

# The Offshore Wind Revolution

Executive Summary

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EnergyTransition-Tracker

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Offshore wind energy is crucial for achieving the EU's and Germany's energy and climate targets for 2030 and 2050. It will help reduce dependency on imported fossil fuels and become indispensable to the energy mix necessary for decarbonization and achieving climate neutrality.



## Expansion Targets and Challenges in Germany

Germany aims to install 30 GW of offshore wind capacity by 2030. However, projections indicate that only 17.5 GW will be installed by 2029, leaving more than 8 GW short of the target by 2030. The target will likely be achieved in 2031; however, this is contingent on supplier capacity development and actual project realization.



## Economic Considerations for Offshore Wind Projects

Competitive tenders for offshore wind sites lead to smaller risk buffers on the side of project developers, with final investment decisions (FID) made 2-3 years before project commissioning and 3-5 years after tender award. Assumptions about investment costs, power and prices, operating costs, and financing costs play a crucial role, as illustrated in a case study presented in PwC's White Paper\*. The latest tenders in Germany led to high auction revenues, especially for non-centrally pre-screened areas, concentrating projects among a few players.



## Key Value Drivers and Risks

The Levelized Cost of Energy (LCOE) for offshore wind projects includes all costs over a power plant's lifetime. Changes in key parameters like capital expenditure (CAPEX), full load hours, and the weighted average cost of capital (WACC) can render a project uneconomical when the FID is to be taken, underscoring the necessity for robust safety buffers. High concession payments increase the risk of projects becoming financially unviable at the time of the FID and thus being abandoned. This would endanger the German offshore wind expansion targets.

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## Importance of Stable Investment Conditions

Achieving the ambitious offshore expansion targets at European and German level requires a rapid ramp-up across the entire value chain, including wind turbine manufacture, ports, vessels, raw materials, and more. Stable and favorable investment conditions, including government support, international coordination, and improved financing conditions, are crucial for success. The potential involvement of Chinese suppliers may alleviate supply constraints and cost pressures but also raises security of supply concerns.



## Considerations for Future Auction Design

Retroactive adjustments in concession payments based on external developments could mitigate commercial and financial risks that otherwise might endanger project realization. Given their importance as key value drivers, concession payments in future auctions could be adjusted, for example, based on changes in market interest rates, producer prices and expected shading losses (or wake effects).



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