Danish Energy Agency

Market dialogue on Thor call for tender: *Subsidy scheme and award criteria*

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Danish Energy Agency,
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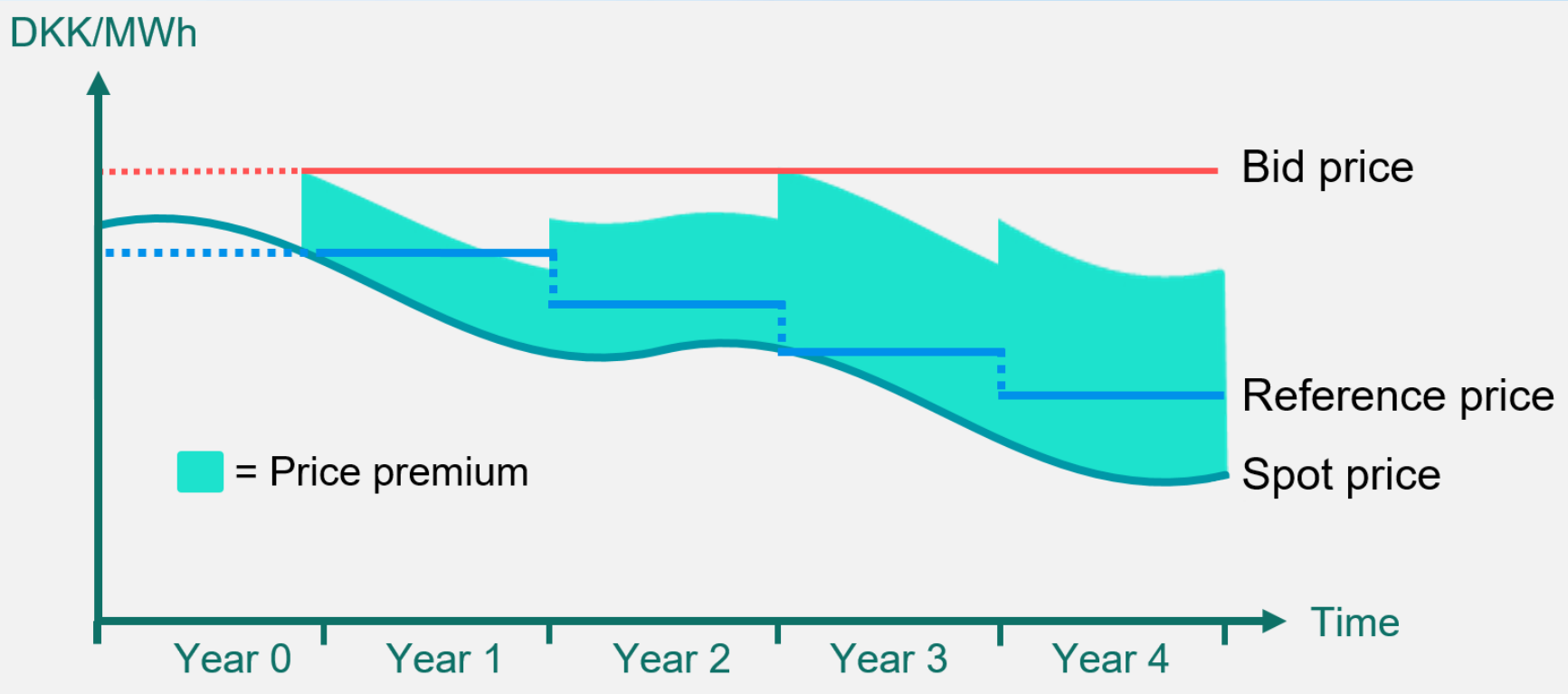
Set up for the subsidy scheme

Energy Agreement: "…Offshore wind is expected to be able to generate green electricity on market conditions without state subsidies within just a few years..."

Agreement on the subsidy scheme from 13 Nov 2019:

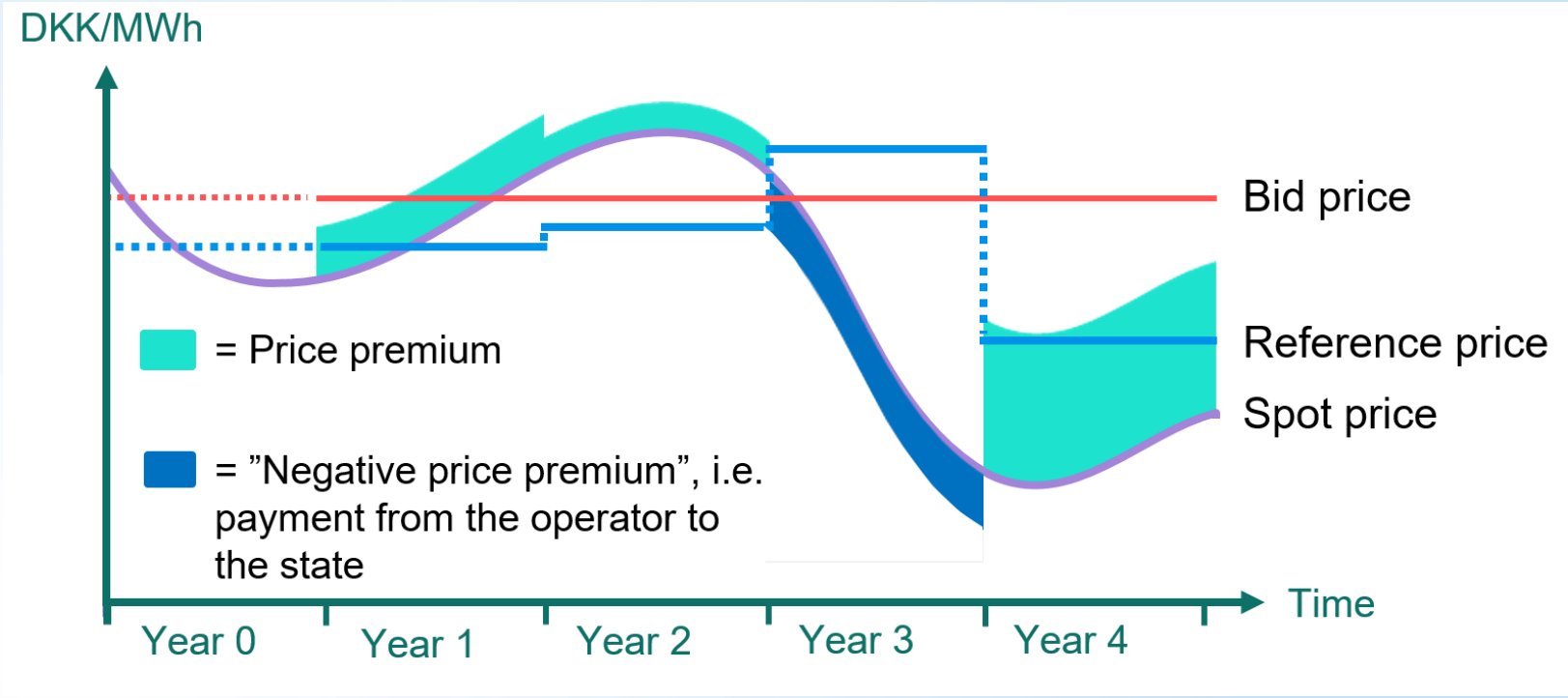
- The new subsidy scheme is the first step on the way towards future, where electricity from offshore wind farms to a greater extend is produced on market conditions
- CfD model with security for the investment in the long run
- Subsidies as fixed price premium: stronger incentive to enhance the socioeconomic value of the electricity production
- Symmetric payment
- ”Insurance”: Caps on the concession winner’s payment and the state’s payment

Contract for Difference



- The price premium is the difference between the bid price and the reference price
- The reference price is the simple average of the hourly electricity spot prices the previous year on the Nordic electricity exchange, Nord Pool.

Contract for Difference



- No symmetric payment from the concession winner, when the negative premium is equal to or lower than the spot price that hour.
- Cap on payment from the Danish state: net DKK 6.5 bn., corresponding to MEUR 870.
- Cap on payment from the concession winner: net DKK 2.8 bn., corresponding to MEUR 375.
- No opt out option.

Award criteria

Lowest price per kWh

- Total subsidy costs within the budget evaluation threshold (DKK 3.7 bn.)
- Automatically accepted

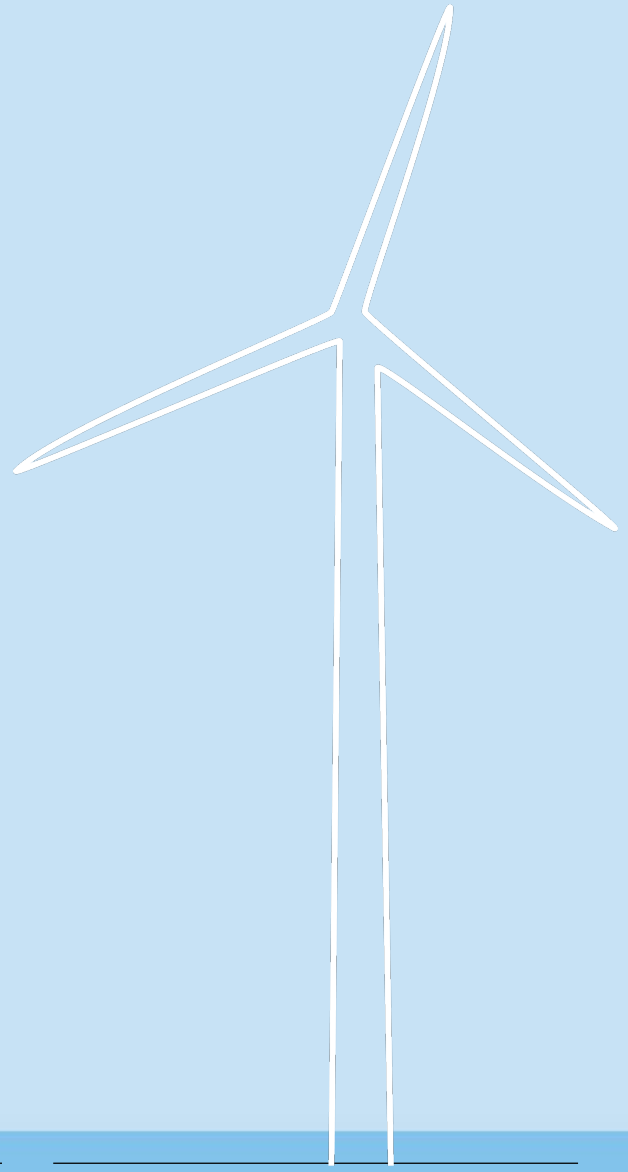
Lowest expected total subsidy costs

- If no bid has total subsidy costs within the budget evaluation threshold
- Bid will have to be accepted by the parties to the Energy Agreement

Budget evaluation threshold

DKK 3.7 bn. - EUR 496 mill.

ONLY RELEVANT IN THE TENDER PROCESS



Expected total subsidy costs

To be used in the tender process

- Capacity
- Electricity price forecast – latest relevant
- Estimated 4,500 full-load hours
- 20 years aid period
- The gross value-added deflator

$$NPV\ E = \sum_{t=1}^{20} \frac{(b - p_t) \times K \times FLH}{(1 + r)^t}$$

$NPV\ E$	– net present value of expected subsidy expenditure
t	– time period
b	– bid per MW
p_t	– expected reference price at time t per MWh
K	– capacity in MW
FLH	– expected full load hours
r	– discount rate

Expected total subsidy costs - *example*

To be used in the tender process

- Capacity **– 800 MW**
- Electricity price forecast – ***AF19***
- Estimated 4,500 full-load hours
- 20 years aid period
- The gross value-added deflator

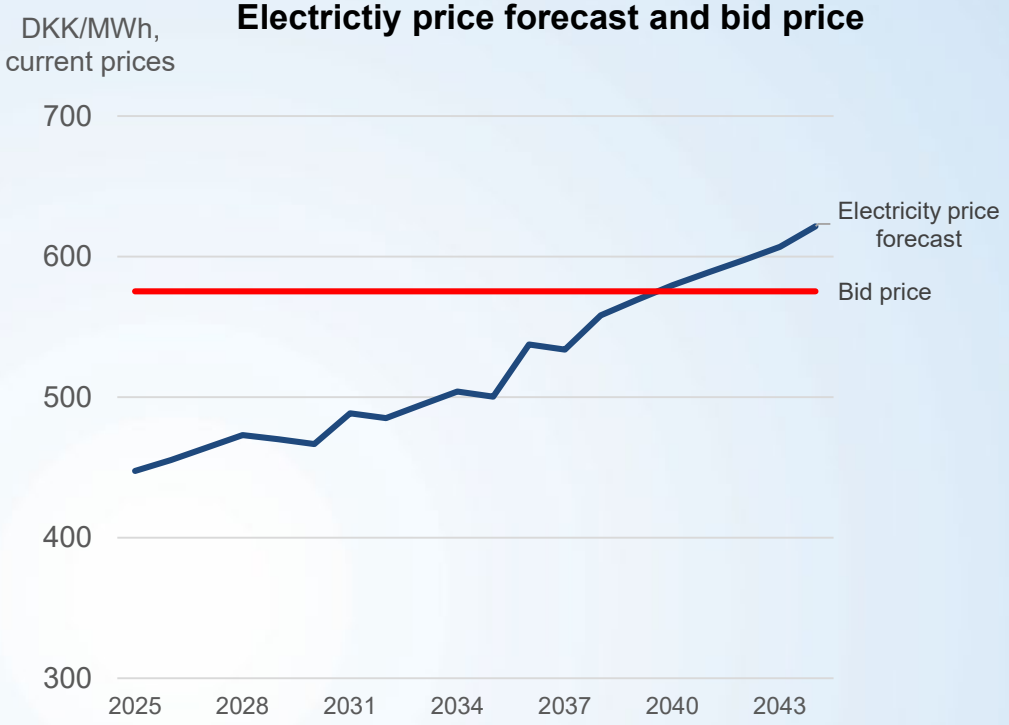
$$NPV\ E = \sum_{t=1}^{20} \frac{(575{,}2 - p_t) \times 800 \times 4{,}500}{(1+r)^t}$$

$NPV\ E$	– net present value of expected subsidy expenditure
t	– time period
b	– bid per MW
p_t	– expected reference price at time t per MWh
K	– capacity in MW
FLH	– expected full load hours
r	– discount rate

- ***Example: A bid with total expected subsidy costs amounting to exactly DKK 3.7 bn. (the budget evaluation threshold): Bid price 575,2 DKK per MWh ≈ 77 EUR per MWh for 20 years.***

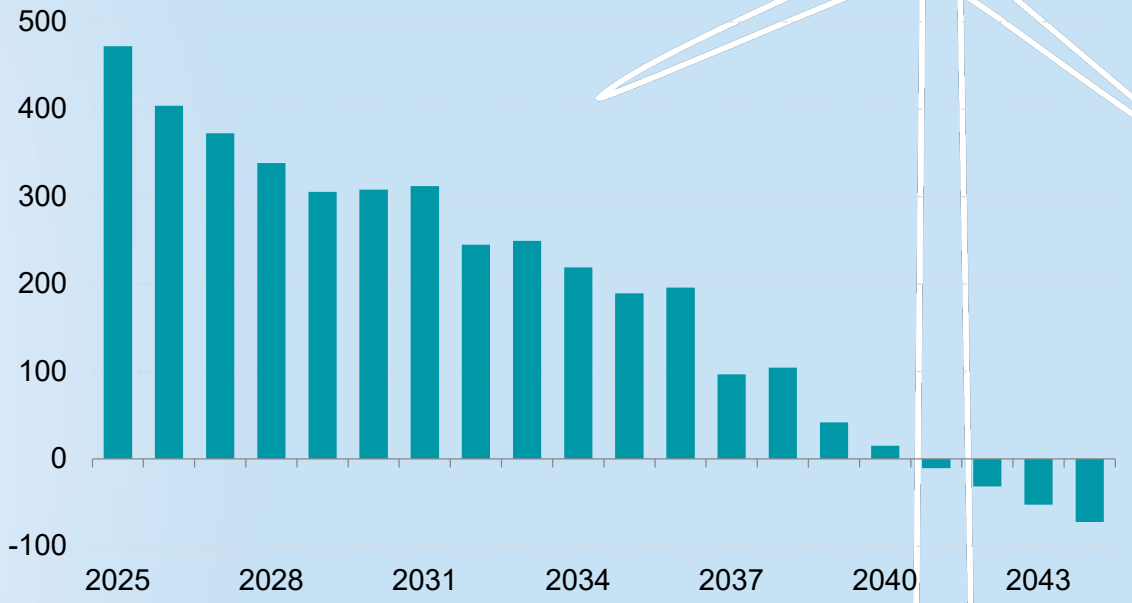
Example

Electrictiy price forecast and bid price



Yearly subsidies from the state or payments from the concession winner

(DKK mill. 2018 prices)



Bid price: 575.2 DKK/MWh
Capacity: 800 MW
Total expected subsidies in 2018-prices: DKK 3.7 bn.

Questions or comments?

Questions posed in the discussion paper

- Will the subsidy scheme described cause reluctance or concerns with regards to tender participation?
- Are there any unforeseen risks within the subsidy scheme described that could be mitigated by the DEA?
- Are there any concerns regarding size of the budget evaluation threshold and regarding the two award criteria? Furthermore, will the budget evaluation threshold allow for tenders with a capacity of more than 800 MW within the threshold?