



Ørsted

CASE SOLVING



Ørsted is trying to expand the producing amount of offshore energy; the firm is looking forward to attaining a level of producing 100% renewable energy.

Objective

: Achieve goals of 30 GW offshore wind until 2030 with a healthy financial business and environment



Solution

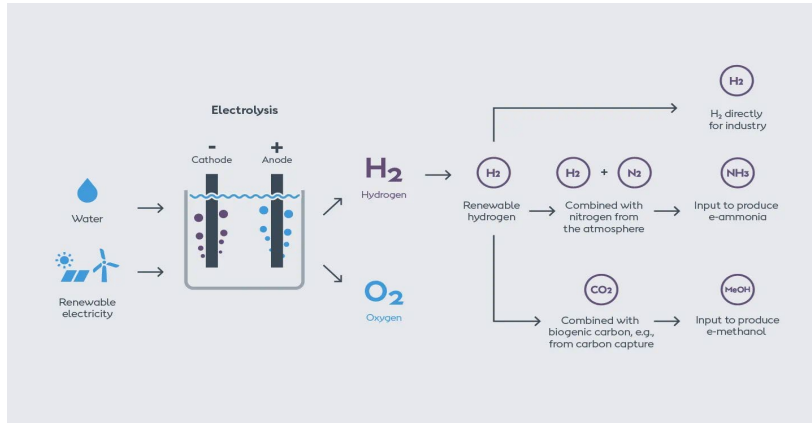
: *Differentiated Capacity Securing Route*
1) Browse, 2) Bid In, 3) Cooperate



Expected Effect

The Ørsted's uniqueness(differentiation)

System integration



System integration refers to combining offshore wind energy projects with other technologies, such as **Power-to-X**, which generates storable hydrogen through electrolysis. This integration is done to **increase the value of the projects and may include the use of related storage technologies** like renewable hydrogen and green fuels.

The United States has the potential to be a global leader in Power-to-X (P2X) technology due to **its strong background in fuel production and the rapid growth of its renewable energy industry**, which will drive innovation and job creation.

Local Content

Local content stands for jobs and factories servicing the project and initiatives backing up the creation of exports with prospects in the future. Local content can be developed by training local employees with new skills, manufacturing goods or services locally.

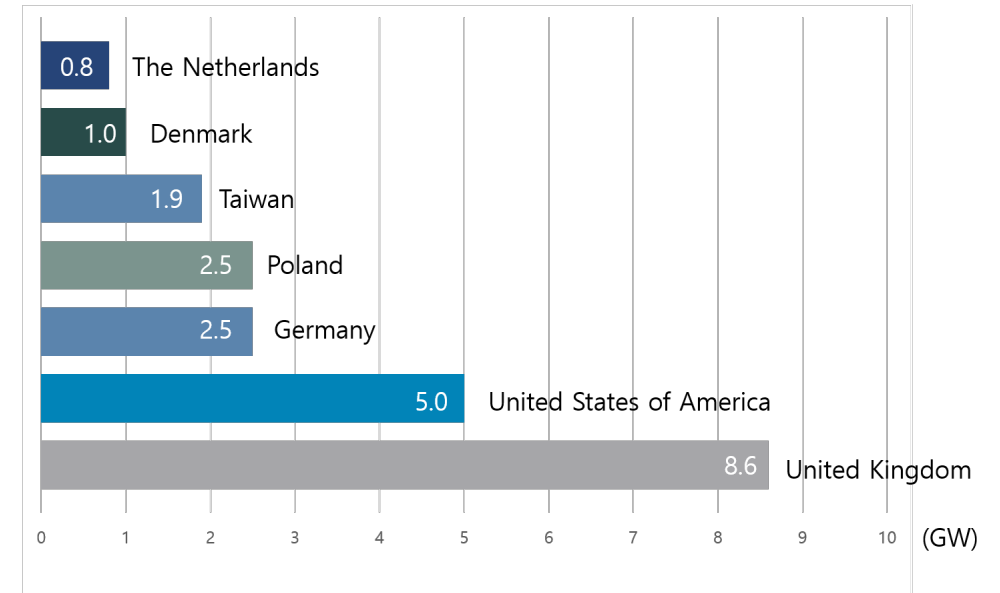
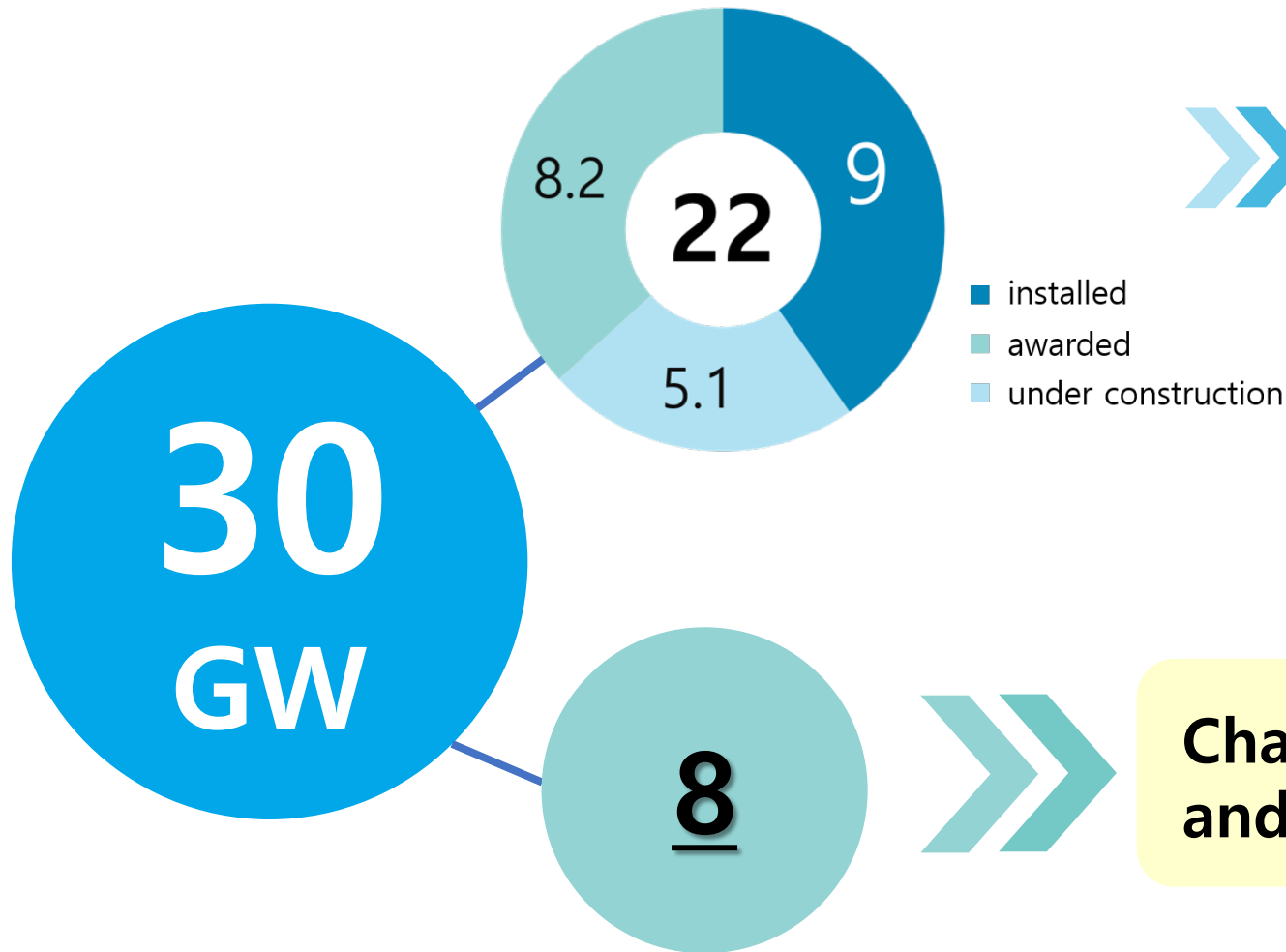
Ørsted contributed to Taiwan's transition to renewable energy, resulting in raising local employment rates and developing the industry.

Sustainability

Sustainability signifies meeting the requirements of the present without compromising future generations' needs by keeping economic growth and environmental care. Sustainable value can be realized through new plans for decarbonization, which leads to energy independence.

Ørsted has partnered with Lincolnshire Wildlife Trust and Yorkshire Wildlife Trust to create the Humber Seascape Restoration Programme. This project is to make a positive contribution to both climate and nature.

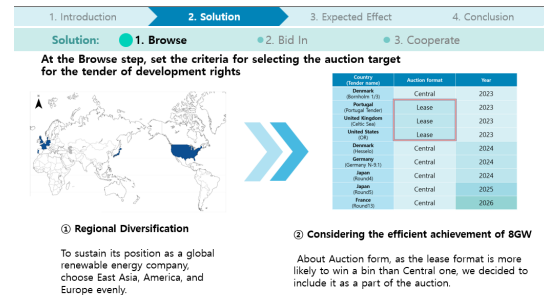
Ørsted has secured 22GW offshore wind until 2023 to be a central corporation. Now the company is trying to produce 8GW energy more by 2030.



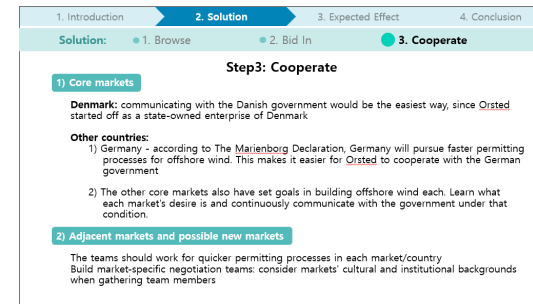
**Challenge for the company
and a goal we should achieve**

The **Differentiated Capacity Securing Route** which consists of three steps (Browse, Bid In, Cooperate) tells the reasonable way to reach out the target of 30GW offshore wind by 2030.

1. Browse data



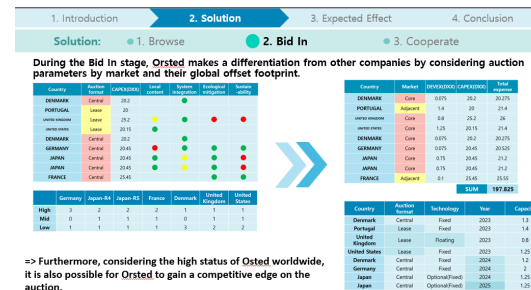
3. Cooperate with governments



Differentiated Capacity Securing Route

30 GW
OFFSHORE
WIND

2. Bid in auction



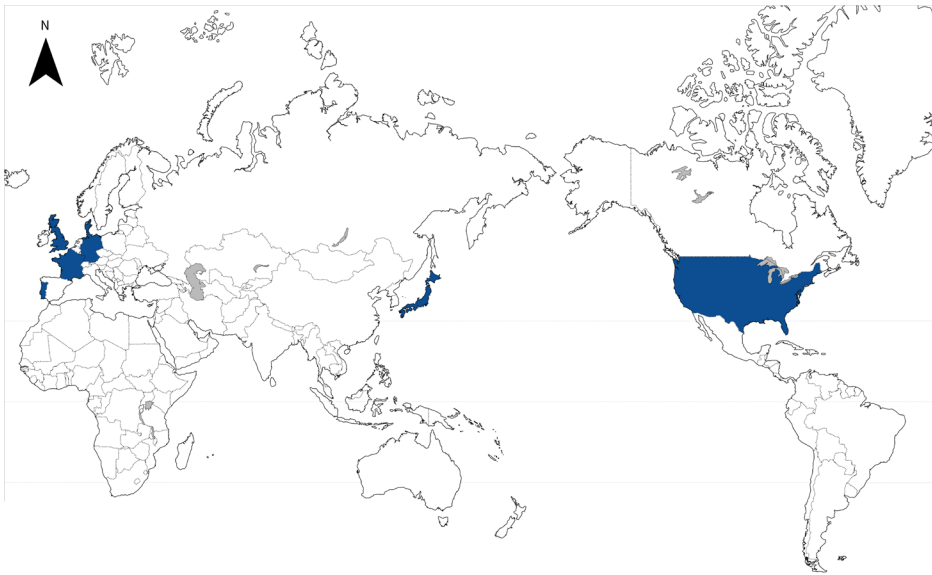
Solution:

● 1. Browse

● 2. Bid In

● 3. Cooperate

At the Browse step, set the criteria for selecting the auction target for the tender of development rights



Source: [National Geographic Information Institute \(Republic of Korea\)](#)



Country (Tender name)	Auction format	Year
Denmark (Bornholm 1/3)	Central	2023
Portugal (Portugal Tender)	Lease	2023
United Kingdom (Celtic Sea)	Lease	2023
United States (OR)	Lease	2023
Denmark (Hesselo)	Central	2024
Germany (Germany N-9.1)	Central	2024
Japan (Round4)	Central	2024
Japan (Round5)	Central	2025
France (Round13)	Central	2026

① Regional Diversification

To sustain its position as a global renewable energy company, choose East Asia, America, and Europe evenly.

② Considering the efficient achievement of 8 GW

Considering the auction form, as lease auction bids are more likely to be won than that of central auction, we decided to include some lease auctions as a part of our bids.

Solution:

● 1. Browse

● 2. Bid In

● 3. Cooperate

During the Bid In stage, Ørsted makes a differentiation from other companies by considering auction parameters by market and their global offset footprint.

Country	Auction format	CAPEX(DXX)	Local content	System integration	Ecological mitigation	Sustain-ability
DENMARK	Central	20.2		●		
PORTUGAL	Lease	20				
UNITED KINGDOM	Lease	25.2	●	●	●	●
UNITED STATES	Lease	20.15	●			
DENMARK	Central	20.2		●		
GERMANY	Central	20.45	●	●	●	●
JAPAN	Central	20.45	●	●	●	●
JAPAN	Central	20.45	●	●	●	●
FRANCE	Central	25.45			●	●

● High value in market ● Medium value in market ● Low value in market



Country	Market	DEVEX(DXX)	CAPEX(DXX)	Total expense
DENMARK	Core	0.075	20.2	20.275
PORTUGAL	Adjacent	1.4	20	21.4
UNITED KINGDOM	Core	0.8	25.2	26
UNITED STATES	Core	1.25	20.15	21.4
DENMARK	Core	0.075	20.2	20.275
GERMANY	Core	0.075	20.45	20.525
JAPAN	Core	0.75	20.45	21.2
JAPAN	Core	0.75	20.45	21.2
FRANCE	Adjacent	0.1	25.45	25.55
SUM				197.825

Market Segmentation

- **Core markets:** Areas where the company has already started offshore wind project.
- **Adjacent markets:** Those near countries with either installed capacity or ongoing construction projects, but do not have any current capacity themselves.
- **New markets:** Those where Ørsted does not have any existing capacity or ongoing construction projects in close proximity.

=> Furthermore, regarding the high status of Ørsted worldwide, it is also possible to gain a competitive edge on the auction for Ørsted.

Country	Auction format	Technology	Year	Capacity
Denmark	Central	Fixed	2023	1.3
Portugal	Lease	Fixed	2023	1.4
United Kingdom	Lease	Floating	2023	0.8
United States	Lease	Fixed	2023	1.25
Denmark	Central	Fixed	2024	1.2
Germany	Central	Fixed	2024	2
Japan	Central	Optional(Fixed)	2024	1.25
Japan	Central	Optional(Fixed)	2025	1.25
France	Central	Floating	2026	0.5
SUM				10.95

Solution:

● 1. Browse

● 2. Bid In

● 3. Cooperate

To be specific, in order to successfully acquire 8 GW, maximum initiatives are given to the regions taking central format which has high uncertainty.

* Don't forget that the maximum quota is 200 DKK bn in total!



All considered
(low ~ high value)



Partially considered
(Only in high value cost)

DEVEX

75 DKKm bid in a **core** market

100 DKKm bid in a **adjacent** market

125 DKKm bid in a **new** market

CAPEX

20 DKKm per GW construct

5 DKKm per GW using floating technology

200 DKKm per GW minor technological innovation

150 DKKm per GW create a standard local content

100 DKKm per GW sustainability and biodiversity

Since Ørsted is a Danish No. 1 energy company, it is likely that Ørsted would win the bid. Thus, we put initiatives only in highly valued parameters in the Danish market.

Solution:

● 1. Browse

● 2. Bid In

● **3. Cooperate**

Step3: Cooperate

1) Core markets

Denmark: Communicating with the Danish government would be the easiest way since Ørsted started off as a state-owned enterprise of Denmark.

Other countries:

- 1) Germany: According to The Marienborg Declaration, Germany will pursue faster permitting processes for offshore wind. This makes it easier for Ørsted to cooperate with the German government.
- 2) The other core markets have also set goals in building offshore wind. Learn what each market's desire is and continuously communicate with the government under that condition.

2) Adjacent markets and possible new markets

Build market-specific negotiation teams: Consider cultural and institutional backgrounds of markets when gathering team members.

The teams shall work for quicker permitting processes in each market/country.

Intensive presentation of solutions

1. Browse

Select countries based on types of auctions, kinds of market, capacities, and technologies.

2. Bid In

Insist tender conditions to win central or lease auctions with expected winning rates

3. Cooperate

Communicate with privatized institutions by organizing independent teams for negotiation, and consult with Denmark and other countries' government to lower the waiting time for getting permission.



1. BROWSE

2. BID IN

3. COOPERATE

Expectation : Through the auction based on *Differentiated Capacity Securing Route*, Ørsted is highly likely to secure 30 GW in 2030.

* It can be seen that an auction bid will be awarded for the central auctions according to the solution above. Thus, we only considered the lease auctions.

Lease	»	1st	2nd	3rd	4th	5th	6th	7th	8th
		1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
		1.4	0	1.4	0	0	1.4	1.4	0
		0.8	0	0	0.8	0	0.8	0	0.8
		1.25	0	0	0	1.25	0	1.25	1.25
		1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
		2	2	2	2	2	2	2	2
		1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25
		1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25
		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
SUM		10.95	7.5	8.9	8.3	8.75	9.7	10.15	9.55
		V	Λ	V	V	V	V	V	V
		8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0

Probability

that the SUM which is obtained based on the winning bid per the region with Lease format satisfies the condition, over 8 GW.

$$\frac{7}{8} \times 100 = \sim 88\%$$

Conclusion

1. The case

How should Ørsted prioritise its efforts to best reach its 2030 target of 30 GW offshore wind capacity, while helping to ensure a healthy financial business and industry?

2. Solution:

Step 1 - Browse: Choose the auctions to bid in, considering two criteria – diversifying regions and the efficient achieving of 8GW offshore wind capacity.

Step 2 - Bid in: When bidding in, consider the price and other parameters of differentiation initiatives.

Step 3 - Cooperate: In core markets, utilize Ørsted's leading position to cooperate with local governments and institutions. In adjacent and new markets, build market-specific negotiation teams to quicken permitting processes.

3. Expected Effect:

Going through our Differentiated Capacity Securing Route, Ørsted is highly likely (about 88 percent probability) to secure 30 GW offshore wind capacity in 2030, maintaining the market-leading position and ecological sustainability.

Appendix

Country	Market	DEVEX (DKKbn)	CAPEX (DKKbn)	Total Expense (DKKbn)	Auction format	Technology	Year	Capacity (GW)	Footnote
Denmark-Bornholm	Core	0.075	20.2	20.275	Central	Fixed	2023	1.3	Footnote1
Portugal	Adjacent	1.4	20	21.4	Lease	Fixed	2023	1.4	Footnote2
United Kingdom	Core	0.8	25.2	26	Lease	Floating	2023	0.8	Footnote3
United States	Core	1.25	20.15	21.4	Lease	Fixed	2023	1.25	Footnote4
Denmark-Hesselo	Core	0.075	20.2	20.275	Central	Fixed	2024	1.2	Footnote5
Germany	Core	0.075	20.45	20.525	Central	Fixed	2024	2	Footnote6
Japan-Round 4	Core	0.75	20.45	21.2	Central	Optional(Fixed)	2024	1.25	Footnote7
Japan-Round 5	Core	0.75	20.45	21.2	Central	Optional(Fixed)	2025	1.25	Footnote8
France	Adjacent	0.1	25.45	25.55	Central	Floating	2026	0.5	Footnote9

Footnote Explanation

Footnote Explanation

1	As Ørsted is Denmark's state-run energy company, it seems easy to establish an additional energy base through close cooperation between the government and companies.	6	Core market, Germany has high values in sustainability, ecological mitigation, system integration each. Thus, the country is worth investing in.
2	Adjacent market, It is easier to secure additional 8 GW stably by 2030, since lease auctions are more likely to be awarded than central auctions and due to the large bidding unit of 7 GW(20%: 1.4GW).	7	Core market, In Asia, Taiwan, the other option, cannot be a good choice due to its unstable, and even hostile, relationship with China
3	core market, Although the price is high, you can create energy farms more efficiently than other countries by utilizing the existing infrastructure, floating	8	Same with footnote #7
4	core market, Despite its high price, building energy farms in the US will provide a good foundation for entry into other countries in the Americas in the long run.	9	adjacent market, Good sustainability, floating
5	Same with footnote #1		

Appendix

	United States of America	Denmark	United Kingdom	Poland	Germany	The Netherlands	Taiwan	sum
Installed	<0.1	1.0	5.7		1.3	0.8	<0.1	9
Under construction	0.1		2.9		1.2		0.9	5.1
awarded	4.8			2.5			0.9	8.2
Sum	<5.0	1.0	8.6	2.5	2.5	0.8	<1.9	22.3

	Germany	Japan-R4	Japan-R5	France	Denmark	United Kingdom	United States
High	3	2	2	2	1	1	1
Mid	0	1	1	1	0	1	1
Low	1	1	1	1	3	2	2

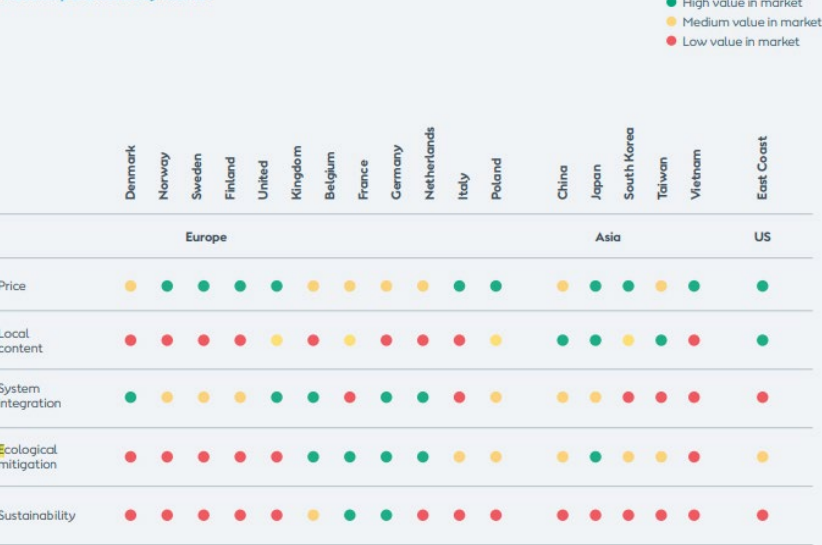
DEVEX

- **75 DKKm** in DEVEX to develop a bid in a core market for Ørsted
- **100 DKKm** in DEVEX to develop a bid in an adjacent market (with high proximity to a core market, geographically and regulatory-wise)
- **125 DKKm** in DEVEX to develop a bid in a completely new market for Ørsted
- You can assume that 'market familiarity' is unaffected by auction wins that occur after 2022, and that DEVEX is therefore independent across auctions.
- **1DKKbn** per GW to develop a bid in all markets². This applies only to the GW that can be expected to be won, equal to 20% of the total capacity.

CAPEX

- **20 DKKbn** per GW to construct a wind farm project (as a baseline, meaning using fixed technology and with no differentiation)
- **5 DKKbn** per GW in additional costs to construct a wind farm project using floating technology (relative to fixed technology)
- **200 DKKm** in additional costs to create a minor (incremental, often construction-based) technological innovation differentiation initiative
- **150 DKKm** in additional costs to create a standard local content differentiation initiative
- **100 DKKm** in additional costs to create a standard sustainability and/or biodiversity differentiation initiative

Auction parameters by market



Source: Wood Mackenzie (2022)

Appendix

Country	Tender name	Auction format	Technology	Year	Capacity (GW)	Additional comment
Denmark	Bornholm (1/3)	Central	Fixed	2023	1.3	
Denmark	Bornholm (2/3)	Central	Fixed	2023	1.3	
Denmark	Bornholm (3/3)	Central	Fixed	2023	1.3	
Germany	Germany N-11.1	Central	Fixed	2023	2.0	
Germany	Germany N-12.1	Central	Fixed	2023	2.0	
Germany	Germany N-12.2	Central	Fixed	2023	2.0	
Germany	Germany O-2.2	Central	Fixed	2023	1.0	
Germany	Germany N-6.6	Central	Fixed	2023	0.6	
Germany	Germany N-6.7	Central	Fixed	2023	0.3	
Germany	Germany N-3.5	Central	Fixed	2023	0.4	
Germany	Germany N-3.6	Central	Fixed	2023	0.5	
Taiwan	Round Three Centralized Auction 2	Central	Fixed	2023	3.0	
Japan	Round 2.2	Central	Optional ¹	2023	0.9	
Lithuania	Round 1	Central	Fixed	2023	0.7	
France	Round 10	Central	Fixed	2023	1.0	
Netherlands	Umuiden Ver I	Central	Fixed	2023	1.0	
Netherlands	Umuiden Ver II	Central	Fixed	2023	1.0	
Netherlands	Umuiden Ver III	Central	Fixed	2023	1.0	
Netherlands	Umuiden Ver IV	Central	Fixed	2023	1.0	
Belgium	PEZ	Central	Fixed	2023	1.0	
Portugal	Portugal Tender	Lease	Fixed	2023	7.0	You can assume only 20% of the tendered capacity can be expected to be won by any given developer
United Kingdom	Celtic Sea	Lease	Floating	2023	4.0	You can assume only 20% of the tendered capacity can be expected to be won by any given developer
United States	OR	Lease	Fixed	2023	3.0	You can assume only 20% of the tendered capacity can be expected to be won by any given developer
Norway	Sertige Nordsjø II	Lease	Fixed	2023	3.0	You can assume only 20% of the tendered capacity can be expected to be won by any given developer
Denmark	Hessele	Central	Fixed	2024	1.2	
Japan	Round 3	Central	Fixed	2024	1.5	
Germany	Germany N-9.1	Central	Fixed	2024	2.0	
Germany	Germany N-9.2	Central	Fixed	2024	2.0	
Germany	Germany N-9.3	Central	Fixed	2024	1.5	
Taiwan	Round Three Centralized Auction 3	Central	Optional ¹	2024	3.0	
Germany	Germany N-12.3	Central	Fixed	2024	1.0	
Germany	Germany N-11.2	Central	Fixed	2024	1.5	
Japan	Round 4	Central	Optional ¹	2024	1.25	
Norway	Utsira Nord	Lease	Floating	2024	1.5	You can assume only 20% of the tendered capacity can be expected to be won by any given developer

Country	Tender name	Auction format	Technology	Year	Capacity (GW)	Additional comment
Japan	Round 5	Central	Optional ¹	2025	1.25	
Germany	Germany N-10.2	Central	Fixed	2025	0.5	
Germany	Germany N-10.1	Central	Fixed	2025	2.0	
Netherlands	Umuiden (Noord) Ver V	Central	Fixed	2025	1.0	
Netherlands	Umuiden (Noord) Ver VII	Central	Fixed	2025	1.0	
Belgium	Princess Elisabeth 2	Central	Fixed	2025	1.4	
Belgium	Princess Elisabeth 3	Central	Fixed	2025	1.4	
Canada	Lease Auction Nova Scotia	Lease	Fixed	2025	5.0	You can assume only 20% of the tendered capacity can be expected to be won by any given developer
Germany	2025 Auction	Central	Fixed	2025	5.0	
France	Round 11 Mediterranean Extension	Central	Floating	2025	1.0	
France	Round 12	Central	Fixed	2025	1.0	
United Kingdom	CfD 7	Central	Fixed	2025	4.0	
Japan	Round 5	Central	Fixed	2025	2.0	
Lithuania	Round 2	Central	Fixed	2025	0.7	
Netherlands	Nederwiek South I	Central	Fixed	2025	2.0	
Norway	Sertige Nordsjø II Site 2	Central	Fixed	2025	1.5	
Poland	2nd Price Auction (2nd Wave)	Central	Fixed	2025	2.5	
Germany	2026 Auction	Central	Fixed	2026	1.5	
France	Round 13	Central	Floating	2026	0.5	
France	Round 14	Central	Fixed	2026	1.0	
United Kingdom	CfD 8	Central	Fixed	2026	4.0	
Japan	Round 6	Central	Fixed	2026	2.0	
Netherlands	Nederwiek Nord	Central	Fixed	2026	4.8	
Netherlands	North of the Wadden Islands	Central	Fixed	2026	0.8	