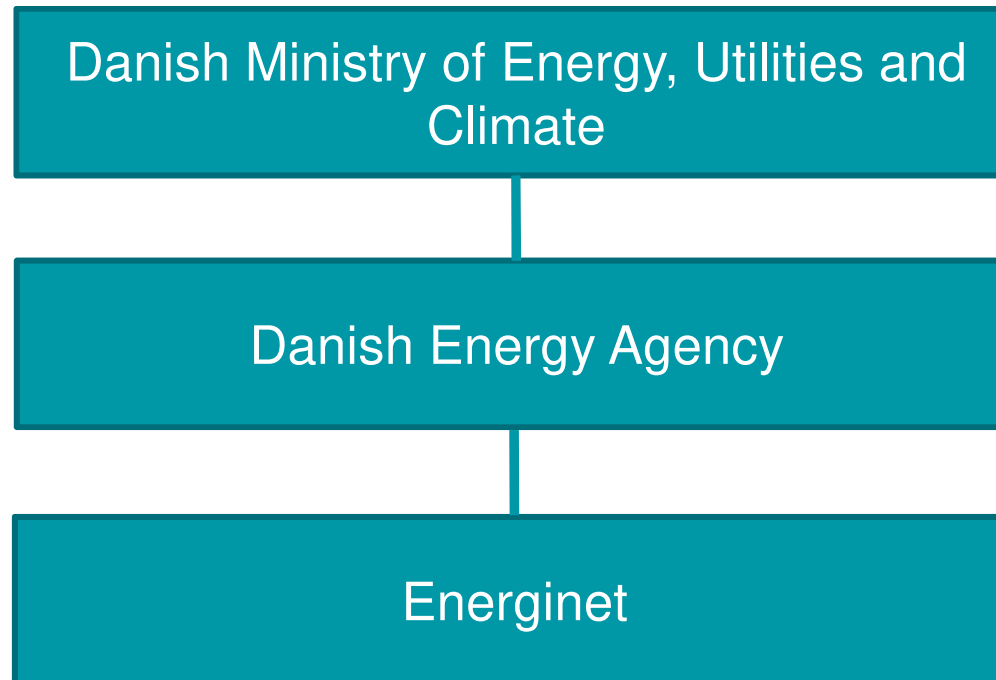




Technical dialogue on site-investigations for Thor offshore wind farm tender

*Danish Energy Agency and Energinet
13th May 2019*

Roles of the Danish Energy Agency and Energinet



The teams behind the process

Danish Energy Agency

Theme	Primary lead
Project Management	Jeppe Lundbæk
EIA	Søren Keller Tobias Grindsted
Legal issues, tender conditions	Dijana Dmitruk Ulrike Clade Christensen
Technical aspects	Søren Dale Pedersen
Market dialogue and process	Randi Lucie Aliaga Anette Norling Therese Kofoed Jensen

Energinet

Theme	Primary lead
MetOcean	Jan Havsager
Grid planning and technical aspects	Poul Mortensen
EIA	Stine Rabech Nielsen Margot Møller Nielsen
Site-investigations	Jens Colberg-Larsen



Program

Time	Subject
1230 - 1245	Brief introduction to Thor tender process
1245 – 1310	Aim of the technical dialogue
1310 – 1415	Program for seabed investigations
1415 – 1440	Coffee break
1440 – 1510	Metocean
1510 – 1530	EIA consenting process
1530 - 1600	Environmental investigations
1600 - 1615	Meeting closure

Energy Agreement 2018

- Energy Agreement of 2018, strong political support
- Offshore wind contribute to 55 % of energy consumption covered by renewable energy in 2030
- Three offshore wind farms (combined min. 2400 MW) to be established before 2030:
 - # 1 tendered out 2019 (Thor)
 - # 2 tendered out 2021
 - # 3 tendered out 2023
- Thor offshore wind farm:
 - Capacity of 800-1.000 MW
 - Offshore substation and export cables included
 - Location on the West Coast of Jutland (North Sea)



Aim of the technical dialogue - de-risking and level playing field for potential bidders

Jepppe Lundbæk, Project Manager, DEA

Key objectives of the dialogue

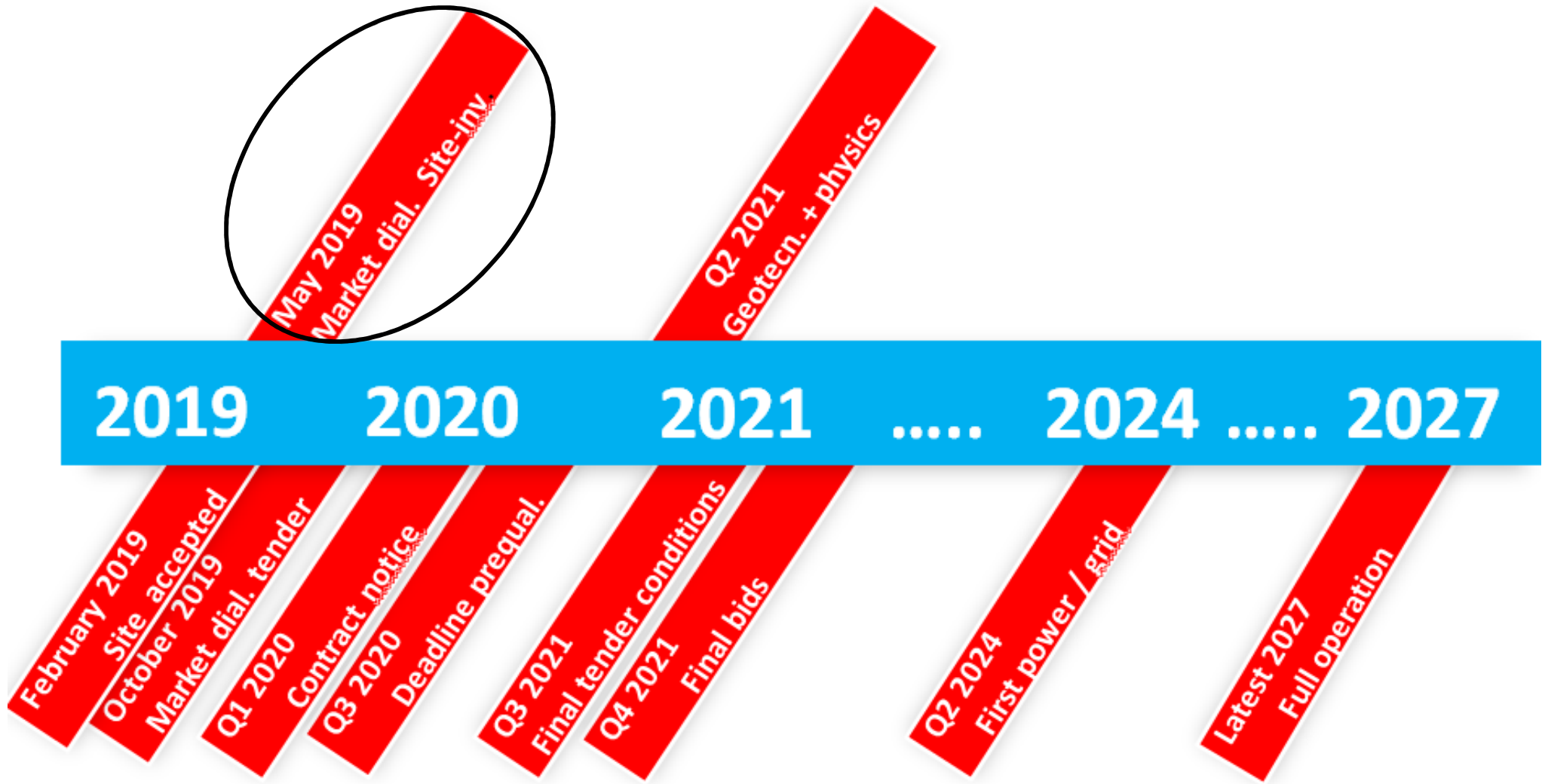
- **Assumption:**
 - providing key site-investigation data, MetOcean data and environmental assessment lowers the risk for bidders
- **Objective:**
 - The DEA and Energinet undertake, procure and provide data and surveys results, which bidders can use for preparing bids
- **Aligning expectations:**
 - The DEA and Energinet propose methods and scope for investigations and surveys, stakeholders provide feedback
- **Costs:**
 - Initially paid by DEA/Energinet, later winning bidder pays the bill

Format for the dialogue

- Today – clarification, immediate reactions and preliminary feedback
- Next 7 days – send us feedback by email to: thor@ens.dk
 - Deadline: 20th May 2019
- Results from the dialogue to be posted at the Thor website: <https://ens.dk/thor> in the form of Q&A's

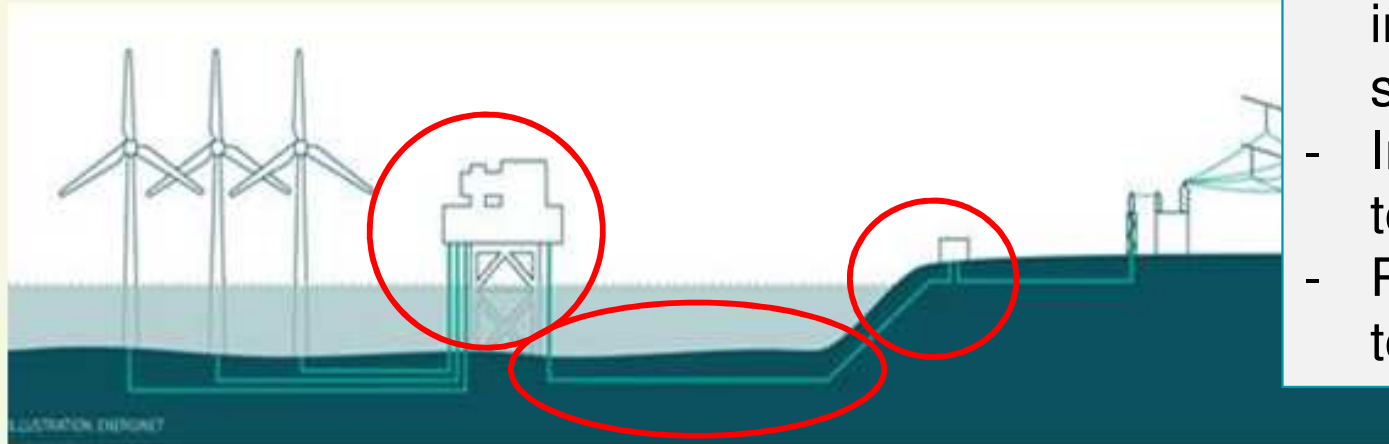


Tender process and milestones

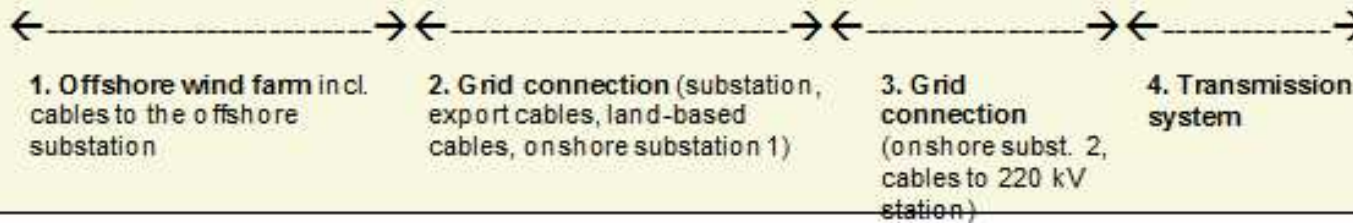


New: grid connection included

Typical grid connection to the transmission system for an offshore wind farm

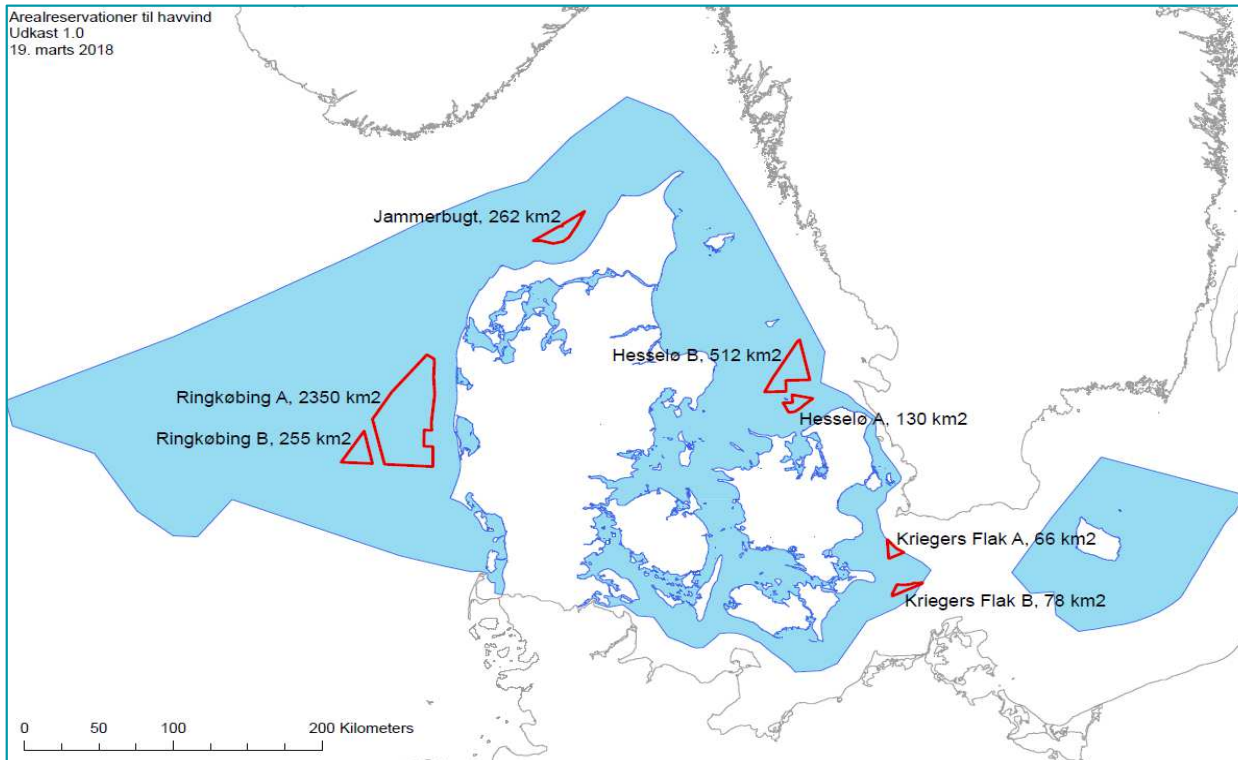


- Political decision
- Stimulate innovation in design & techn. solutions
- Increase parameters to compete on
- Possibility to lower total costs further





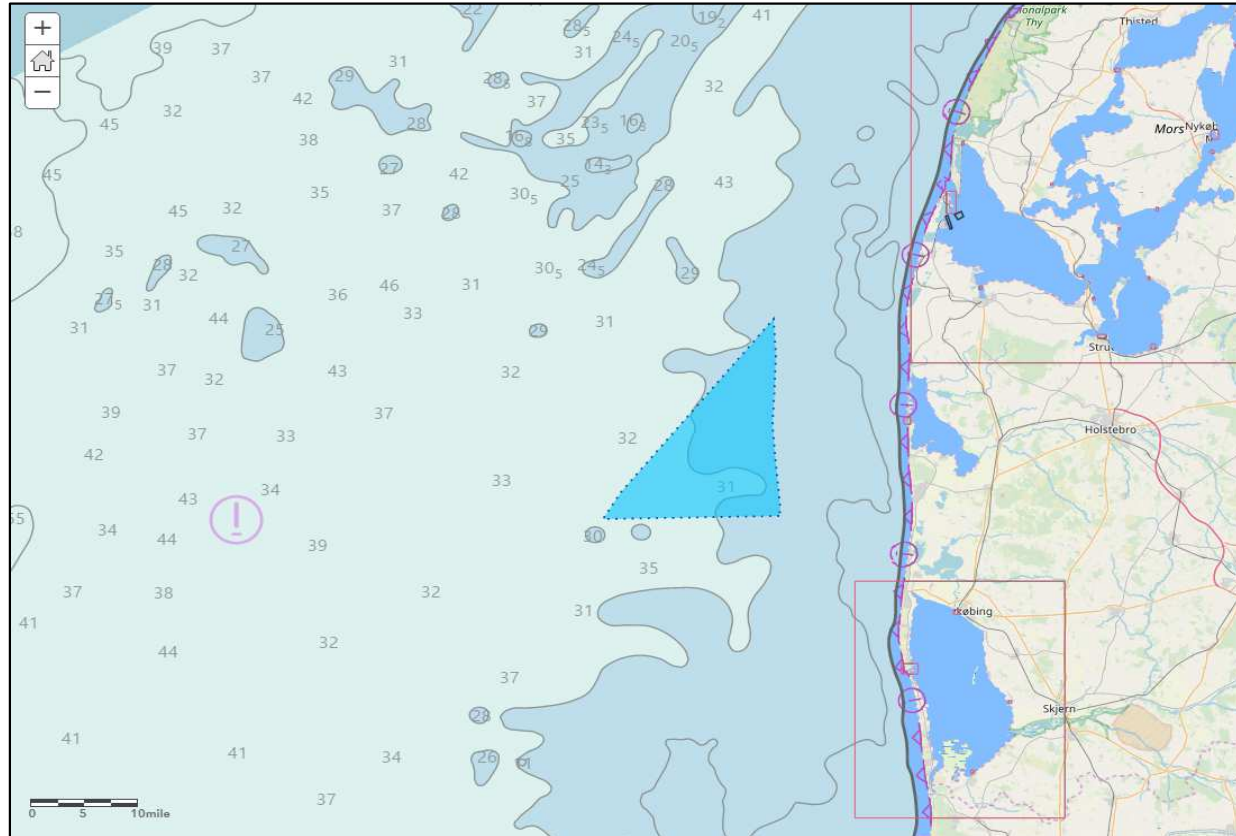
Area for site-investigations (I)



- Fine-screening of the Danish sea territory:
 - Prelimin. analysis of planning, environment, geology, wind ressource.
 - Economic ranking of potential sites

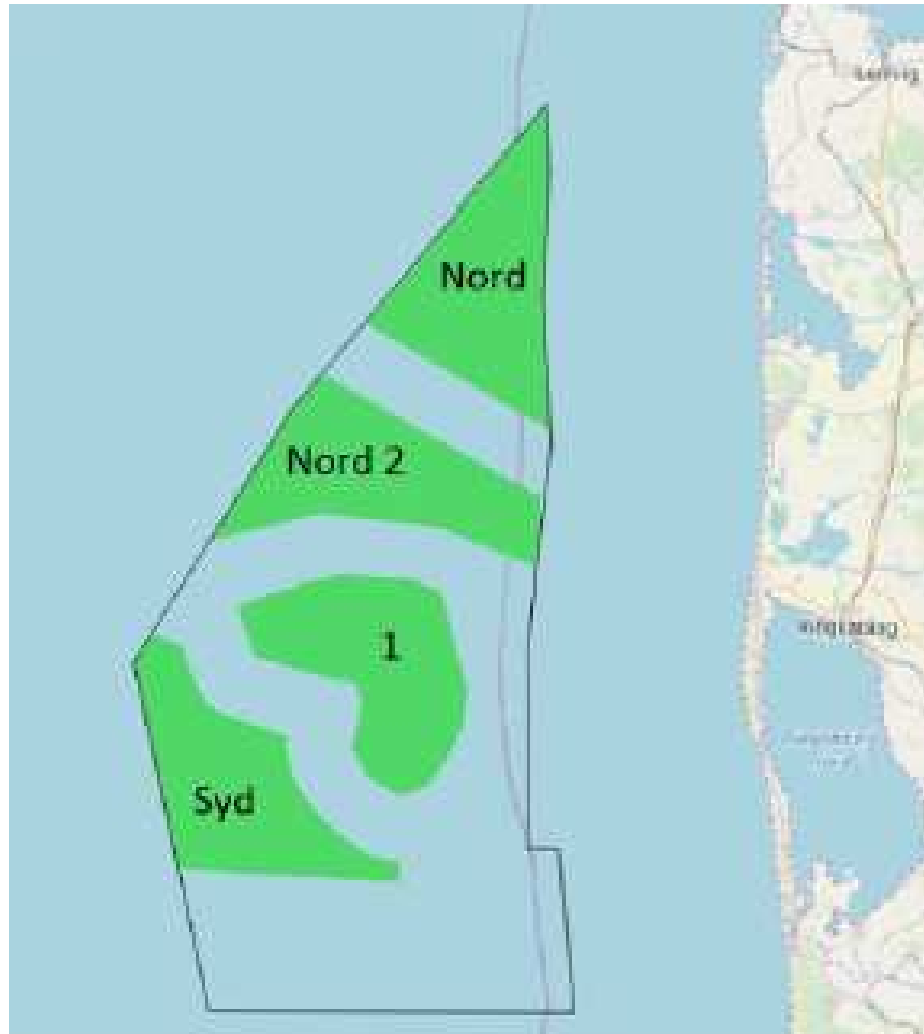


Area for site-investigations (II)



- 440 km² to be investigated
- Reserved and cleared (other authorities)
- 20 km from coast
- Bird surveys completed in May 2019
- Ultimately 180-220 km² (4,54 MW/km²), which allows for screening out problematic areas

Room for four wind farms



- Ideal utilization
- 6 km between OWF
- Room for 3-4 OWF

Source: COWI finscreening (2018)



EIA consenting process

Dijana Dmitruk, Legal Advisor, DEA



Adjustments to existing EIA-approach (I)

Context for adjustments:

- In December 2018 the Danish Energy Board of Appeal published a decision concerning a specific Danish offshore wind farm
- This decision causes a need to adjust the EIA permitting process for offshore wind farms
- Currently, the permitting process is being analyzed and modified in light of the EBA-decision
- Details will follow at our October market dialogue

Adjustments to existing EIA-approach (II)

Main considerations for our adjustments:

- Key focus on avoiding future EAB-decisions in light of the EAB-decision on (sound legal process)
- Ensuring best possible risk-mitigation measures for bidders concerning environmental assessments concerning the site
- Striving to issue the license to construct (i.e. the EIA-permit) as early as possible in the process to allow for FID as early as possible

Wrap up and closing remarks

- Feedback by 20th May 2019
 - Email questions/remarks to thor@ens.dk
- Slides to be found at <https://ens.dk/thor>

