

## Germany adopts reform for massive expansion of renewable energies

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Germany

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German Parliament has adopted a legislative package which is regarded as the largest energy policy amendment in decades. It includes a revision of, inter alia, the Renewable Energies Act (Erneuerbare-Energien-Gesetz – EEG) and the Offshore Wind Energy Act (Windenergie-auf-See-Gesetz – WindSeeG) as well as an Onshore Wind Energy Act, which introduces a number of regulations to facilitate the expansion of onshore wind energy.

The reform is considered as urgent to address both the climate crisis, as well as the dependence on fossil fuels from Russia. The relevant acts are in principle scheduled to enter into force on 1 January 2023. However, individual changes will already apply earlier on.

This article summarises the proposed amendments which are most important from an investor perspective.

### 80% of electricity consumption from renewable energy sources in 2030

The share of electricity from renewable energy sources in the overall electricity consumption in Germany will be 80% (currently 65%) by 2030. Power demand will likely increase due to the envisaged electrification of industrial processes and the heat and transport sectors. The expected demand for power from renewable energies in Germany in 2030 is around 600 TWh.

The additional Federal Government proposal to pull forward the goal of the current EEG 2021-that the generation of the entire amount of electricity generated or consumed within Germany shall become climate-neutral prior to 2050, by 15 years, i.e. to 2035 - has been rejected during the Parliamentary discussions. The current 2050 target has also been dropped.

### Expansion path for more than 230 GW additional capacity by 2030

Given that the current share of electricity from renewables is only approximately 42%, the above-mentioned targets shall be achieved through a further massive increase of installed capacity of the different technologies for projects awarded under the EEG and the WindSeeG.

Onshore and offshore wind and solar projects:

Technology	2021 installed capacity (GW)	Old 2030 installed capacity targets (GW)	New installed capacity targets (GW)			
			2030	2035	2040	2045
Solar	56	100	215	309	400	-
Onshore wind	55	71	115	157	160	-
Offshore wind	7.7	20	30	40	-	70

### Special importance of renewable energies for public interest and safety

The EEG 2023 (and likewise the WindSeeG 2023) provides that the construction and operation of renewable energy plants and their associated ancillary facilities are in the overriding public interest and serve public safety. Until electricity generation in Germany is virtually greenhouse gas neutral, renewable energies are, as a general rule, to be included as a priority concern in the balancing of interests by public authorities. As a result, the interest to build a renewable energy plant, e.g. an onshore wind farm, may prevail over the interest in maintaining a clear view of the landscape or in keeping water protection areas free of development.

## **Solar: enhanced conditions for ground-mounted and roof-top solar plants**

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In continuation of the EEG 2021 approach, the EEG 2023 further enhances the conditions for the installation of both ground-mounted solar plants (so-called first segment) and roof-top solar plants (so-called second segment). In this respect, the expansion will be divided equally between the two segments.

### *Extension of eligible areas for ground-mounted solar plants: floating PV and moor PV*

For ground-mounted systems, the range of areas eligible for participation in a tender process, and hence financial support under the EEG, will be moderately expanded, taking into account agricultural and nature conservation aspects. This includes introducing new categories of eligible areas, namely areas eligible for floating PV and moor PV projects.

### *Bonus payments for agri PV and moor PV*

Successful bidders in tenders are, for a 20-year period from commissioning of the plant, entitled to market premium payments from the grid operator which top up the energy-specific average monthly power exchange price and reflect the respective bidder's bid value (pay-as-bid). In addition to that, operators of agri PV and moor PV projects are entitled to bonus payments reflecting the higher costs compared to other PV projects as follows:

- agri PV: from 0.5 ct/kWh (for projects awarded in 2026 to 2028) to 1.2 ct/kWh (for projects awarded in 2023) and
- moor PV: 0.5 ct/kWh.

### *Increased acceptance through financial participation of municipalities also for PPA projects*

Whilst the EEG 2021 already allows solar farm and onshore wind farm developers who benefit from financial support under EEG to offer the affected municipalities a financial participation in the project revenues, this instrument to increase the acceptance of renewable energy projects will be extended to projects which do not benefit from financial support under the EEG, i.e. are financed through Corporate PPAs, under the EEG 2023.

Project developers may offer payments of up to 0.2 ct/kWh of the electricity generated by the plant. The municipalities are free to decide for which purposes they use such payments. For plant operators who benefit from financial support under the EEG, the payments are economically neutral as they may request refunding of the paid amounts from the grid operator. Plant operators who sell the generated power under Corporate PPAs are not entitled to such refunding by the grid operator (i.e. will consider the payments during the negotiation of the PPA price).

## **Onshore wind: incentives for use of additional areas**

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The development of onshore wind projects in Germany has been hampered for multiple reasons over the last few years, in particular through minimum distance requirements to housings set by the German States. To reach the target of 115 GW installed onshore wind capacity by 2030, several incentives for the use of additional areas will apply in the future.

### *Obligation of German States to make available areas*

2% of the territory of Germany shall be used for onshore wind farms by 2032 (currently only 0.8% is used). In this vein, the new Wind Energy Area Requirements Act (Windenergieflächenbedarfsgesetz – WindBG) requires the Federal States to designate sufficient areas (ranging from 1.8 to 2.2% of their respective areas, with an exception for Berlin, Bremen and Hamburg where 0.5% needs to be designated). If the Federal States fail to meet the targets by the respective deadlines in 2027 and 2032, legal obstacles (in particular minimum distance requirements under State law) that stand in the way of the expansion of onshore wind will be overridden.

### *Potential use of landscape protection areas*

Further facilitations are brought about by amendments to the Federal Nature Conservation Act (Bundesnaturschutzgesetz – BNatSchG). For example, under certain circumstances protected areas (landscape conservation areas) will in future be open to the expansion of wind energy. In addition, detailed specifications are now made on the distance to be maintained from certain bird

species.

#### *Improvement of reference yield model for low-yield sites in South Germany*

In addition, the reference yield model, which will allow developers of low-yield sites to compete, via a correction factor, with developers of high-yield sites in the tender processes, will be amended in a way to incentivize the development of onshore wind farms in South Germany.

The lowest yield value which benefits from a correction factor to be comparable with a 100% yield project is, in principle, 60%. However, projects located in defined areas in South Germany will, under the EEG 2023, benefit from a correction factor that makes 50% yield projects comparable with 100% yield projects.

### **Offshore wind: acceleration through introduction of second tender scheme**

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To achieve the new offshore wind capacity expansion targets, the existing tender scheme for so-called pre-examined sites will not only be modified but also complemented by a second tender scheme for non-pre-examined sites.

#### *Tenders for pre-examined sites: PPA plus payments to TSO*

The Federal Network Agency (Bundesnetzagentur – BNetzA) tenders sites which have been pre-examined by the Federal Maritime and Hydrographic Agency (Bundesamt für Seeschifffahrt und Hydrographie – BSH). Therefore, bidders receive detailed information on the marine environment, the seabed and the wind and oceanographic conditions of the relevant sites.

In deviation from the previous version of the WindSeeG, pre-examined sites will no longer be promoted via the so-called market premium. With the WindSeeG 2023 entering into force, the award will therefore not be given to the bidder who submits the lowest bid, but to the bidder who wins the selection procedure according to the following qualitative criteria:

- highest bid value in EUR (up to 60 points)
- contribution to the decarbonisation of the offshore wind energy expansion, based on the share of power from renewable energies and, as the case may be, green hydrogen in the wind turbine generator production process (up to 10 points)
- PPA volume contracted with third parties (up to 10 points)
- low noise pollution during foundation ramming and seabed impact (up to 10 points) and
- contribution to skilled workers training, based on share of trainees in the workforce (up to 10 points)

Successful bidders have the exclusive right to carry out the planning consent procedure (Plangenehmigungsverfahren) for the tendered site as well as a grid connection claim against the responsible transmission system operator (TSO).

The plant operators will sell the generated power plus the corresponding GoO under PPAs, whereas the PPA prices will have to cover the amounts which the plant operator must pay, based on the respective bid value, as follows:

- 5% of bid value within 12 months after award to the federal budget (for marine conservation)
- 5% of bid value within 12 months after award to the federal budget (for eco-friendly fishery) and
- 90% of bid value in annual instalments over 20 years from operational readiness of first wind turbine generator to the TSO (for reduction of electricity costs).

The step-in rights held by owners of so-called existing projects can still be exercised under the WindSeeG 2023. In the event that a step-in right is executed, the entering party assumes the obligation to pay the bid value offered by the originally awarded bidder; however, the entering party will not have to comply with the qualitative criteria of the originally awarded bidder but will be bound by its own stated criteria.

#### *Tenders for non-pre-examined sites: market premium from TSO*

Tenders for non-pre-examined sites, i.e. where bidders need to gather relevant site information individually, will be held by the BNetzA from 2023 onwards. The sole award criterion is the lowest bid value in ct/kWh. Successful bidders will have the exclusive right to carry out the planning approval procedure (Planfeststellungsverfahren) for the tendered site with the BSH in accordance with their project description, as well as a grid connection claim against the TSO. In addition, they are in principle entitled to market premium payments for a 20-year period from commissioning, which top up the average monthly market value for offshore wind to the respective bid value. As an alternative to the market premium model (in particular in the event of zero cent bids), plant operators may sell the generated power, plus the corresponding guarantees of origin (GoO), under PPAs.

The Federal Government proposal to replace the market premium model by a contract-for-difference model from 2023 onwards, which was widely welcomed by the industry players, has been rejected during the Parliamentary discussions. On the other hand, the WindSeeG 2023 entitles the Federal Government to introduce, via an ordinance which is subject to Parliament approval, alternative rules for pre-examined sites, in particular with respect to alternative power marketing forms. These may include contracts for difference as well as a mechanism for the supply of power and GoOs to industry players (as the case may be, against implementation of decarbonisation projects by these off-takers).

#### *Enhanced permit extension rules*

The permits granted by the BSH have a term of 25 years. Whilst under the current WindSeeG extensions of up to five years are possible, the revised act allows for up to ten-year extensions if the applicable area development plan does not foresee an immediate subsequent use of the site and the operability of the grid connection is secured. When deciding on the extension of the permit, the BSH shall consider repowering measures that have been carried out.

## **Hydrogen: introduction of new tender schemes**

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The reform also reflects Germany's ambitions to become a hydrogen industry leader through the introduction of new tender schemes, which will complement the tenders for offshore sites without power grid connection under the Other Energy Production Sites Ordinance (Sonstige-Energiegewinnungsbereiche-Verordnung – SoEnergieV) of September 2021.

#### *Tender scheme for innovative hydrogen-based storage*

In addition, a new tender scheme for innovative concepts including a hydrogen-based electricity storage will be introduced to promote plant combinations of onshore wind turbines or solar plants with a chemical electricity storage system using hydrogen as the storage gas. The tender volumes will increase from 400 MW in 2023 to 1,000 MW in 2028. Whilst the details will still have to be regulated in an ordinance, the key requirements of the new scheme will be the following:

- the stored hydrogen has been produced exclusively by electrolysis from the electricity of the other plants of the plant combination,
- the stored hydrogen has not previously been fed into the grid,
- the stored hydrogen is used exclusively for the production of electricity; and
- only the hydrogen produced and stored in the chemical storage system is used for the production of electricity.

#### *Tender scheme for power generated from green hydrogen*

In addition, a new tender scheme for the generation of power from green hydrogen will be introduced, subject to determination of the tender details in an ordinance. The tendered volumes shall increase from 800 MW in 2023 to 1,400 MW in 2026.

Green hydrogen is defined as hydrogen that is electro-chemically produced by the consumption of electricity from renewable energy sources (in accordance with the requirements determined in an ordinance), whereby the hydrogen may also be stored chemically or physically in other energy carriers for storage or transport.

The long-term hydrogen network development planning shall secure the connection of the sites of awarded projects to the extent the connection of the site contributes to the safest, cheapest, consumer-friendly, efficient and environmentally compatible grid-based supply of the general public with electricity, gas and hydrogen, which is increasingly based on renewable energies.

To consider the limited availability of green hydrogen during the ramp-up phase of the hydrogen industry, the market premium payable to the plant operator shall only be payable for the annual amount of power that could have been produced with up to 10% of the installed plant capacity.

## **Outlook**

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The adoption of the current reform still before the Parliamentary summer break underlines its importance for Germany's path to net zero. However, its completion is still subject to determination of important aspects in several ordinances, which stakeholders should closely monitor. Likewise, further legislative amendments are already underway: after the "Easter Package" with the EEG 2023 and WindSeeG 2023 and the "Summer Package" with the Onshore Wind Energy Act, a further acceleration package that is to digitalise planning and approval procedures, better equip the authorities with personnel and simplify administrative processes has been announced for fall 2022.

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