

Sustainable finance >

EnBW Green Bond | Impact Report 2018



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Ladies and Gentlemen,

Thomas Kusterer
Member of the
Executive Board
and Chief
Financial Officer



The systematic expansion of renewable energies is a cornerstone of our EnBW 2020 strategy. We will also continue working towards a low-carbon economy and, with our investment, contribute to the decarbonisation of energy generation. In addition to our clear-cut strategy, we are committed to an effective minimum price on carbon and to transparent climate-related financial reporting. Sustainability is integrated into our strategy process, in our investment and divestment decisions and in our risk reporting.

As we develop our strategy towards 2025, we will continue to extend our position as a sustainable and innovative infrastructure partner. In October 2018, we issued our first Green Bond. This was a logical next step for us in the process of more closely integrating sustainability into our financing strategy.

More than 95% of proceeds from the Green Bond are invested in renewable energies, and the remainder in charging infrastructure for electric-powered vehicles. An important part of the Green Bond issue for us was the opportunity to attract new investors. Purchasers not only include traditional investors, pension funds and insurers with a long investment horizon, but also large numbers of ethical investors whose primary focus is on socially and environmentally responsible products.

This impact reporting update on our Green Bond supplements our Integrated Annual Report to provide you with information about how the funds are allocated. We believe that it is important to report not only on the key financial data, but also, and in particular, on the added value from our projects in terms of benefit for the climate.

We were very pleased with the success of our Green Bond, which confirms our choice of strategic direction. This reporting update marks the first of a series in which we will keep you informed annually about the development of our Green Bond.

Yours,

A handwritten signature in blue ink, appearing to read 'T. Kusterer', written over a horizontal line.

Thomas Kusterer

The EnBW Green Bond: Investing in the future of energy

With its first Green Bond, EnBW has once again translated its commitment to the Energiewende into action with real impact. It gives investors an opportunity to invest in projects that contribute to sustainable development. This enables them to drive forward the low-carbon transformation of the energy industry while sharing in the financial rewards of that transformation.

Green Bonds are issued on financial markets exclusively to fund climate-friendly projects. This means that all proceeds from them go into sustainable environmental and climate protection projects. They are aligned with the Green Bond Principles, which lay down minimum requirements of integrity and transparency relating, among other things, to the project selection process, disclosure of fund allocation and reporting requirements.

In the case of the EnBW Green Bond, the solid financial standing of EnBW provides a strong additional degree of security – for all investors and for all project partners in each individual project.

Key data on the Green Bond

Issuer:	EnBW International Finance B.V.
Guarantor:	EnBW Energie Baden-Württemberg AG
Status:	Senior unsecured
Rating:	A3 (stable) / A- (stable) / A- (stable)
Issue size:	€500 million
Net proceeds:	€496.42 million
Issue date:	24 October 2018
Value date:	31 October 2018
Term to maturity:	15 years
Maturity:	31 October 2033
Coupon:	1.875% p.a.
Denomination:	€1,000.00
Listing:	Luxembourg
ISIN:	XS1901055472

The world's biggest floating crane was needed to assemble the 1,000 ton transformer platform for EnBW Hohe See.



Onshore wind farms support the decentralisation of electricity generation.



EnBW is stepping up the construction of solar parks.



Electric mobility contributes to reducing carbon emissions.



Many ways to help the climate

The projects financed by the EnBW Green Bond cover a wide range of solutions for sustainable resource use.

Specifically, the Green Bond portfolio includes a large number of onshore wind farms of various sizes, offshore wind farms, solar parks and projects to expand quick-charge infrastructure for electric vehicles in Germany.

Overall portfolio: Renewable energies and electric mobility

Category	Capital expenditure attributable to the bond (€ million)
Offshore wind (projects under construction)	227.5
Onshore wind	234.4
Solar (PV)	26.5
Expansion of quick-charge infrastructure	8.05
TOTAL	496.42

Electric mobility: Expansion of quick-charge infrastructure

Funds allocated	€8.05 million
Locations	123 charging points at 89 locations on the German autobahn network
Number of charges in 2018	38,327

Portfolio: Renewable energies

Project name	Installed capacity (MW)	Of which: capacity attributable to the bond (MW)
OFFSHORE WIND		
EnBW Hohe See	497***	n/a
EnBW Albatros	112***	n/a
Total offshore wind	609	
ONSHORE WIND		
Fürth	16.5	16.5
Freckenfeld	19.8	9.8
Langenburg	33.5	19.9
Winterbach	9.9	4.9
Aalen-Waldhausen	16.5	8.3
Buchholz III	13.2	6.6
Fichtenau	9.9	9.9
Dünsbach	9.9	9.7
Bühlertann	13.2	6.5
Dienstweiler	4.8	2.4
Homburg	9.6	9.4
Boxberg-Angeltürn	12.0	11.8
Boxberg-Bobstadt	12.0	11.8
Harthäuser Wald (expansion)	12.0	10.2
Königheim	9.3	5.9
Total onshore	202.0	143.6
SOLAR (PV)		
Braunsbach-Zottishofen	0.8	0.7
Berghülen	2.7	2.7
Eggesin	10.0	10.0
Tuningen	4.5	4.5
Löffingen (live since 2018)	2.7	2.7
Ingoldingen (live since 2018)	4.4	4.4
Müssentin (live since 2018)	9.3	9.3
Torgau (live since 2018)	4.9	4.9
Riedlingen-Zwiefaltendorf	5.2	2.5
Total solar	44.3	41.6
TOTAL	855.3	185.1

Capex (€ million) per category	Of which: capex attributable to the bond (€ million)	Energy generated (MWh) in 2018	Of which energy generated attributable to the bond (MWh)	CO ₂ avoidance factor (gCO ₂ eq/kWh*)	Emissions avoided in 2018 (tCO ₂ eq/kWh**)	Of which: emissions avoided attributable to the bond (tCO ₂ eq/kWh**)
n/a	227.5	n/a	n/a	675	n/a	n/a

Formula for calculating the CO₂ avoidance factors by the Federal Environment Agency*

The calculation method is identical for PV, for offshore wind and for onshore wind. However, different emission- and substitution factors are utilized. The emission gases CO₂, CH₄ and N₂O are taken into account. This way, not only CO₂ emissions are being calculated but the respective CO₂ equivalents (CO₂eq)*

$$\begin{array}{l}
 \text{CO}_2\text{eq emissions} \\
 \text{avoided by} \\
 \text{RE generation,} \\
 \text{gross} \\
 \text{---} \\
 \text{CO}_2\text{eq emissions from} \\
 \text{RE generation} \\
 \text{(indirect emissions from} \\
 \text{manufacture of generating} \\
 \text{equipment, auxiliary energy, etc.)} \\
 \text{=} \\
 \text{CO}_2\text{eq emissions} \\
 \text{avoided by} \\
 \text{RE generation,} \\
 \text{net} \\
 \text{---} \\
 \text{CO}_2\text{eq emissions} \\
 \text{avoided by} \\
 \text{RE generation,} \\
 \text{net} \\
 \text{=} \\
 \text{RE energy} \\
 \text{generation} \\
 \text{=} \\
 \text{CO}_2 \text{ avoidance} \\
 \text{factor (CO}_2\text{eq)}
 \end{array}$$

323.2	234.4	352,980	256,053	667	235,438	170,788
32.5	26.5	28,005	22,853	614	17,195	14,032
356	488	380,985	278,907		252,633	184,820

* Source: Umweltbundesamt (Federal Environment Agency): Emissionsbilanz erneuerbarer Energieträger 2017 (Emission Balance of Renewable Energy Sources), data as of October 2018; gCO₂eq/kWh: grams of CO₂-equivalent per kilowatt-hour.

** tCO₂eq/kWh: tons of CO₂-equivalent per kilowatt-hour.
 *** Project under construction; planned capacity on completion.

Sustainable goal attainment with the EnBW Green Financing Framework

The international community has adopted the 2030 Agenda for Sustainable Development. Governmental and non-governmental actors are called upon to contribute to the 17 Sustainable Development Goals (SDGs) in order to combat, among other things, poverty, inequality and climate change.

The EnBW Green Financing Framework is likewise based on the SDGs. It governs the financing and refinancing of investments that contribute to climate

protection and advance the transition to a low-carbon, sustainable economy. The Green Financing Framework covers three project categories: Renewable energies, energy efficiency and clean transportation.

Further information on the Sustainable Development Goals is available online at:

<https://www.un.org/sustainabledevelopment/development-agenda/>

What we are doing to meet the Sustainable Development Goals (SDGs)



SDG 7: Ensure access to affordable, reliable, sustainable and modern energy.

EnBW's contribution: With major investment in renewable energies – offshore wind, onshore wind and photovoltaics – EnBW is contributing to the target of substantially increasing the share of renewable energy in the global energy mix by 2030.



SDG 11: Make cities inclusive, safe, resilient and sustainable.

EnBW's contribution: With the expansion of charging infrastructure to boost electric mobility in Germany, EnBW is paving the way for the switch from conventional to electric vehicles.



SDG 13: Take urgent action to combat climate change and its impacts.

EnBW's contribution: Growth in the use of renewable energy sources makes it possible to gradually replace fossil fuel-powered electricity generation and so helps reduce emissions. At the same time, by adapting to climate change, it strengthens the resilience and adaptive capacity of cities and regions to climate-related hazards and natural disasters.

Key non-financial key performance indicators and targets

The renewable energies, energy efficiency and clean transportation project categories also contribute to the attainment of EnBW's non-financial targets.

Expansion of renewable energies

EnBW aims to double the share of generation capacity accounted for by renewable energies by 2020 relative to 2012. The target for 2020 is 5 GW of installed capacity.

Climate protection

EnBW is actively contributing to climate protection by successively reducing the carbon intensity of its own electricity generation activities by 2020.

Customer orientation

EnBW is a strongly customer-oriented company that meets customer needs and wishes with tailored solutions and products.

Reputation

In parallel with repositioning its business model, EnBW aims to continuously improve its reputation.

Excerpt from the Integrated Annual Report 2018

Goal dimension	Goal	Key performance indicator	2018	Target in 2020	
Customers and society 	Reputation	Reputation index	51.3	55.4	In parallel with repositioning its business model, EnBW aims to continuously improve its reputation.
	Customer proximity	EnBW/Yello Customer Satisfaction Index	120 / 152	>136 / >159	EnBW and Yello customers are satisfied customers with a high level of customer loyalty. EnBW and Yello are organisations that are strongly oriented towards customers and that meet the needs and wishes of their customers through tailored solutions and products.
Environment 	Expand renewable energies (RE)	Installed capacity 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.

Project evaluation and selection processes in the EnBW Green Financing Framework

EnBW Energie Baden-Württemberg AG published the EnBW Green Financing Framework in October 2018. It is based on the Green Bond Principles published by the International Capital Market Association (ICMA) in June 2018.

The Green Financing Framework governs the use of green financing instruments within the EnBW Group. It covers Green Bonds, Green Loans and Green Project financing, together with all other types of instrument used to finance eligible projects.

EnBW has introduced a two-step approach to ensure a diligent project evaluation and selection process. This approach is likewise integrated into the Green Financing Framework:

- › To ensure eligibility for green financing, EnBW has set up a Green Financing Committee with representatives from the corporate finance department, the corporate sustainability department, and on case-by-case basis, with representatives from business units. Projects to be allocated with proceeds from Green Financing can be submitted by the business units or be chosen by the Green Financing Committee directly. The final decision on the selection of eligible green assets can only be taken unanimously.
- › The committee is responsible for verifying compliance of all projects with the eligibility criteria (which are specified in the Green Financing Framework). Typical exclusion filters include, but are not limited to, material controversies and major concerns about any impact on the environment.

In addition, selection criteria have been defined for prioritising projects. A prioritisation mechanism is used to assess the extent to which projects meet the selection criteria.

Involvement in international initiatives

EnBW is involved in a number of initiatives that pave the way for sustainable finance.

Integrated Reporting



<http://integratedreporting.org/>

Task Force on Climate-related Financial Disclosures



<https://www.fsb-tcfid.org/>

Technical Expert Group on Sustainable Finance



https://ec.europa.eu/info/publications/sustainable-finance-technical-expert-group_en



What projects are eligible for Green Financing? Relevant projects are identified by careful analysis.

Good independent reviews

Neutral assessments of the EnBW Green Bond has been conducted in the form of a Second Party Opinion and CBI certification.



ISS-oekom Second Party Opinion

ISS-oekom, a rating agency internationally recognised in the sustainability sector, has confirmed that the EnBW Green Bond complies with the Green Bond Principles on the basis of International Capital Market Association (ICMA) criteria. ISS-oekom has verified the bond's good sustainability quality and EnBW's good sustainability performance.

Excerpt from the Second Party Opinion

- › EnBW has defined a formal concept for its Green Bond regarding use of proceeds, processes for project evaluation and selection, management of proceeds and reporting. This concept is in line with the Green Bond Principles.
- › The overall sustainability quality in terms of sustainability benefits and risk avoidance and minimisation is good.
- › The issuer itself shows a good sustainability performance.



Climate Bonds Initiative certification

The Climate Bonds Initiative (CBI) is an international organisation that works to mobilise the bond market for climate change solutions.

EnBW's Green Bond is certified to the high standards of the Climate Bonds Initiative (CBI), which lay down detailed, sector-specific criteria for Green Bond eligibility. The criteria are developed by teams of experts coordinated by an Advisory Panel comprising institutional investors and (environmental) non-governmental organisations (NGOs).

 Further information on the EnBW framework, ISS-oekom and CBI certification is available at: www.enbw.com/green-bond



By the end of 2019, the wind turbines of EnBW Hohe See and EnBW Albatros will present a similar sight to this view of EnBW Baltic 2.

Projects in the Green Bond portfolio: The EnBW Hohe See and EnBW Albatros wind farms

EnBW is currently building the largest offshore wind power project in German waters with the two wind farms EnBW Hohe See and EnBW Albatros. In doing so, EnBW is maintaining its established place as an offshore pioneer. In 2011, EnBW Baltic 1 became Germany's first commercial wind farm to go into operation in the Baltic Sea. EnBW Baltic 2 followed in 2015.

Construction of EnBW Hohe See and EnBW Albatros – which are quite literally out in the high seas, some 95 km north of the island of Borkum and about 100 km west of Heligoland – commenced in autumn 2016. The last foundations were completed in February 2019 and the first of a total of 71 wind turbines are to be erected in April 2019.

Close proximity between the two wind farms has made it possible to exploit synergies in project delivery. The Canadian energy infrastructure company Enbridge Inc. has acquired a 49.9 percent stake in both wind farms. EnBW holds the majority with 50.1 percent.

Technical data

- > Rotor diameter: 154 m
- > Hub height: 105 m
- > Water depth: 40 m
- > Base: monopile
- > Monopiles delivered and installed by Siemens-Gamesa



With the construction of these two wind farms, EnBW has extended its offshore capabilities to the North Sea – in a project nearly twice the size of EnBW Baltic 2.



Further information on the EnBW Hohe See and EnBW Albatros wind farms is available online at: www.enbw.com/hohe-see

Facts and figures

Installed capacity



EnBW Hohe See 497 MW
EnBW Albatros 112 MW

Area

 EnBW Albatros
11 km² site

 EnBW Hohe See
42 km² site

1.9

million t/month
CO₂ avoided

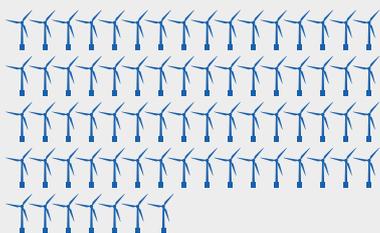
2.5 bn

kWh of electricity per year
expected output
(enough to power 710,000 homes)

Turbines



EnBW Albatros
16 wind turbines



EnBW Hohe See
71 wind turbines



Largest
offshore wind farm project
under construction
in Germany

Full disclosure

If you would like to learn more about our company in general, about our commitment to sustainability and about Green Bonds, you will find detailed information online.

- › Comprehensive information about EnBW, its operating segments and its range of services is available on the EnBW website:
www.enbw.com/company
- › News and a finance calendar are available for investors at
www.enbw.com/investors
- › We provide information on our corporate social responsibility and how we generate economic, environmental and social added value at
www.enbw.com/sustainability
- › Details about the Green Bond with key documents to download and regular updates are available at
www.enbw.com/green-bond

If you have any further questions, please do not hesitate to contact us:

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