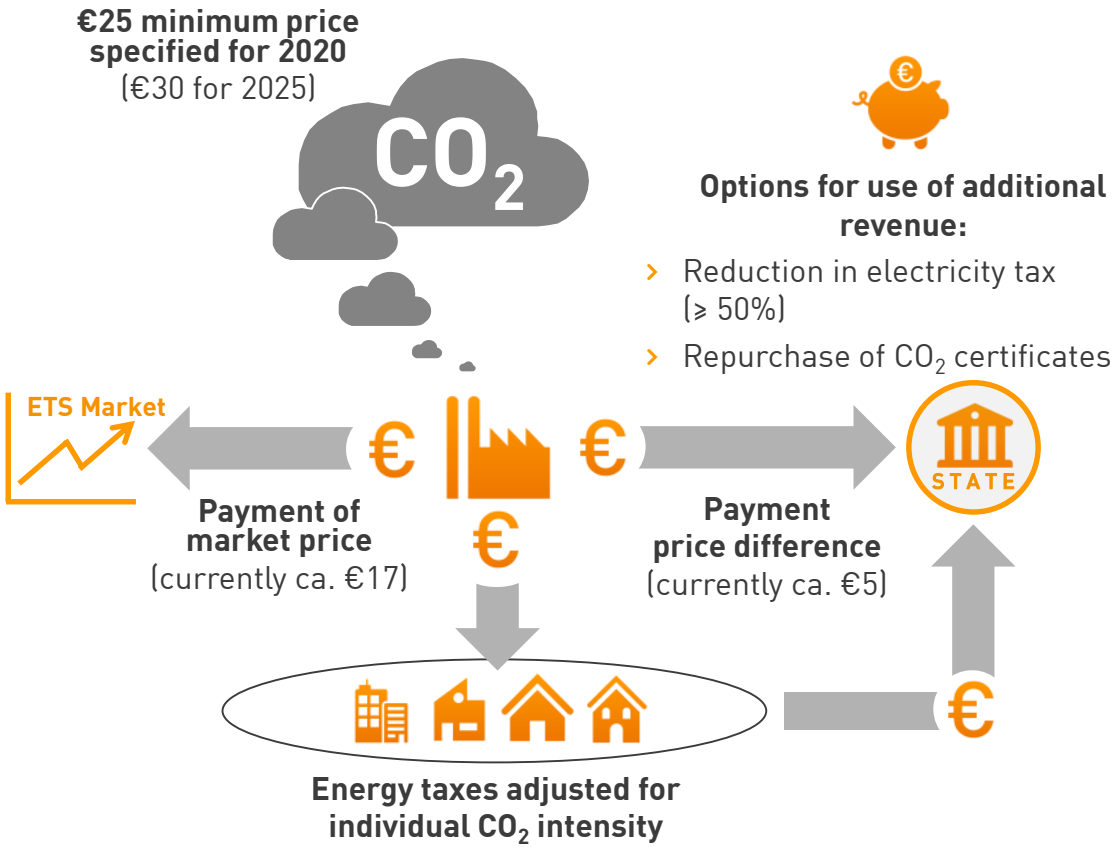
EnBW is committed to climate protection

- **EnBW's long-term strategy is in line with the Paris Agreement** and the goals of the EU and the German government
- EnBW has introduced a **TOP-KPI** in 2013, **covering expansion of RE**, in 2016 a **TOP-KPI focusing on CO_2 intensity**
- Long-term forecasts includes **scenarios with ambitious climate protection targets** (see TCFD recommendations)
- **TOP KPI CO_2 intensity** reflects the great importance of **climate protection as an economic and ecological goal of EnBW**
- EnBW strives for greatest possible **CO_2 free power generation** – with grid expansion, **we support climate-friendly energy supply**
- EnBW strongly advocates **a price floor for CO_2** of 25 EUR/t in 2020 and 30 EUR/t in 2025



Focusing on sustainability, EnBW supports CO_2 reduced generation with a minimum CO_2 price

EnBW's position on minimum CO_2 price



Introduction of a national CO_2 target price of €25 from 2020 and €30 from 2025

- This would render significant market based CO_2 reductions economically viable – climate-friendly power plants would be allocated more operating hours. At the same time risks for renewable energy investments would be mitigated."

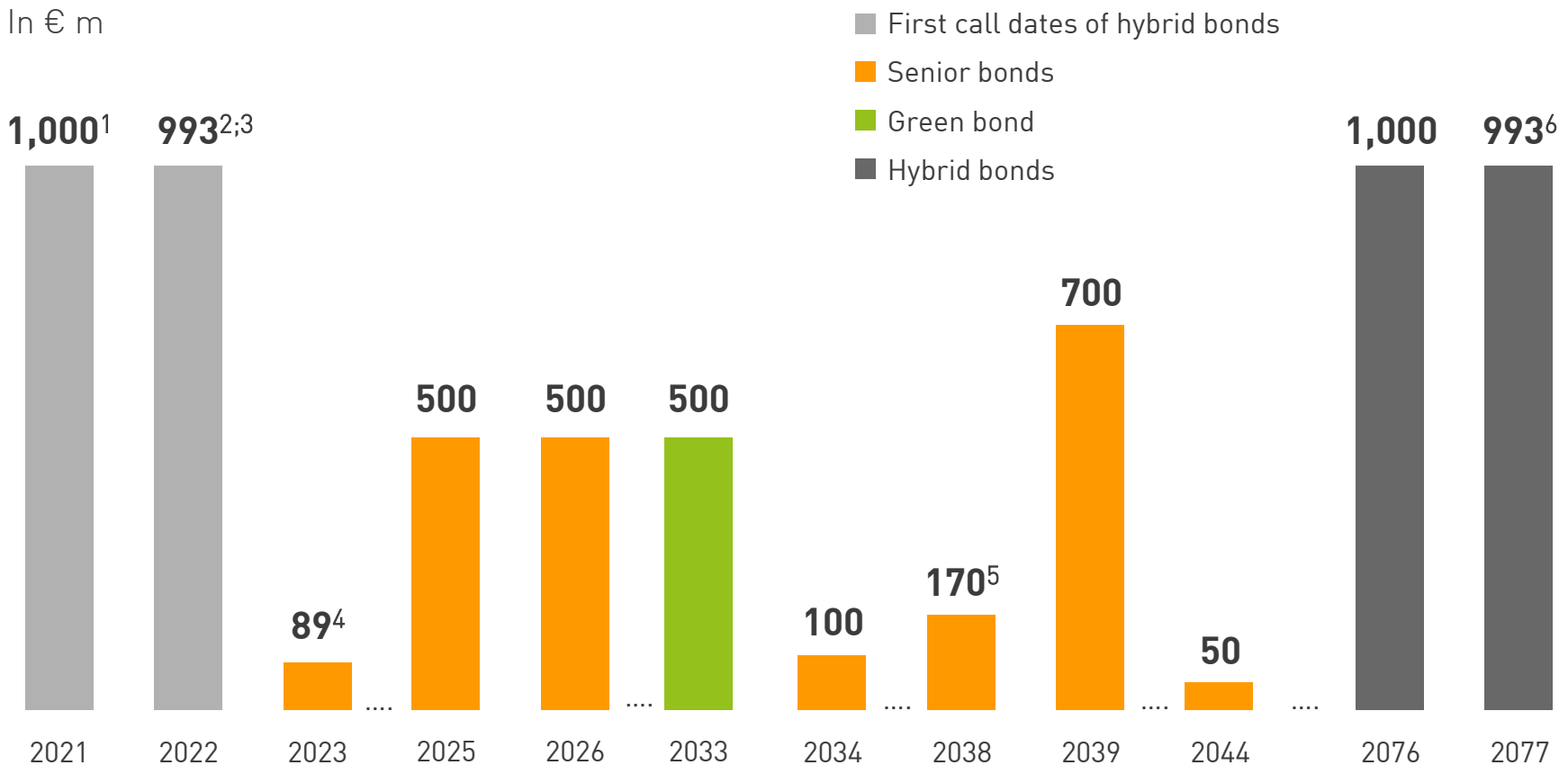
Reduction of electricity tax by at least 50%

- Most of today`s electricity and energy taxes have no significant impact on carbon emissions.
- Reduction of the electricity tax facilitated with the additional revenue from the minimum price of CO_2; the natural gas tax can be abolished

Alignment of energy taxes with the CO_2 intensity of the energy source

- Fundamental reform of the energy tax system: focus on the climate impact of energy sources
- Existing refunds and exemptions remain unaffected

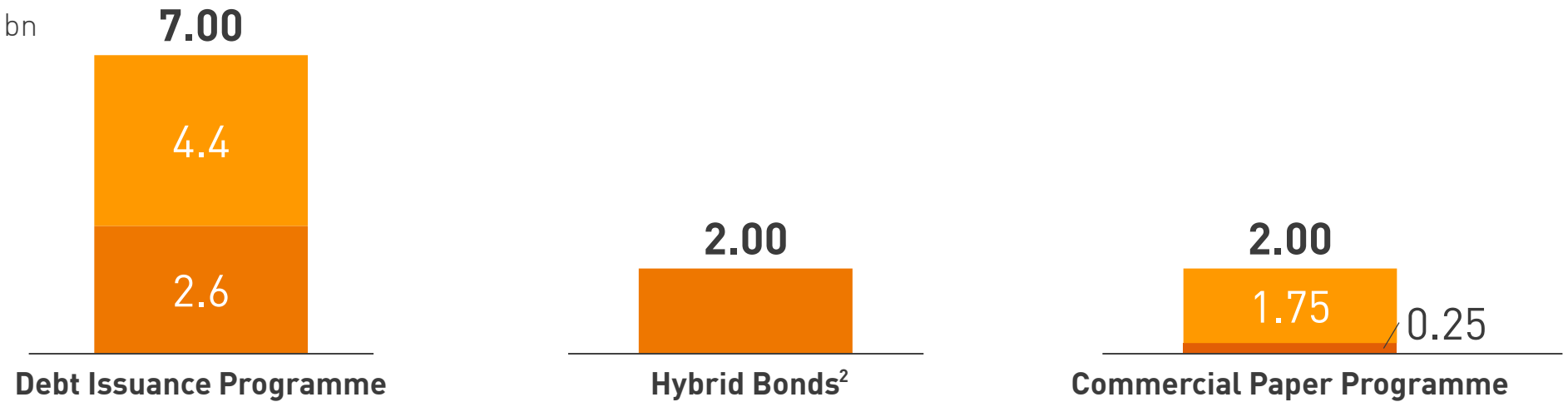
Maturities of EnBW's bonds



[1] First call date: hybrid maturing in 2076
[2] First call date: hybrid maturing in 2077
[3] Includes USD 300 million (swap in EUR), Coupon before Swap 5.125%
[4] CHF 100 million, converted as of the reporting date of 31/12/2018
[5] JPY 20 billion (swap in EUR), Coupon before Swap 3.880%
[6] Includes USD 300 million, converted as of 05/10/2016

EnBW has a flexible access to various financing sources[1]

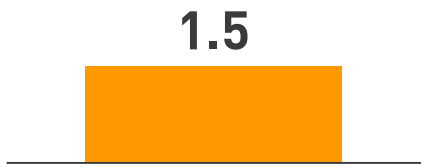
In € bn



Debt Issuance Programme
Thereof € 2.6 bn utilised[2]

Hybrid Bonds[2]

Commercial Paper Programme
Thereof € 0.25 utilised



Syndicated Credit Line
Undrawn
Maturity date: 2021

Bilateral Free Credit Lines[2]

Project financing
and
low-interest loans
from the EIB

[1] As of 31 December 2018
[2] Rounded figures

Fixed income: Ratings

Rating: a sound financial policy has allowed EnBW to maintain A category ratings against the negative sector trend

Moody's Investors Service

A3 / stable
12 June 2018

- Leadership position as a 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 2020 strategy
- Difficult operating environment in Germany for conventional generation and increasingly challenging environment in retail markets
- Certain execution risks relating to a large investment programme
- Balanced financial policies and track record in implementing measures to shore up its financial profile
- Strong shareholder support

Standard & Poor's Ratings Services (McGraw Hill Financial)

A- / stable
24 July 2018

- Solid regional competitive position and increasing foothold in national gas distribution
- Considerable progress made in business repositioning strategy
- Increased share of operating income from low-risk regulated activities and long-term contracted renewables
- Still significant exposure to volatile and commodity-driven wholesale power prices
- Well managed funding of nuclear waste-related liabilities, without major disruptions to its strategy or changes to the capital structure
- Prudent financial policy underpinned by utilisation of nuclear tax refund for capex and deleveraging

Fitch Ratings

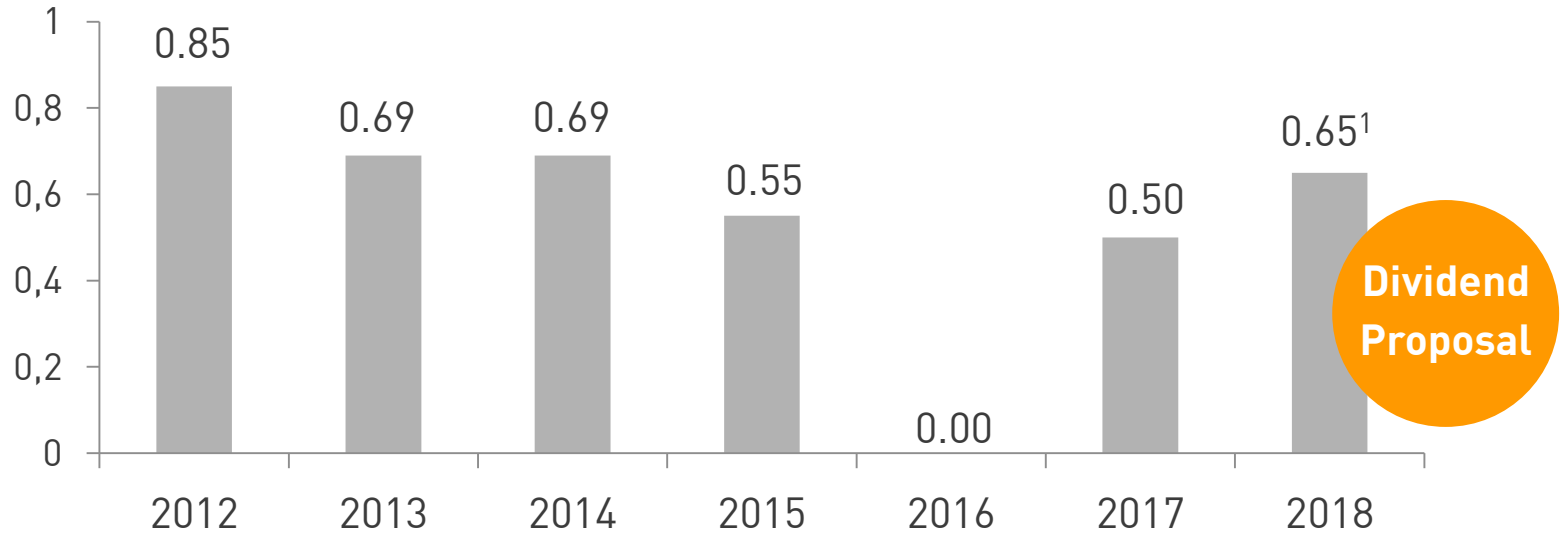
A- / stable
28 September 2018

- 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 EUR4.8 billion 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

Appropriate dividend payment for EnBW's shareholders

Dividend

in €



Dividend for 2018

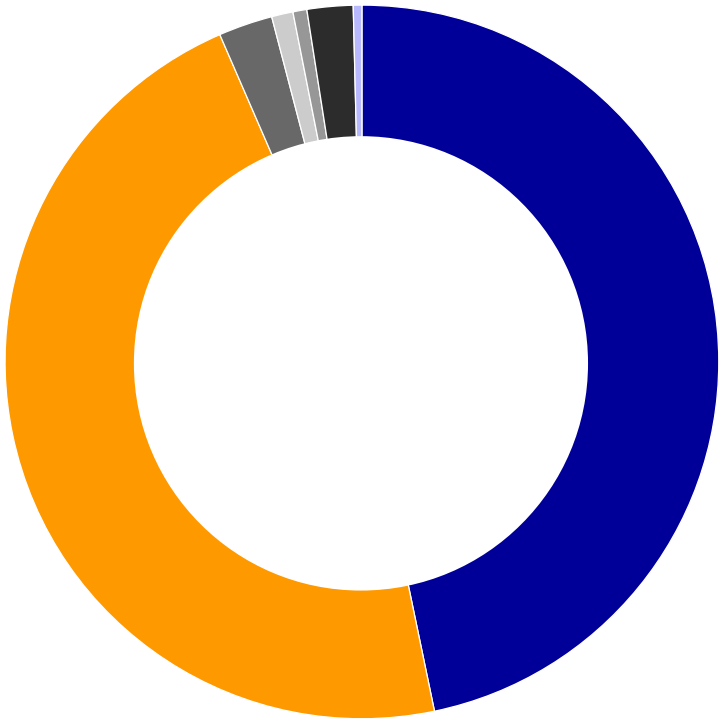
- Dividend proposal of €0.65 per participating share
- Total of 270,855,027 participating no-par value shares corresponds to a total amount of € 176,055,767.55

[1] Subject to approval of AGM 2019 on 8 May 2019

Equity capital market: Shareholder structure

Shareholder structure[1]

OEW Energie-Beteiligungs GmbH	**46.75%**
NECKARPRI-Beteiligungsgesellschaft mbH[2]	**46.75%**
Badische Energieaktionaers-Vereinigung	**2.45%**
Gemeindeelektrizitaetsverband Schwarzwald-Donau	**0.97%**
Neckar-Elektrizitaetsverband	**0.63%**
EnBW Energie Baden-Wuerttemberg AG	**2.08%**
Other shareholders	**0.39%**



Stock exchange information

ISIN/security ident. no.	DE0005220008/ 522000
Stock exchange abbreviation	Bloomberg EBK GY/reutersEBK/EBKG.DE
Transparency level	General Standard
Indices	General All Share, DAXsector 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] Divergence from 100 % possible due to rounding effects
[2] 100% subsidiary of NECKARPRI GmbH which is a 100% subsidiary of the federal state of Baden-Wuerttemberg

as of 31 December 2018

Financial calendar 2019

08.05.2019	Annual General Meeting 2019
11.05.2019	Quarterly Statement January to March 2019 Conference time: 01:00 pm
25.07.2019	Six-Monthly Financial Report January to June 2019 Conference time: 01:00 pm
08.11.2019	Quarterly Statement January to September 2019 Conference time: 01:00 pm

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