Germany’s 2024 Offshore Wind Auction Results

An initial review of the August auction round

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Agora Energiewende – about us

Who we are:
Agora Energiewende is a think tank, policy lab, and part of the **Agora Think Tanks.**

What we do:
We develop **scientifically sound** and **politically feasible strategies** for a successful pathway to **climate neutrality** in the power and buildings sector – in Germany, Europe and internationally.

How we work:
We are independent and non-partisan, with a diverse financing structure – **our only commitment is to climate action.**

Where we take action:
Agora Energiewende has offices in Berlin, Brussels, Beijing and Bangkok, and cooperates internationally with more than 20 partner organisations

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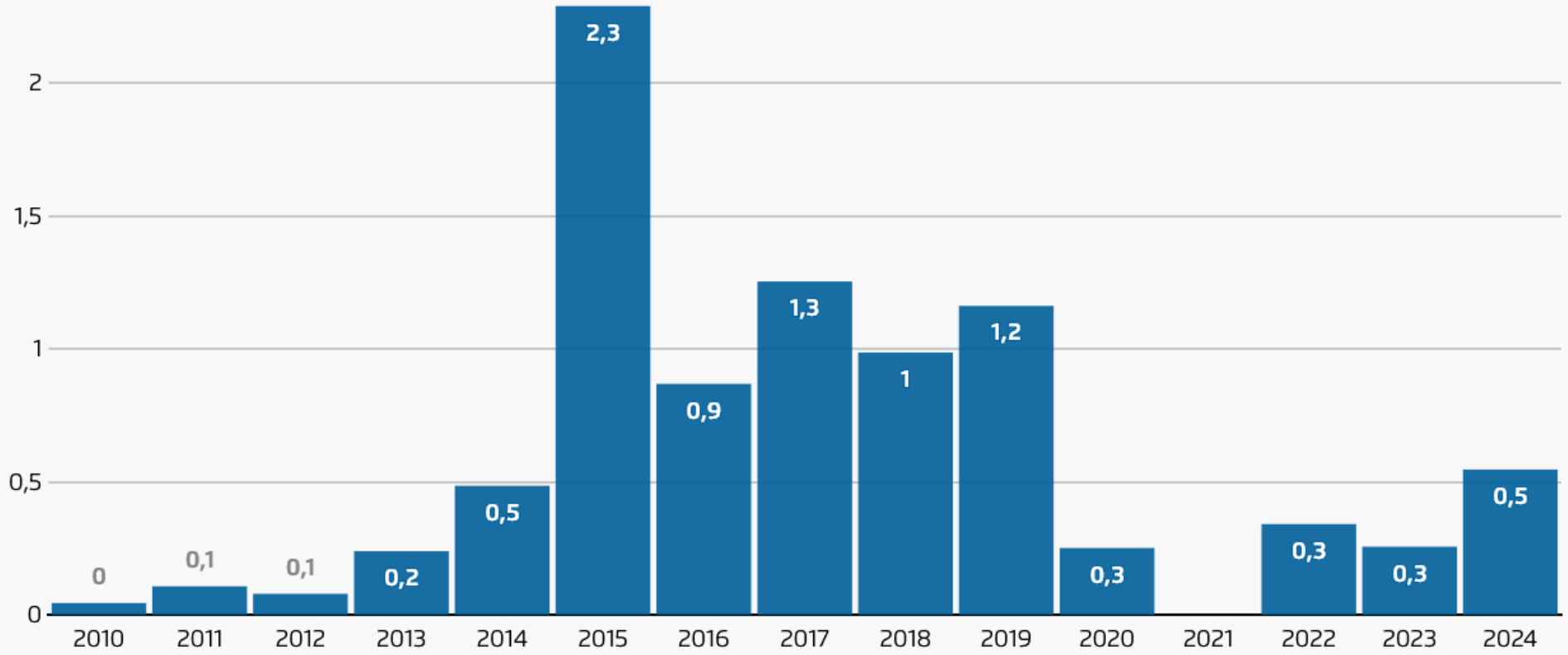
Offshore Wind –
Historic and Planned Capacities

German Offshore Wind Deployment - Where do we come from?

Historic offshore wind expansion
[GW per year]



 MaStR (2024) • Datenstand: 13.08.2024. Auf eine Dezimalstelle gerundet.

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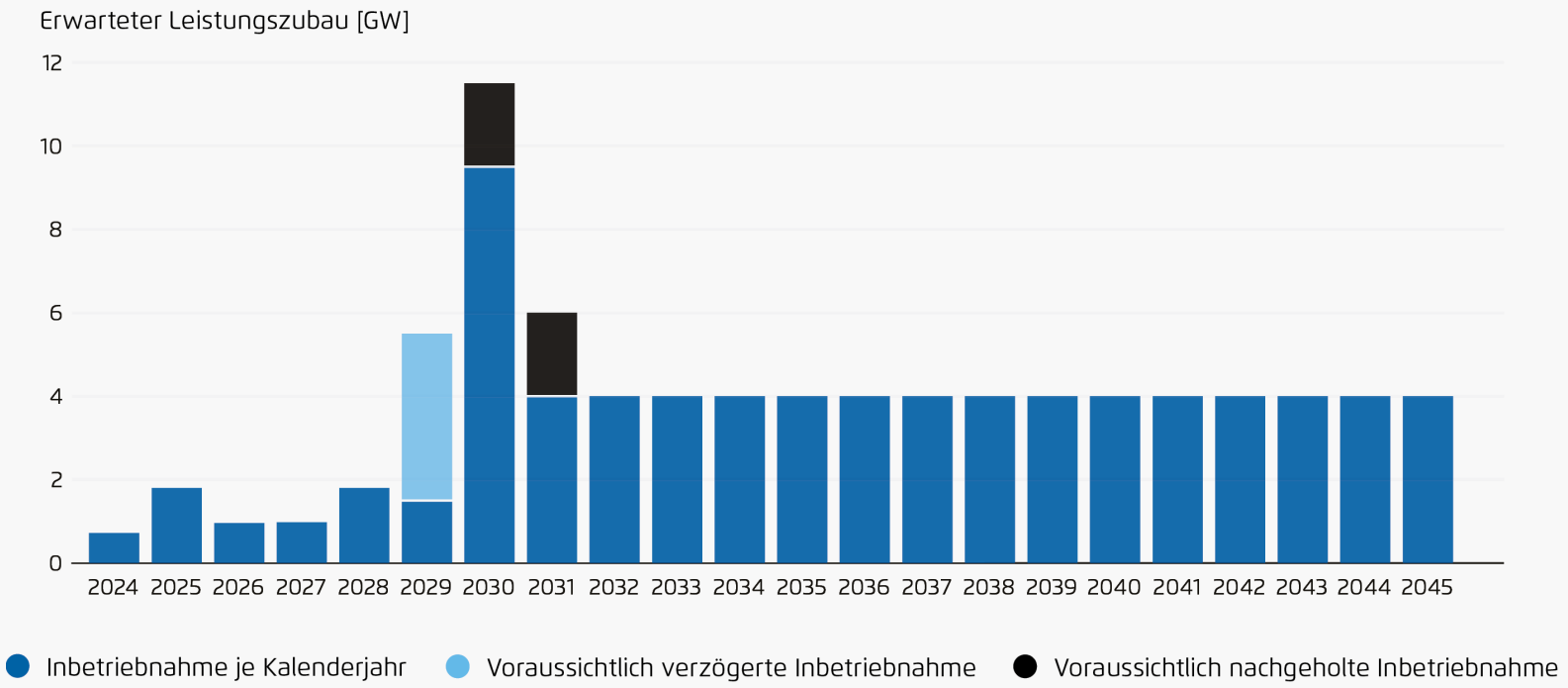
…and: Where do we want to get to?

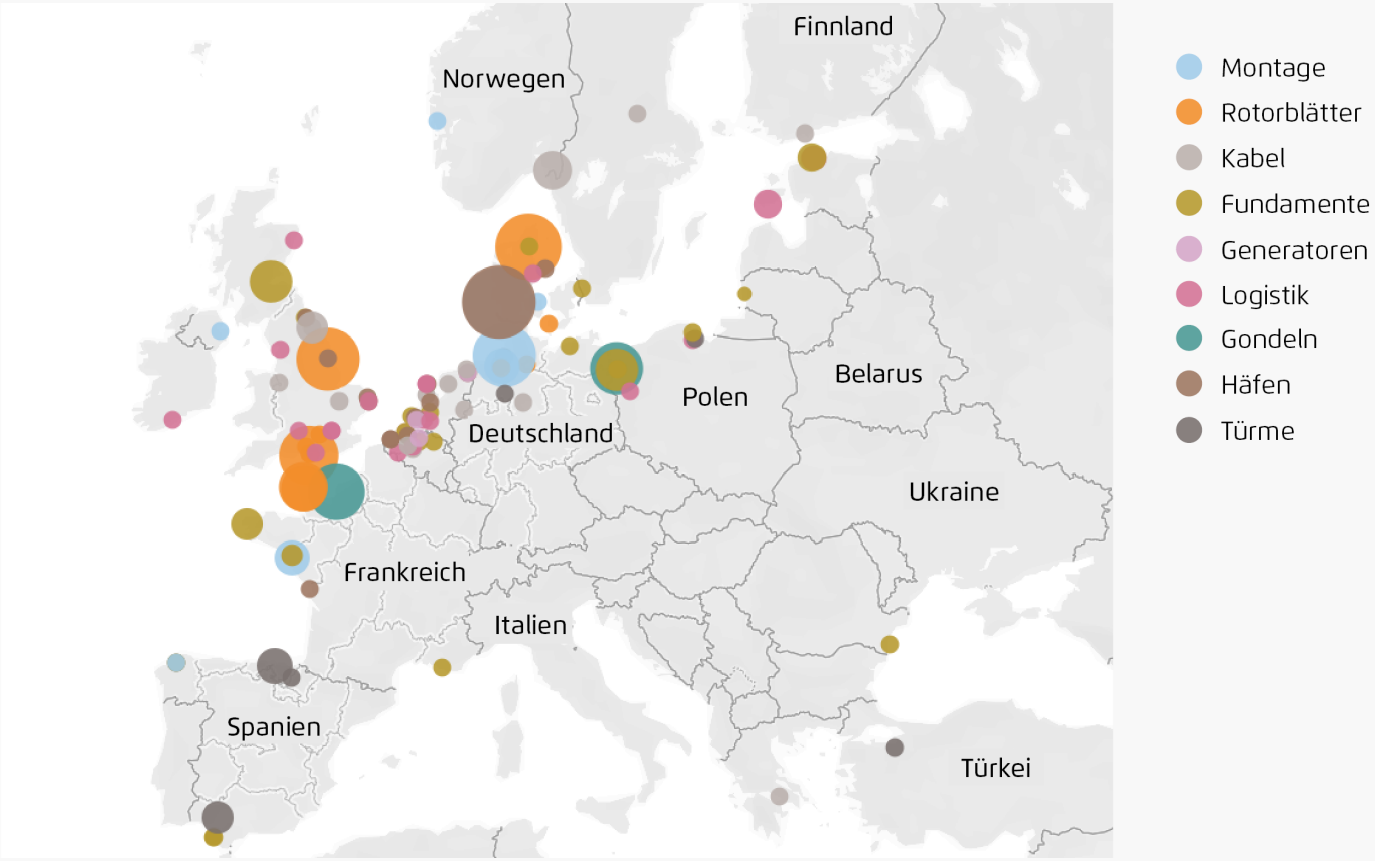
Expected time of commissioning based on the grid connection planning



- → Existing (European) supply chains are not sufficient for expansion and competition for capacity is increasing.
- → A lack of uniformity in expansion makes it difficult to build up production capacities sustainably.
- → How can investments in sufficient supply capacities be supported to cope with the peak?

There is a need for expansion along the entire supply chain

Lieferkette für Offshore-Windenergie in Europa



- → Strong expansion of European production capacities required
- → Turbines: doubling to 1 300 units/year
- → Foundations: quadrupling to 1 200 units/year
- → Cables: doubling to 1 000 km of export cables and 2 160 km of in-farm cables
- → According to Wind.Europe, the 2027-30 annual expansion target of 24 GW stands against current capacities of only 7 GW

 Wind.Europe (2024). Anmerkung: Die Größe der Kreise ist abhängig von der Anzahl an Arbeitsplätzen je firmenspezifischer Standort / Fabrik

Auction results

Looking back:
2023 tenders with high price variations and record peaks

Tenders 2023

Fläche Area	Kapazität Capacity [MW]	Voruntersucht? Pre-Examined?	Eintritts-recht Entry right	Gebot Fläche Bid [EUR]	Flächenpreis Arear price [EUR/MW]	Ausschreibung Auction	Gewinner Winner
N-11.1	2.000	-	-	3,66 Mrd. /bn.	1,83 Mio.	Juni	bp
N-12.1	2.000	-	-	3,75 Mrd. /bn.	1,875 Mio.	Juni	Total Energies
N-12.2	2.000	-	-	3,12 Mrd. /bn.	1,56 Mio.	Juni	bp
O-2.2	1.000	-	-	2,07 Mrd. /bn.	2,07 Mio.	Juni	Total Energies
N-3.5	420	Ja / yes	Ja / yes	0		August	RWE
N-3.6	480	Ja / yes	Ja / yes	0		August	RWE
N-6.6	630	Ja / yes	Ja / yes	784 Mio.		August	RWE (-> Vattenfall)
N-6.7	270	Ja / yes	-			August	Luxcara

Overview of tender results 2024

Tenders 2024

Fläche Area	Kapazität Capacity [MW]	Voruntersucht? Pre-Examined?	Gebot Fläche Bid [EUR]	Flächenpreis Arear price [EUR/MW]	Ausschreibung Auction	Gewinner Winner
N-11.2	1.500	-	1,9 Mrd. / bn.	1,305 Mio.	Juni	Offshore Wind One (Total Energies)
N-12.3	1.000	-	1,065 Mrd. / bn.	1,065 Mio.	Juni	EnBW Offshore
N-9.1	2.000	Ja / yes	250 Mio.	62,5 Mio.	August	Offshore Wind Four (RWE)
N-9.2	2.000	Ja / yes		62,5 Mio.		Offshore Wind Two (RWE)
N-9.3	1.500	Ja / yes	?	?	August	Waterekke Energy (Luxcara)

BNetzA published the results of the August tender on 12 August

→ 5.5 gigawatts of total volume were put out to tender on three pre-examined areas
→ 60 per cent was determined via the financial bid value
→ Qualitative criteria were applied, which were applied for the first time
(entry rights already existed for these areas in 2023)

1. **Contribution to the decarbonisation of the expansion of offshore wind energy** (share of the total electricity demand of the manufacturing process for the wind turbines that is at least covered by unsubsidised electricity from renewable energies) -> in per cent
2. **Volume of energy generated on the tendered area supplied to other companies** -> in GWh
3. **Foundation technology used** (proportion of the total number of installations that were at least not founded by means of impulse pile driving or heavyweight foundation) -> in per cent
4. **Contribution to securing skilled labour** (proportion of apprentices at the time of bid submission) -> in percent

Analysis

Evaluation of willingness to pay

Area price per megawatt

Surface area	Area price in EUR/MW	Invitation to tender
N-11.1	1.83 million	2023 June
N-12.1	1.875 million	2023 June
N-12.2	1.56 million	2023 June
O-2.2	2.07 million	2023 June
N-11.2	1.305 million	2024 June
N-12.3	1.065 million	2024 June
N-9.1	0.063 million	2024 August
N-9.2	0.063 million	2024 August
N-9.3	?	2024 August

→ Willingness to pay lower in the August round

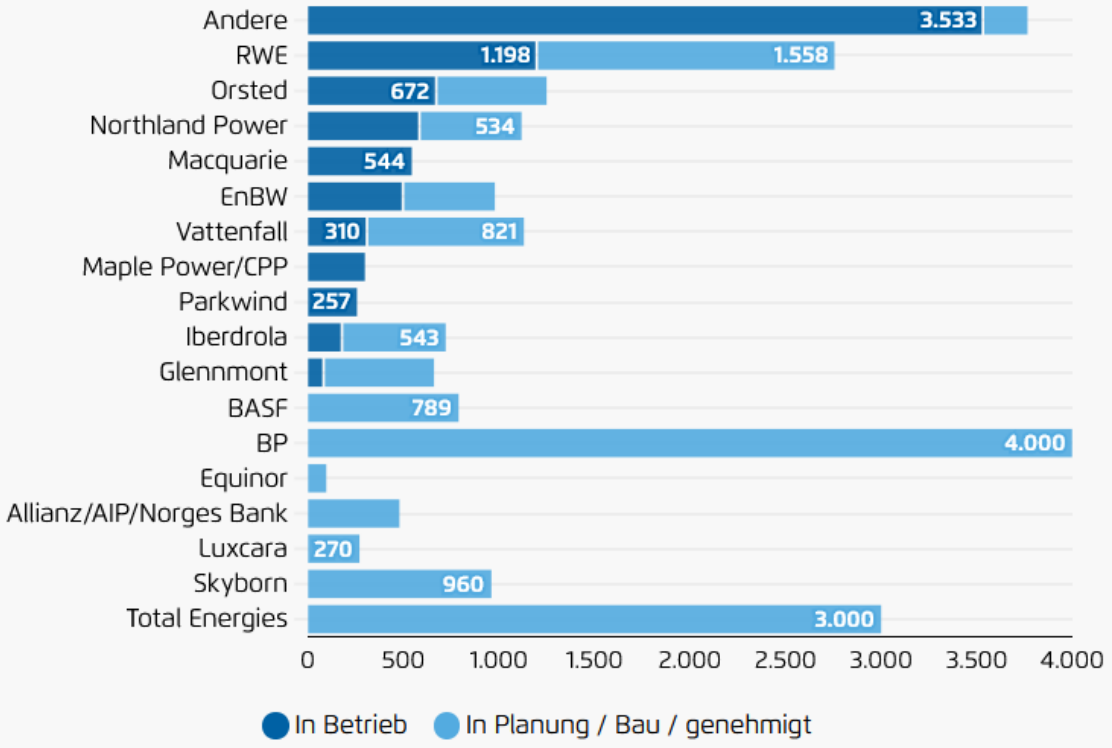
→ The use of qualitative criteria also leads to financial competition between bidders, which is also priced in

→ The prerequisite for this is that there is competition between the bidders

→ If designed accordingly, qualitative criteria can not only contribute to the generation of ideas for innovative processes, but they will also lead to the same extent as the use of a financial bid component to the bidders using expected "producer rents" in line with the Federal Government's objectives

Evaluation of stakeholder diversity

Overview of the largest developers/project owners in the German offshore wind market



→ Players from the 2023 and 2024 auctions are predominantly new players in the German offshore wind market.

→ A total of five bids were submitted for the three sites in the August tenders.
- one for area N-9.1 and
- two each for areas N-9.2 and N-9.3

→ Around eight bidders per round took part in the June tenders.

→ Is attractiveness waning?
- Challenges: changed market situation (supply chain), qualitative criteria, wake effects … ?

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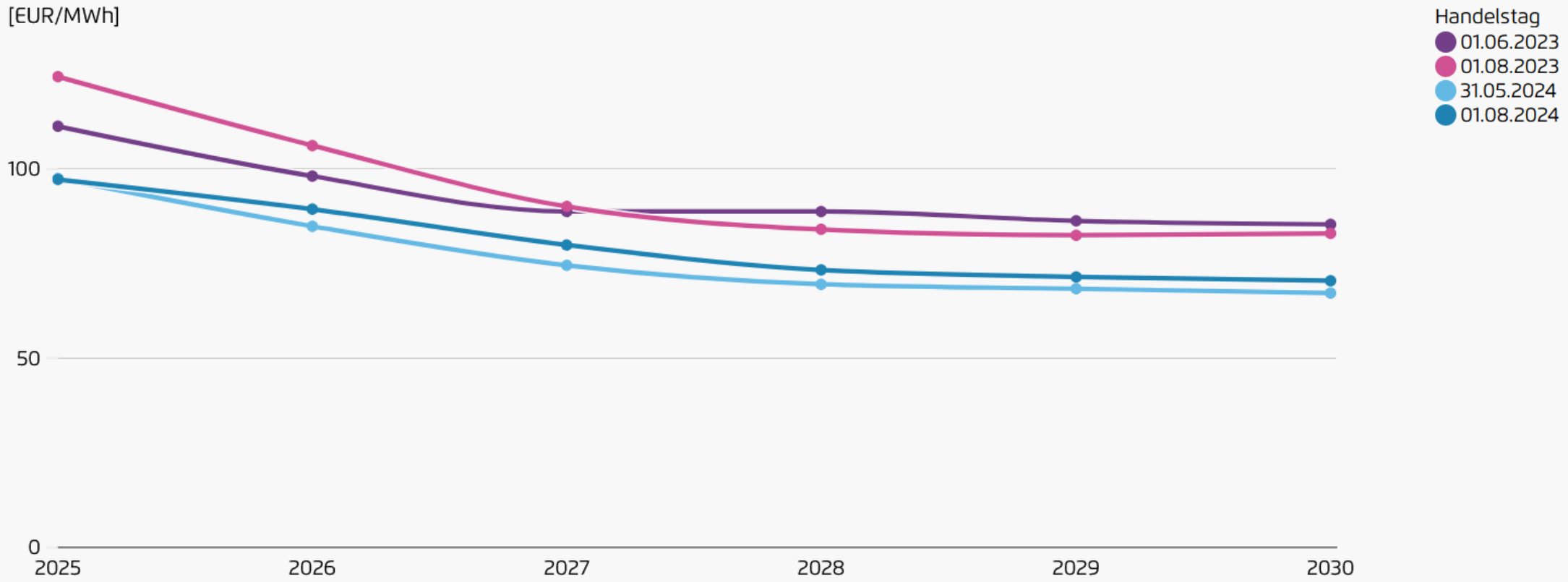
Forward market prices for electricity on auction dates



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Evaluation of qualitative criteria and transparency

1. Qualitative criteria lead to a "natural" bid cap
2. Qualitative criteria can also include a financial component
3. Lack of transparency in tender results with regard to qualitative criteria

The effect of award criteria

	Competition for the amount of contributions	Competition for ideas
Lot procedure (WindSeeG 2020)		
Financial bid component	**x**	
Qualitative bid component	**x**	**x**

Evaluation of the attractiveness of the areas

→ Area designation and planning takes place at national level

→ Challenge for existing and future facilities, especially in the German EEZ in the North Sea
- Studies predict a significant reduction in full load hours in some cases
- Quality of the areas varies greatly - focus has so far been on installed capacity (GW) and not on energy generation (GWh)

→ In the North Sea, the expansion in the Netherlands in particular will also have an impact on yields in the German EEZ.

How can the expansion be designed to reduce the (economic) impact of shadowing effects?

Agora Study 2020: Making the Most of Offshore Wind

National and international expansion influence yields in the German EEZ

- Evaluation of different scenarios for offshore wind energy in the German Bight of the North Sea: ranging from 13.8 to 144.8 GW of installed capacity.
- Investigating the extent to which the scenario yields are lowered by reduced wind speeds due to the effects of wind turbines, which extract kinetic energy from the atmospheric flow.
- These reductions are more moderate – 82–85 % of the yield from an isolated turbine – in the case of the scenario with the lowest installed capacity (13.8 GW). The reductions rise as installed capacity increases. By the high scenario (144.8 GW), reductions amount to 42 – 48 % of the yield from an isolated turbine.
- **Conclusion:** wind speed reductions need to be considered in German energy scenarios for offshore wind energy in view of the fact that they substantially lower expected yields.

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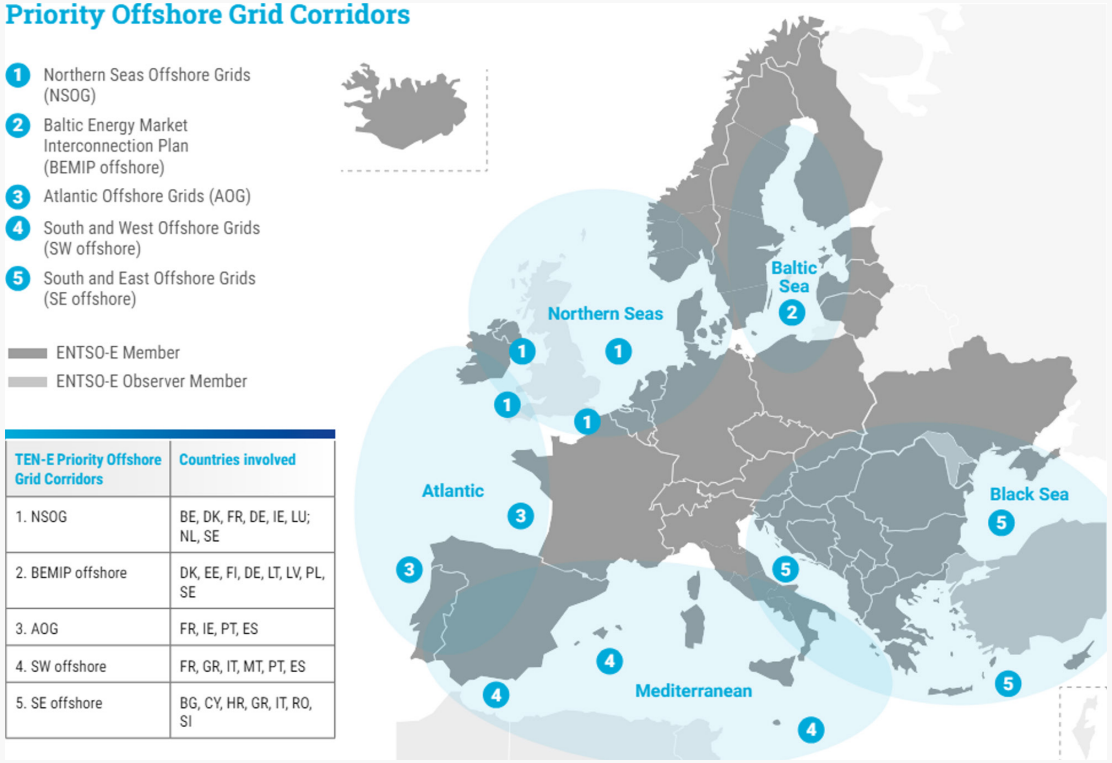
Design of an international grid is still in its infancy, but the political will already exists - efficient integration into the electricity grid

- → Political will for international meshing exists
  - Regional cooperation and planning to be intensified
- → Entso-e expects around 14% of offshore renewables to be connected via hybrid grid connections by 2050
- → Few projects exist so far, learning effects will arise during further project development and lead to further regulatory developments, among other things

Where are hybrid network connections suitable? How quickly are the framework conditions evolving?

Increasing focus on regional planning



TEN-E Priority Offshore Grid Corridors	Countries involved
1. NSOG	BE, DK, FR, DE, IE, LU; NL, SE
2. BEMIP offshore	DK, EE, FI, DE, LT, LV, PL, SE
3. AOG	FR, IE, PT, ES
4. SW offshore	FR, GR, IT, MT, PT, ES
5. SE offshore	BG, CY, HR, GR, IT, RO, SI

Entso-e (2024), TYNDP 2024 Offshore Network Development Plans, S.13.

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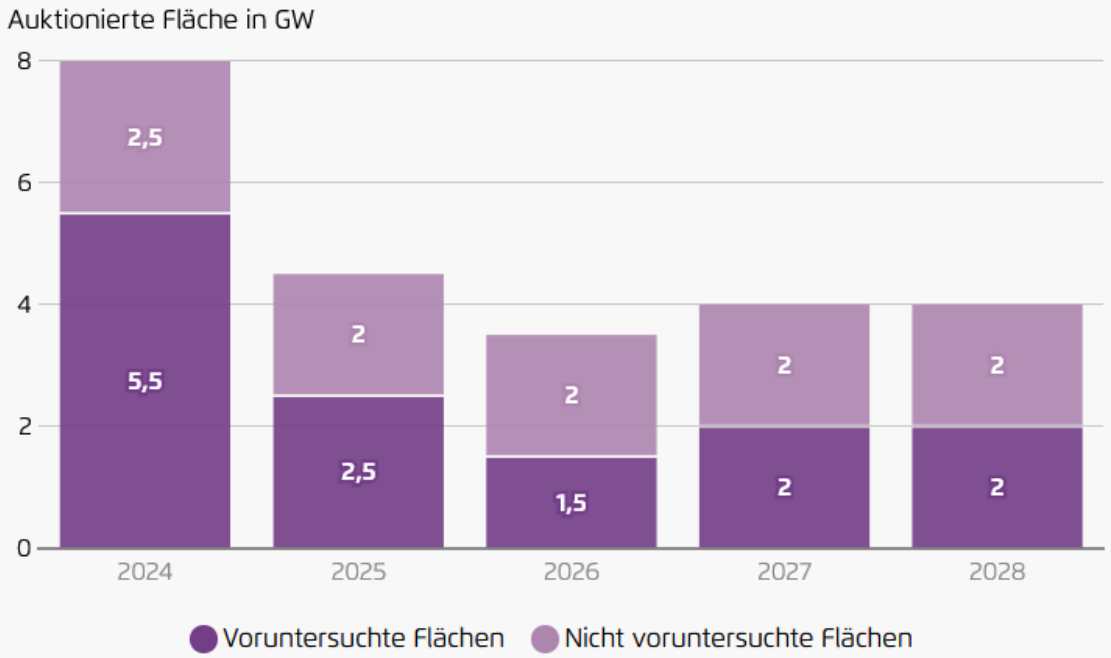
Looking ahead

The next calls for tenders

Allocation of capacities to be auctioned in Germany in the coming years



- → The areas for the 2030 have now been allocated – focus for these projects now shifting to ensuring construction
- → In the coming years, there will be a June and an August tender with 2 GW each
- → A maximum of two bidders (or consortia) will be awarded the contract

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Agora Offshore-Analysis 2024: Meer-Wind für Klimaneutralität

More wind at sea for climate neutrality

- Published end of July 2024 together with Nera Economic Consulting

1. The first part of this report provides an overview of the status quo of offshore wind energy and describes the main challenges in terms of grid connection, supply chain bottlenecks and the use of offshore wind energy for hydrogen production.

2. The second part identifies and discusses the main risks and obstacles to further expansion and shows possible solutions.

3. The third part outlines measures to address these challenges.

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Results at a glance

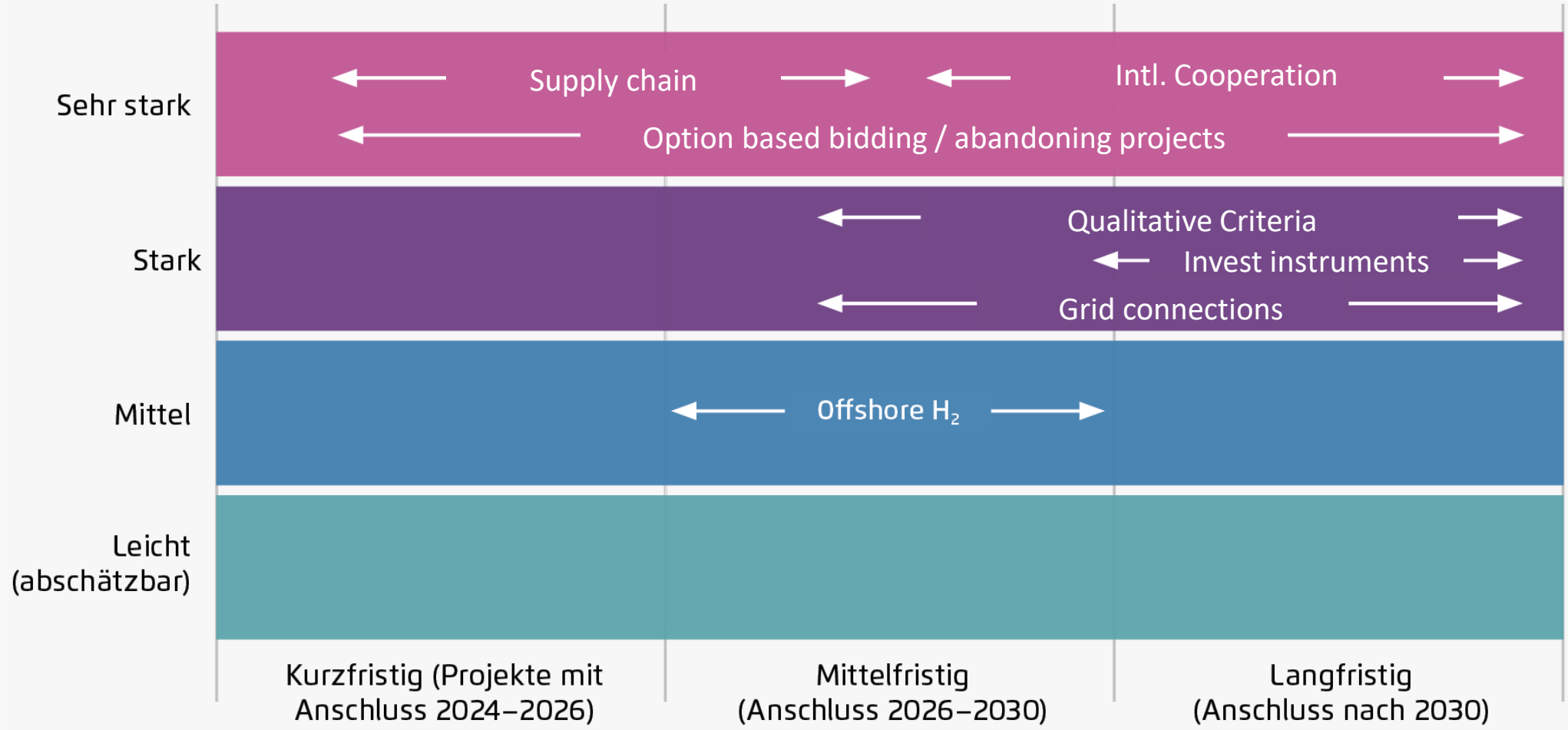
1 **In order to achieve the target of 30 gigawatts of offshore wind power by 2030 and 70 gigawatts by 2045, high levels of investments in wind turbines, grid connections and logistics are required.** There is currently still a gap between ambition and implementation: suppliers of key components are struggling to ramp up production quickly enough and grid operators have already announced that the grid connection of wind farms will be delayed by one to two years.

2 **In order to prevent further delays in offshore construction until 2030, the German government should strengthen the supply chain swiftly and in a focussed manner.** This includes the expansion of KfW's guarantee and loan programs - especially for medium-sized suppliers, the secure financing of additional port capacities and the continuation of the expansion after 2030 at a high level. This will create planning security.

3 **Adjustments to the tender design can facilitate project implementation and secure expansion in the 2030s.** Standardized tendering criteria across Europe can promote the manufacturing industry in Europe and the environmental and social sustainability of projects. The introduction of a two-sided hedging instrument in line with EU requirements can also protect investments in the event of rising project costs or falling market revenues.

4 **In order to achieve the 70 gigawatt target cost-effectively, the expansion should also be made possible outside the German exclusive economic zone.** This requires successful cooperation with neighboring countries in order to address shading effects and conflicts with shipping or environmental protection areas, for example. The efficient use of infrastructure and generated energy requires a European legal basis for grid connections in several countries (hybrid projects) and a review of offshore bidding zones.

Risks for project implementation and challenges for achieving the 2030 and 2045 expansion targets



Agora Energiewende and NERA (2024). *This report looks at the issue of project abandonment in the context of option-based bidding. In particular, projects that have not been centrally pre-investigated can also be canceled if, for example, an area proves to be unbuildable during the preliminary investigation.

Next steps: Revision of the German auction design also due to pressure from the EU

→ Net Zero Industry Act and the Wind Power Package demands on national tendering systems:
- Avoidance of unlimited negative bidding procedures
- Use of qualitative prequalification and tendering criteria
- Maximizing the probability of realization

→ EU guidelines on electricity market design emphasize the role of CfDs (or equivalent systems) and the strengthening of the PPA market

→ Increasing influence of the Commission on the tender design

Federal Government Growth Initiative - Tender design is to be evaluated.

Thank you for your attention

Do you have any comments or questions?

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