Analysing the results of the August 2025 tenders

centrally pre-investigated sites

Part II

BWO EXPERTISE

with ***Frontier Economics Limited***

Matthias Janssen

frontier economics

Online

20th August 2025

10:00 a.m.

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Agenda

Failed German offshore wind auction in August 2025

Implications for way forward

The latest German wind offshore auction failed to attract any bids


Reuters

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German minister flags risks to tenders as offshore auctions draw no bids

By Riham Alkousaa

August 6, 2025 3:11 PM GMT+2 · Updated August 6, 2025


Bloomberg UK

Wind Power: Trump Renewables Attack | Asia's $100 Billion Supergrid | Scottish Success

Green

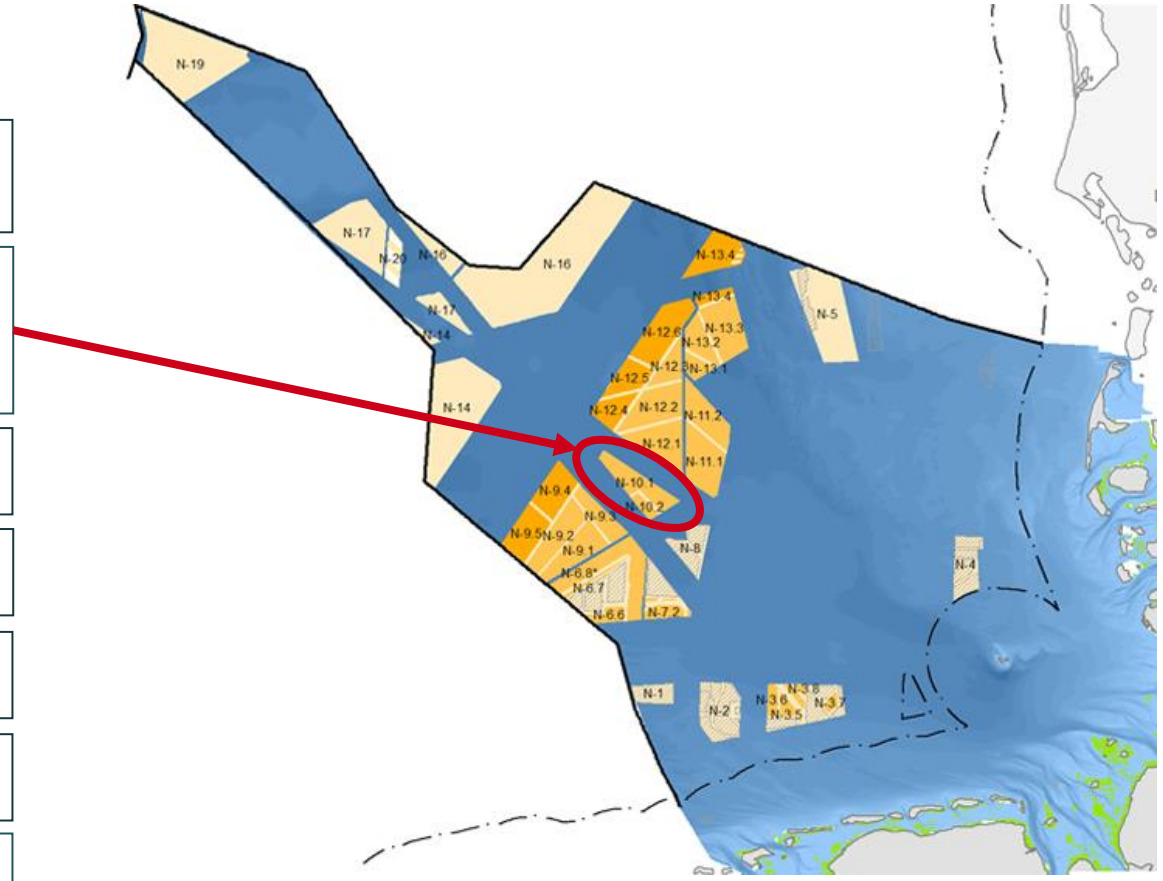
Germany Gets No Bids in Zero-Subsidy Offshore Wind Auction

... and will need to be repeated next year

https://www.reuters.com/sustainability/climate-energy/german-minister-flags-risks-tenders-offshore-auctions-draw-no-bids-2025-08-06/
https://www.bloomberg.com/news/articles/2025-08-06/germany-gets-no-bidders-in-zero-subsidy-offshore-wind-auction
https://www.telegraph.co.uk/business/2025/08/07/german-wind-auction-flop-sparks-fears-for-milibands-uk-sale/

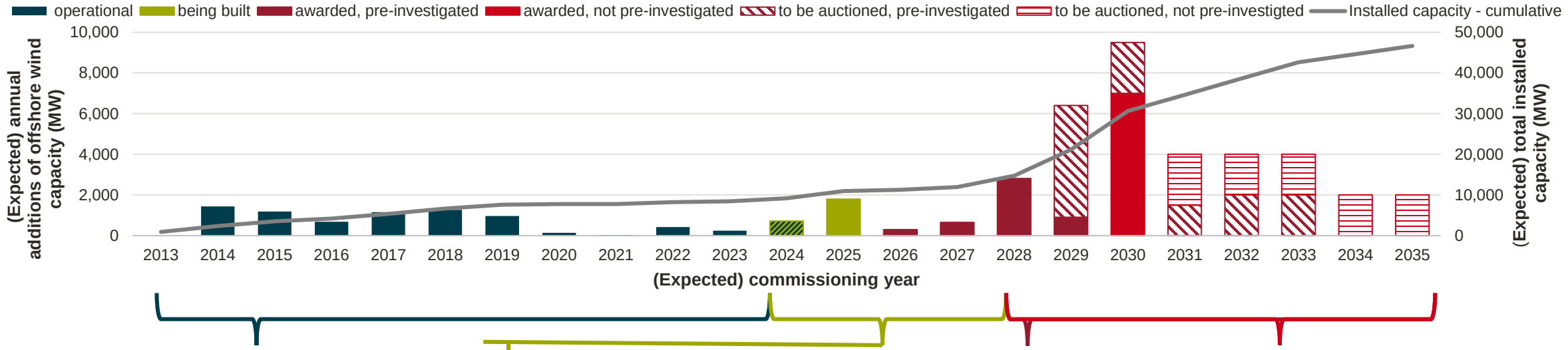
What happened? The German government tried to tender 2.5 GW wind offshore generation capacity in two areas in the North Sea, but no bids were submitted

Submission deadline	1 August 2025 No bids submitted
Tendered product	Right to use seabed of **pre-investigated** areas: N-10.1 & N-10.2
No support	No support payments (but grid connection included)
Auctioned capacity	**2.5** GW in total (N-10.1: 2 GW, N-10.2: 0.5 GW)
Expected full load hours	2,700 to 3,000*
Timelines	COD by 2030 (N-10.2) and 2031 (N-10.1)
Award criteria	Price (60%) & qualitative (40%) criteria



[1] According to an analysis by Fraunhofer IWES (https://www.offshore-windindustrie.de/news/ticker/offshore-ausschreibung-floppt-erstmals-keine-gebote-fuer-offshore-wind-ausschreibung-reformdruck-steigt-artikel7678)

For context: Germany changed their wind offshore design in 2023 from support payments for OWF developers to payments by developers for the right to build OWFs



Before 2017: no tenders

- **8 GW** in operation with sliding-scale premium administratively set before introduction of tenders
- "Strike price" for premium ranging from **14.9** to **18.9 ct/kWh** from state to OWF

WindSeeG 2017

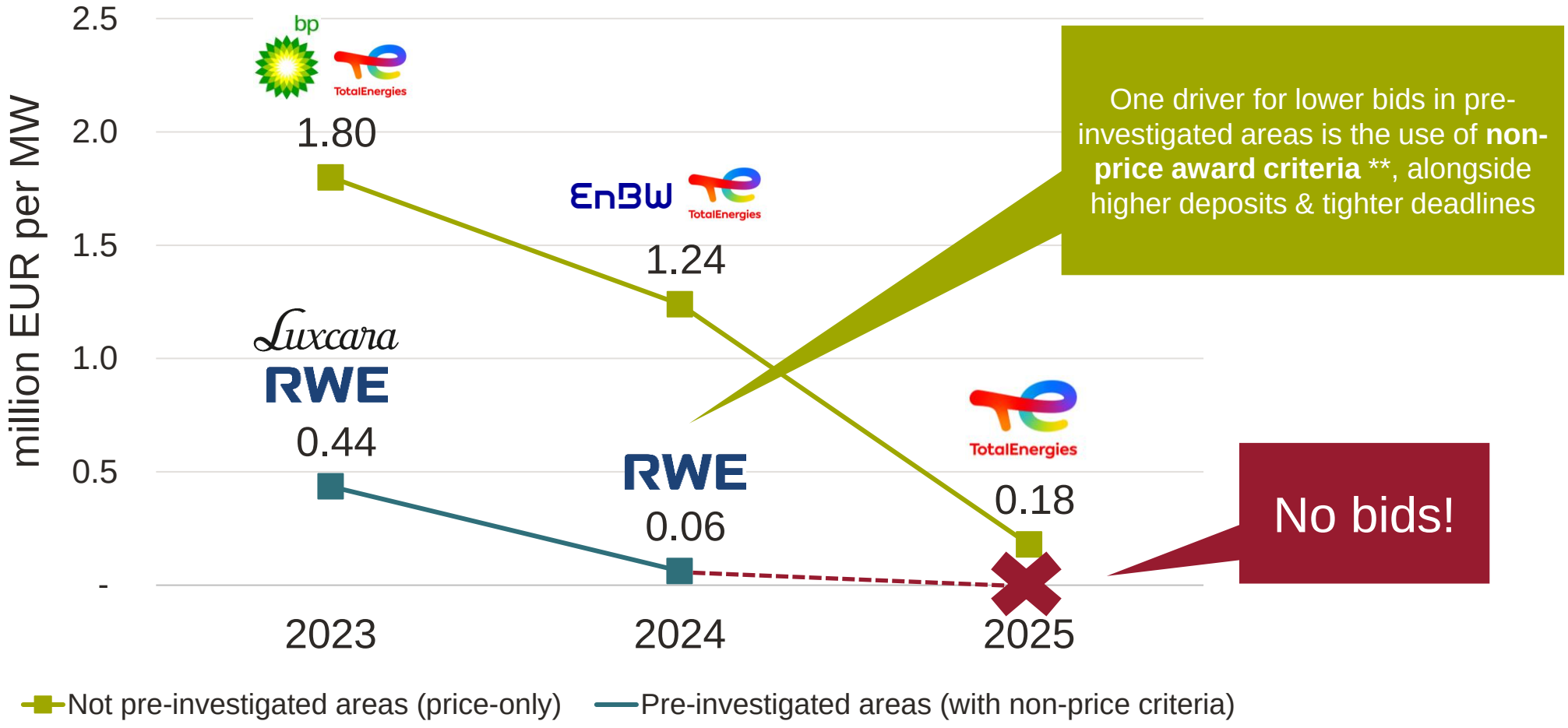
- **5 GW** tendered in 4 tender rounds, c. 600 MW in operation, rest due 2024/25
- Prices at **0 - 9.83 ct/kWh** in 2017 and 2018, **0 ct** rounds in 2021 and 2022 (with selection by lottery)

WindSeeG 2023

- 1 annual tender each for centrally pre-investigated ´& not-centrally pre-investigated areas. **OWF developers bid maximum payment to secure right for OWF site**
- 6 auctions yet in 2023, 2024 and 2025:
  - **10.5 GW** tendered in 3 auctions for **not pre-investigated areas**. Prices fell from 1.80 m€ per MW in June 2023 to 0,18 m€ per MW in June 2025
  - **8.3 GW** tendered in 2 auctions for **pre-investigated areas**. Prices fell from 0.44 m€ per MW in August 2023 to 0.06 m€ per MW in August 2024
    - **No bids** in August 2025 auction for **pre-investigated areas**

Note that the chart takes into account planned auctions until 2028, i.e. additional capacity may be commissioned from auctions in 2029, 2030 and beyond. Source: BWO, Statista, BNetzA.

The failed August auction for pre-investigated areas was the 6th auction of the WindseeG 2023, and prior developments already hinted clearly at a 0 bid auction*



*See for example this LinkedIn post from June 2025: https://www.linkedin.com/posts/matthias-janssen_offshorewind-activity-7341001452409999363-eEMC/
** See Frontier Economics discussion paper, June 2025: https://www.frontier-economics.com/media/1xldxfhq/frontier-economics-non-price-criteria-in-offshore-wind-auctions_how-to-strike-the-balance_june2025v1.pdf.

Plummeting of bid levels and failing of August 2025 auction explained in worsening market environment between 2022/23 and 2025

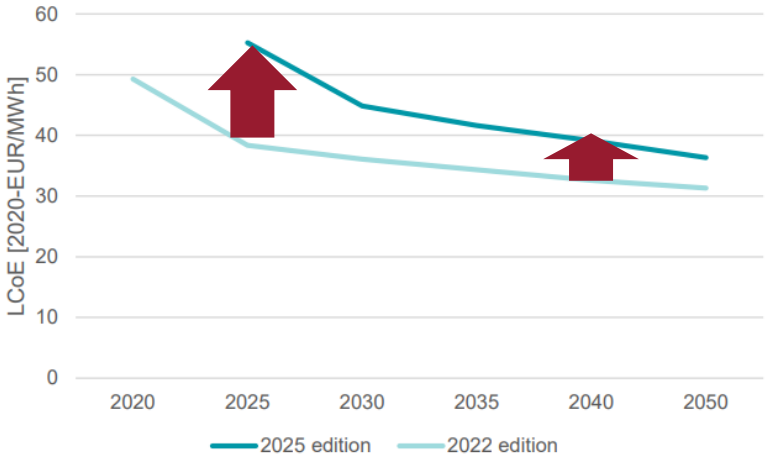
Auction with strict conditions

Bidders face significant merchant risks over lifetime of the project, while having to comply with strict conditions & penalties:

- **Securities**
  - Upfront payment of 10% of bid
  - Bid-bond deposit of €200/kW (compared to €100/kW for not centrally pre-investigated areas)
- **Timelines**
  - 1): 12 months after award: submission of permission application
  - 2): 3 years before finalisation of grid connection: proof of existing financing
  - 5): 6 months after grid connection: COD
- **Penalties**
  - 100% of €200/kW deposit and revocation of award if deadlines above are missed (even by 1 day!)

Increased cost

Levelised cost of electricity (LCOE) for wind offshore in Denmark in 2022 vs 2025*

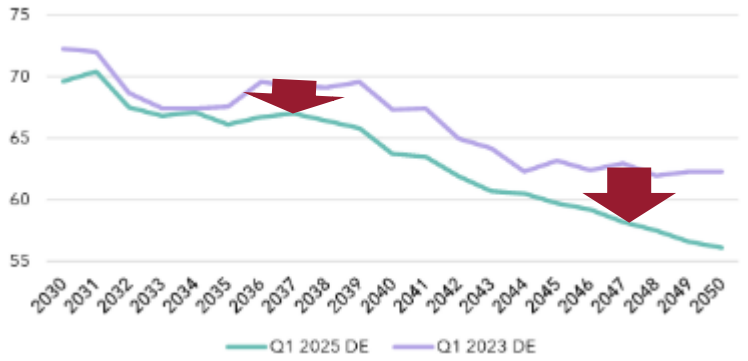


Drivers:

- Inflation
- Increased interest rates
- Supply chain challenges (caused by Covid, Ukraine, tariffs, …)
- …

Decreased revenue expectations

Uncurtailed **capture prices** (€/MWh) of wind offshore in Germany in 2023 vs 2025 **



Drivers:

- "Cannibalisation" effect of increasing wind (on- & offshore) penetration lowering value of electricity when wind blows
- …

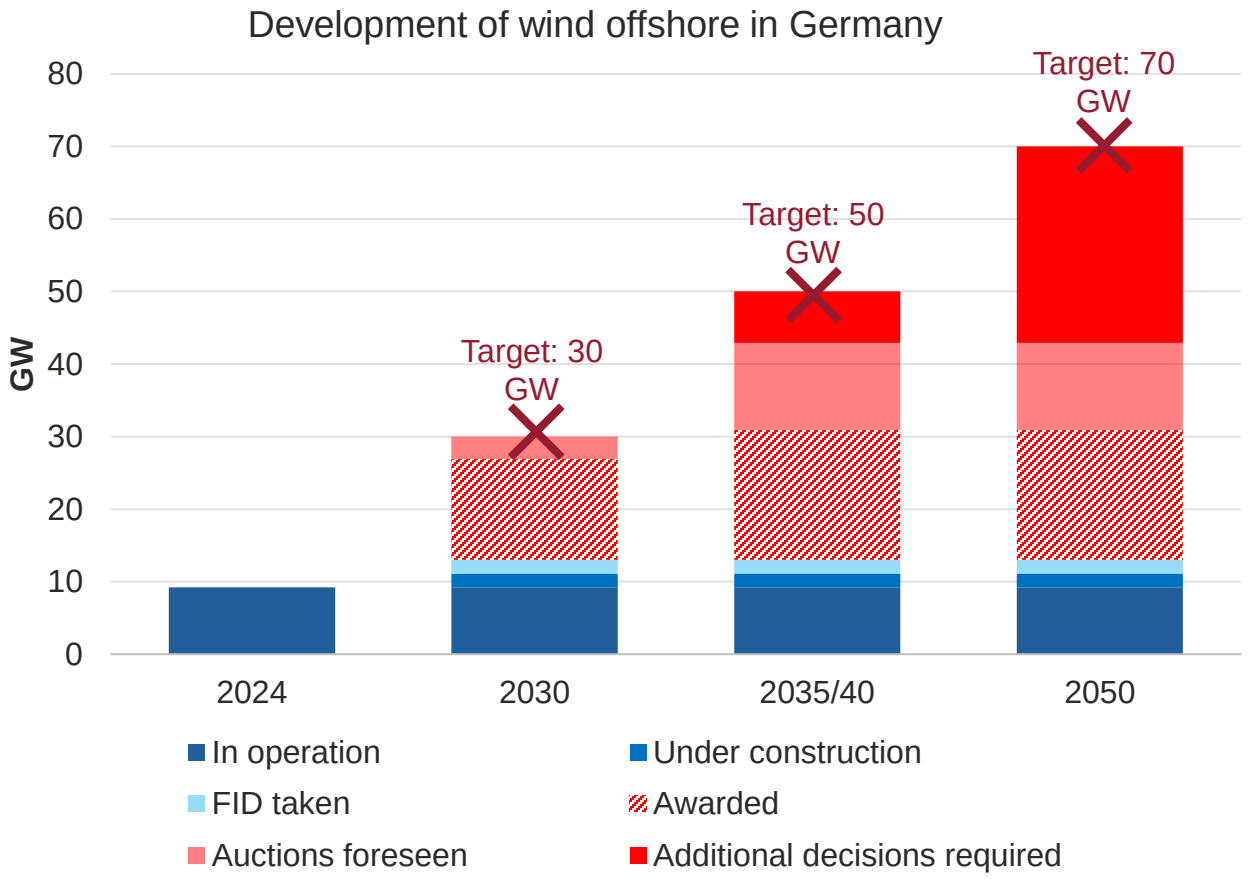
*Source: Danish Energy Agency,Technology Brief 2025, https://ens.dk/en/analyses-and-statistics/technology-data-generation-electricity-and-district-heating
** Source: Green Giraffe, Focus on Germany's 2025 Offshore Wind Auction, https://bwo-offshorewind.de/wp-content/uploads/2025/07/250703-Green-Giraffe-BWO-OW-DE-Auction-Analysis-v5-final-sent.pdf.

Agenda

Failed German offshore wind auction in August 2025

Implications for way forward

Germany has set ambitious offshore wind targets for 2030, 2040 and 2050. If the government still wants to achieve them substantial design changes will be required



Discussion about offshore targets (e.g. whether to stick to 70 GW by 2045 or relax) needs to take benefits & downsides into account, including:

Downsides

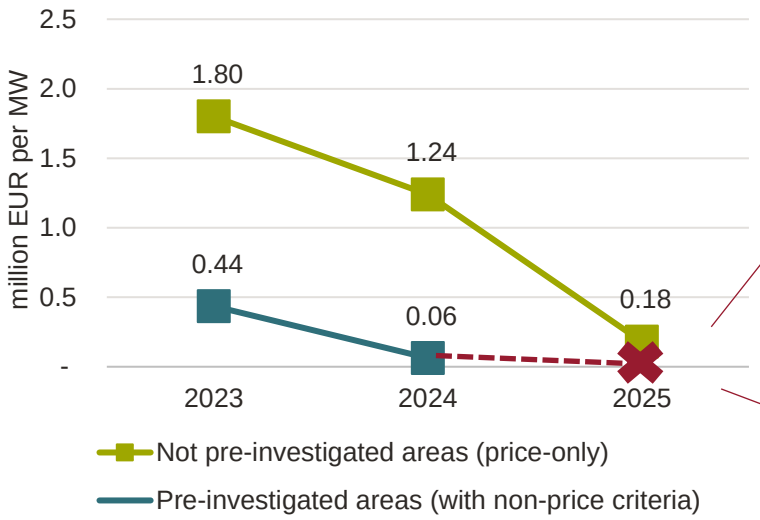
- **Higher LCOE** compared to wind onshore & PV
- **High offshore grid connection** cost (160 billion € for Germany until 2045 according to current NDP)

(System) benefits

- **Stable renewable electricity supply** → higher utilisation than onshore wind and solar; providing electricity in windy winter months when solar availability is limited
- **Significant domestic potential** while potential of other renewable options such as biomass and hydro limited → wind offshore helps to reduce import dependency

Source: Frontier based on Deutsche WindGuard, Status des Offshore-Windenergieausbaus in Deutschland, Jahr 2024, Februar 2025, www.wind-energie.de/fileadmin/redaktion/dokumente/publikationen-oeffentlich/themen/06-zahlen-und-fakten/20250204_Status_des_Offshore_Windenergieausbaus_Jahr_2024.pdf

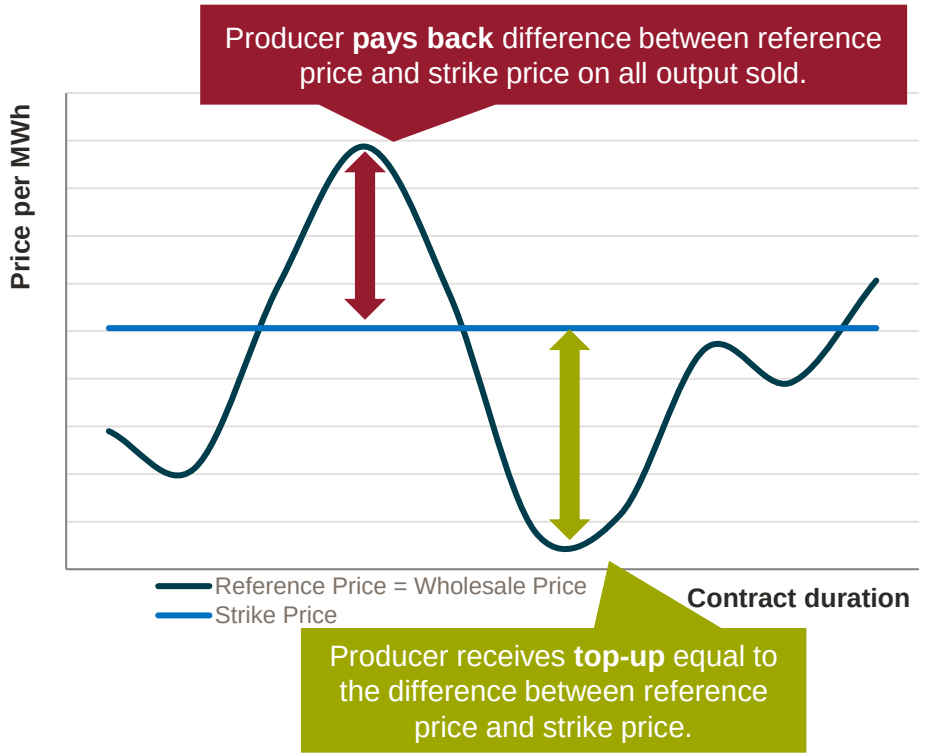
There are multiple levers to improve the situation and achieve wind offshore targets



	Auction & product design	Offshore system design	Wider policy
Increase bids	**Reduce cost & risks**: ■ Relax conditions (e.g. deposits, penalties, timelines non-price criteria) ■ Allow for longer OWF operation	**Increase revenues**: ■ Reduce capacity density (= increase FLH) ■ Allow for offshore hydrogen	**Reduce cost & risks**: ■ Strengthen supply chains ■ Decide on market zone configuration
Accept "negative" bids	**Introduce support system** (Capacity-based (€/MW) vs. generation-based (€/MWh, e.g. **CfD**) vs capability-based (e.g. financial CfD)		

Focus now

Discussions center around adapting auction design towards a „Contract for Difference“ (CfD)



General CfD logic:

- **OWF operator** continues to sell electricity output on the wholesale market and receives market revenues
- **Strike price**: Negotiated unit price that allows the producer to recover its fixed and ongoing investment costs → often determined competitively in an auction before the investment takes place and remains constant throughout the lifetime of the CfD, which is often in the range of 15 to 20 years.
- **Reference price**: Proxy for price that the producer receives for selling the product in the wholesale market
  - Reference price < strike price → Government pays producer difference between strike price and reference price
  - Reference price > strike price → Producer pays government difference between reference price and strike price
- This (2-way) design provides producers with **certainty over the price** they will receive, and protects the government (taxpayers) from paying a subsidy when market prices are high. But leaves volume risk with producer.

- State aid notification of the Renewable Energy Act (EEG) **expires end of 2026** and a new law needs to be notified
- EU Electricity Internal Market Regulation (2024) determines **two-sided CfDs to become the new standard EU renewables support instrument**

Denmark has recently changed its offshore auction to 2-sided CfD after a failed auction, while Norway is trialling a direct grant regime for floating offshore

	Last auction	Next auction	Last auction	Next auction	Next auction
					
Auction date	5 December 2024	**Tenders open: fall 2025** **Bid deadlines**: spring 2026 & fall 2027	20 March 2024	**Opened 19 May 2025, bid submission by 15 Sep 2025**	2028-2029
Auctioned capacity	**3** GW (+ 1 GW option) (3 spots: NS I A1-A3)	**3** GW minimum (3 spots: North Sea Central, Hesselø, and North Sea South)	**1.5** GW (Sørlige Nordsjø II)	Up to **0.5** GW (floating offshore)	
Tendered product	**Right** to use seabed of **pre-investigated** areas	**Government support** & right to use seabed of pre-investigated areas	**Government support** & right to use seabed of pre-investigated areas	**Right** to use seabed and develop project	Government support
Support	**No support**	**20-year two-sided capability-based CfD**	15-year two-sided energy-based **CfD**	**No support**	**Direct grant**
Bid cap	**No cap**	Disbursement ceiling for the state set at DKK 55.2 billion	Max. support NOK 23 bn (~**€1.9 bn**)	No cap	Max. support NOK 35 bn (~**€3 bn**)
Auction outcomes	**No bids!**	n/a	Ventyr receives CfD with strike price of 115 ore/kWh (~**35 €ct/kWh**)	n/a	n/a

Various design elements need to be discussed & decided when implementing a CfD

Symmetry

- One vs two-sided CfD

Payment basis

- Generation- vs. capability-based

Focus now

Duration

- Contract duration of CfD (e.g. 15 or 20 years)

Indexation

- Index strike price to CAPEX and/or OPEX developments; before and/or after COD

Dimensioning

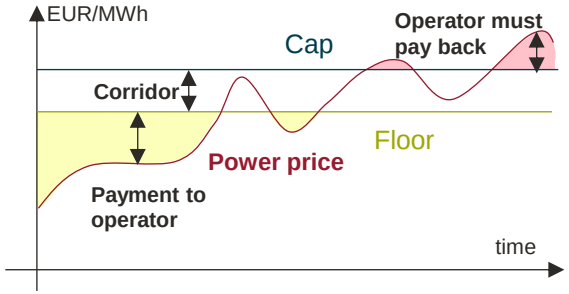
- Which areas to tender with CfD support vs. offering areas without support (PPA)?

The previous DE government had evaluated 4 CfD options for renewables – favouring capability-based models. Debate likely to return now with new government

As-produced models
→ based on actual production of the plant

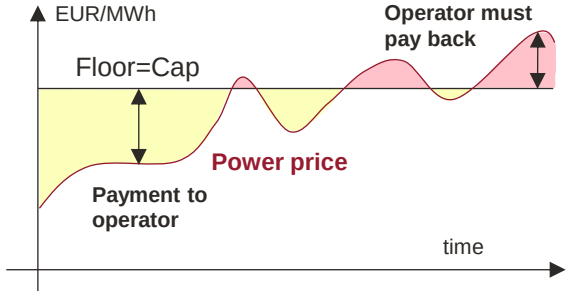
Option 1: As-produced CfD with cap/floor (market value corridor)

- Similar to current system (which has only a floor)
- **Addition of a cap** beyond which operators must pay revenues back → revenues can fluctuate within a corridor



Option 2: As-produced CfD (like in GB)

- Standard two-sided CfD (like in GB, but annual reference period)
- **floor** = **cap** → fixed revenues per MWh
- **No payment at negative prices**



Capability-based models
→ based on e.g. production potential of the plant

Option 3: Deemed CfD

- Like Option 2, but based on **potential** instead of actual production
- Effectively also payments for production potential **during negative price hours**

Option 4: Capacity payment with claw back

- Generator receives **fixed capacity payment**, irrespective of production potential
- Operator **passes on all market revenues** (based on deemed feed-in profile and actual spot market prices) to the state

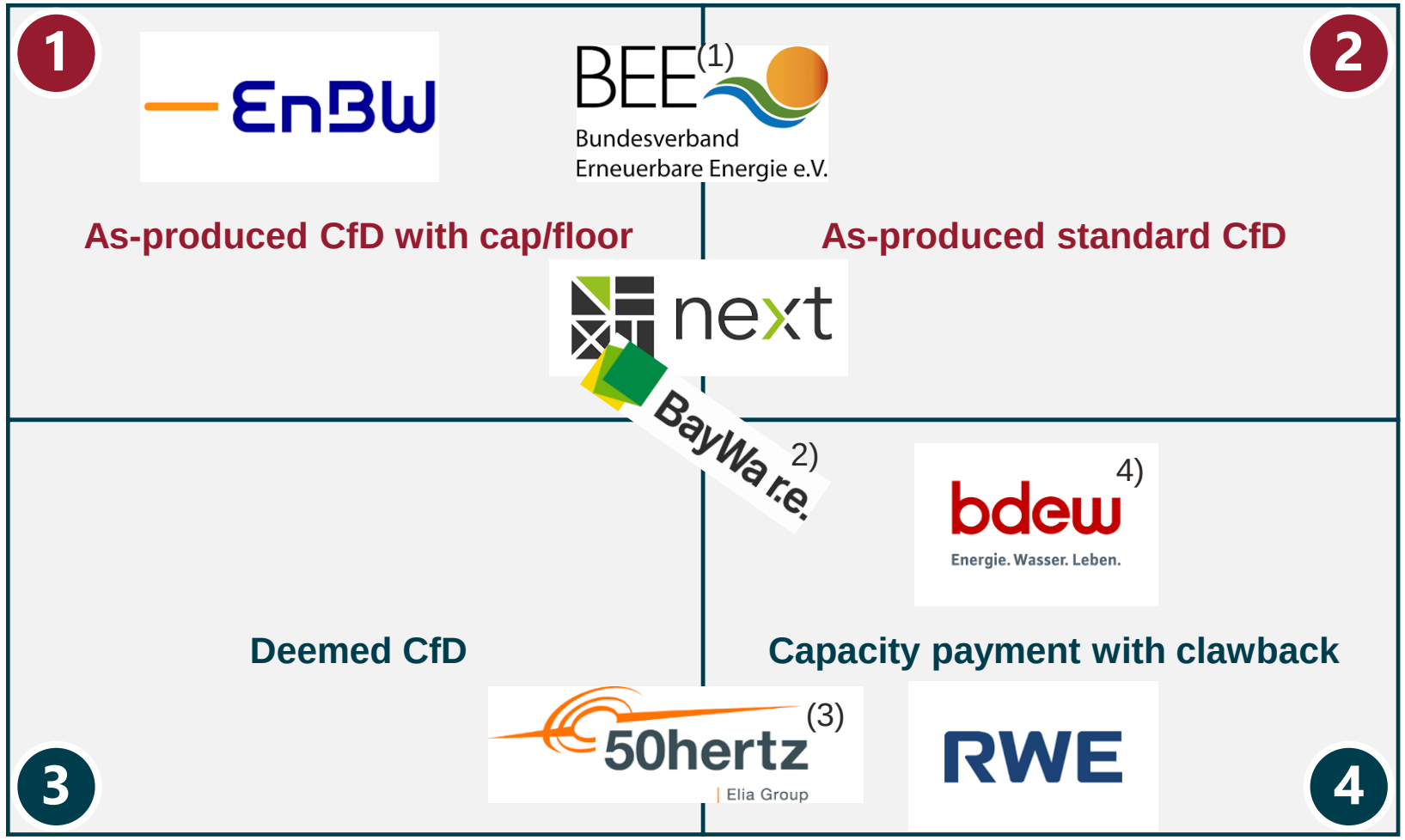
Previous government favoured production-independent models 3 and 4

Source: https://www.bmwk.de/Redaktion/EN/Publikationen/Energie/20240801-electricity-market-design-of-the-future.html

Similar discussion in GB, but recent Allocation Round (AR7) still with production-based CfD, as zonal configuration debate has crowded-out discussion on capability-based (financial) CfDs.

Industry stakeholders have been disunited on preferred model, some voiced concerns that deemed CfDs might hinder continuous RES expansion and bring higher risks

Status November 2024



No clear preference:

BDI Bundesverband der Deutschen Industrie e.V.
VKU VERBAND KOMMUNALER UNTERNEHMEN e.V.
e·on
8KU
energy traders europe
eex
epexspot
DIHK

Source: Frontier based on consultation statements

(1) Other renewable energy associations (BWS for solar and BWE for wind) with similar preference
(2) BayWa r.e. prefers options 1 and 4
(3) Represents position of all four German TSOs (50Hertz, Amprion, TenneT TSO, TransnetBW)
(4) Option 4 as long-term target model but implementation by 2027 unrealistic

What are the main pros & cons of capability-based CfDs (options 3 and 4) compared to as-produced CfDs (options 1 and 2)?

Efficient dispatch incentives and no volume risk from negative prices

- **No incentive to produce during negative-price hours** (without requiring a negative price rule).
- **No incentive to reduce production during positive price hours** (this can occur under as-produced CfDs if intraday prices are much lower than day-ahead prices).
- **No/lower volume risk from negative prices** as deemed production independent of actual market prices

Higher basis risk & implementation challenges

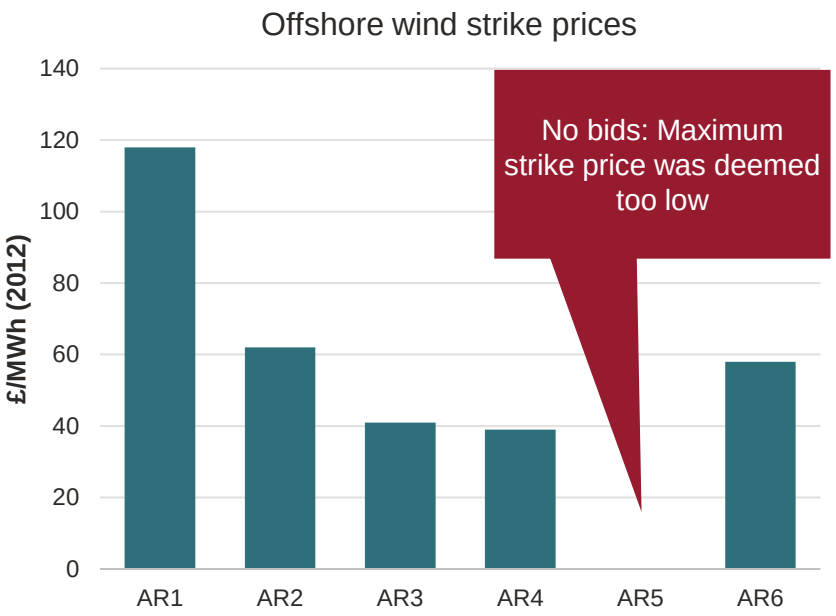
- **Increased basis risk** if the deemed feed-in deviates from the actual production – difference can be significant even if local weather data is used (e.g. due to aging)
- **Implementation effort and risk of discontinuity** – Introduction of a new regime might lead to delay in investment decisions

Some important questions haven't been addressed yet

- **How is the production potential measured?** There are different models on the table and the choice has a significant impact.
- **How long is the lead time?** – When can the deemed models which can require new hardware/software be introduced?
- **What's the net benefit?** – The analysis by BMWK has been only qualitative so far. A robust decision requires a quantification of benefits and costs (CBA).

Impact on investment incentives unclear

Relevant GB experience with CfD for offshore wind

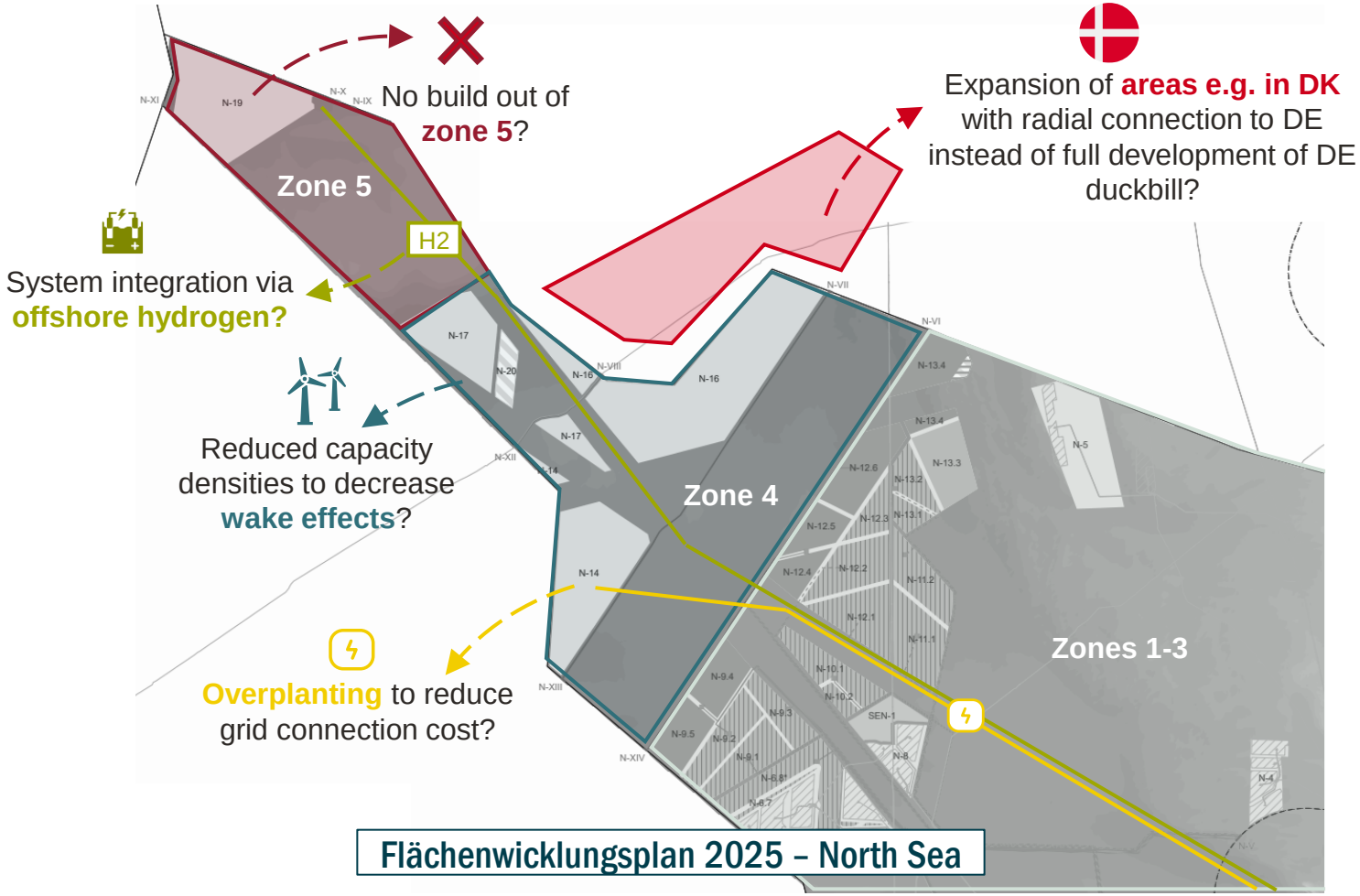


Strike prices	▪ Have come down significantly but increased recently ▪ Bid cap had to be increased for AR 6 (after unsuccessful AR5 auction with too low bid cap) and now again for AR 7 to reflect increased cost
Contract duration	▪ Has been increased from 15 to 20 years in AR 7 recently
Separate pots	▪ For floating offshore and for projects in Scotland in AR7
Production vs capability	▪ All ARs including AR7 have been production-based, but discussions ongoing

But to unlock offshore wind's full potential, auction design alone is not enough – planning must also evolve and there are wide discussions how this should happen

A number of issues are currently being discussed that suggest the existing offshore build-out plan may not be optimal:

- **Low full load hours** due to wake effects from high capacity densities: actual yields are lower than originally expected (and possibly lower than optimal?)
- **High costs for offshore subsea cables**, which (due to low full load hours) are not fully utilised, thereby increasing overall system costs.
- **Additional onshore grid expansion** is required to integrate the offshore electricity into the system.
- **Nationally driven planning approaches** result in inefficient spatial allocation of offshore wind areas (e.g. high project density in German waters despite available potential in neighbouring countries).



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