



Baltic
InteGrid

Integrated Baltic Offshore
Wind Electricity Grid Development

Denmark – Transmission system and offshore wind connection

Project meeting – Berlin November 24-25

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Agenda

1

- **Key facts and figures**

2

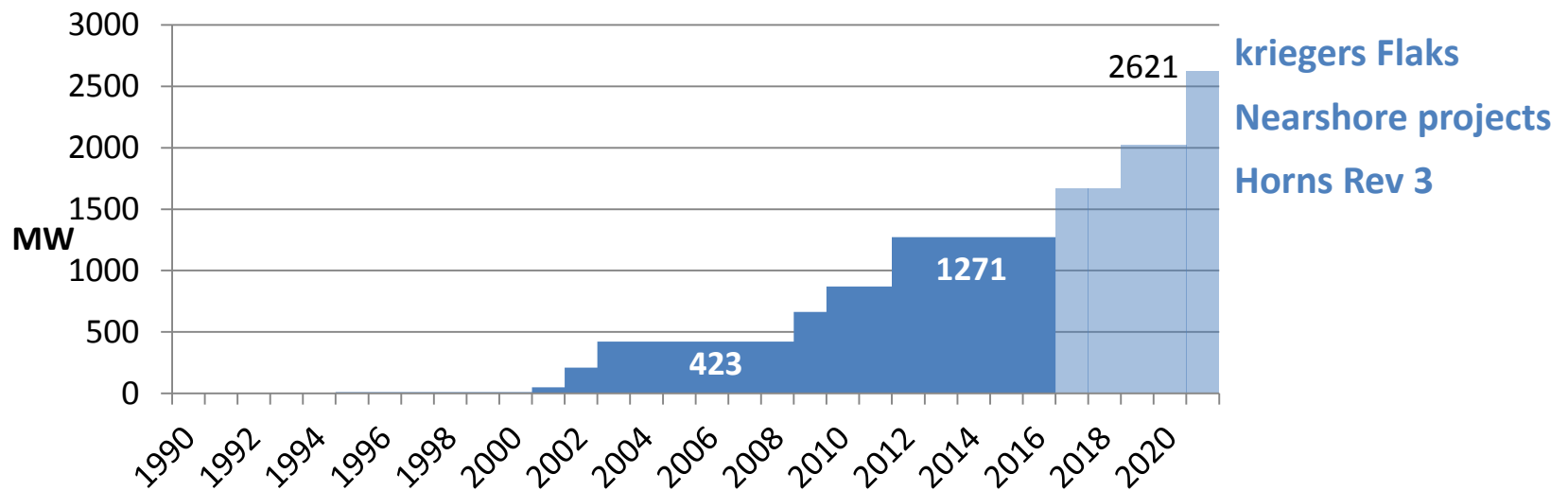
- Grid development

3

- Responsibility allocation

Key facts and figures

- Denmark is a leading country in terms of OW development
- Total capacities expected to double in the next 5 years
- Half of the electricity demand must be covered by wind by 2020



- Energinet.dk is the independent public company under public ownership in charge of maintaining and operating the grid
- Numerous interconnection projects underway

Key facts and figures – Ongoing projects

- 4 projects are in the pipeline
 - 2 Nearshore projects – 350 MW(Vesterhav Nord & Syd)
 - Horns Rev 3 – 400 MW
 - kriegers Flaks – 600 MW
- Two ways of attribution
 - Tendering process
 - Open door process

Key facts and figures – Nearshore projects

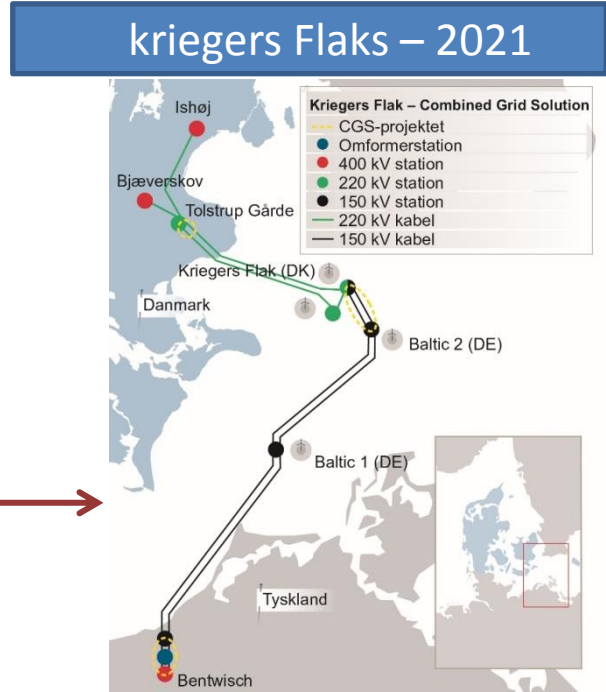
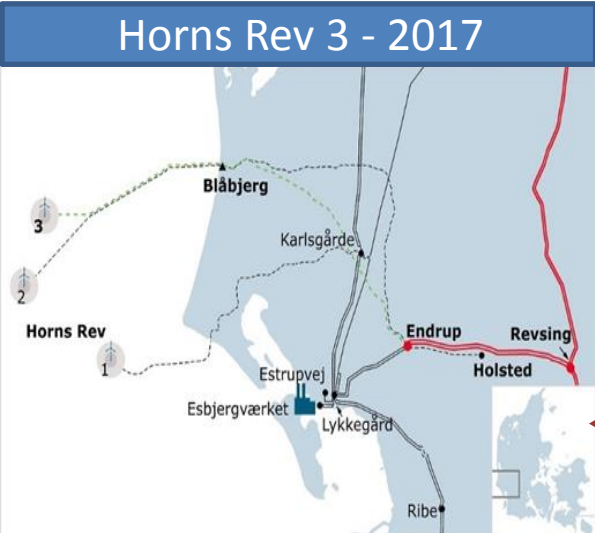
Vesterhav Nord



Vesterhav Syd



Key facts and figures – Large projects



1

- Key facts and figures

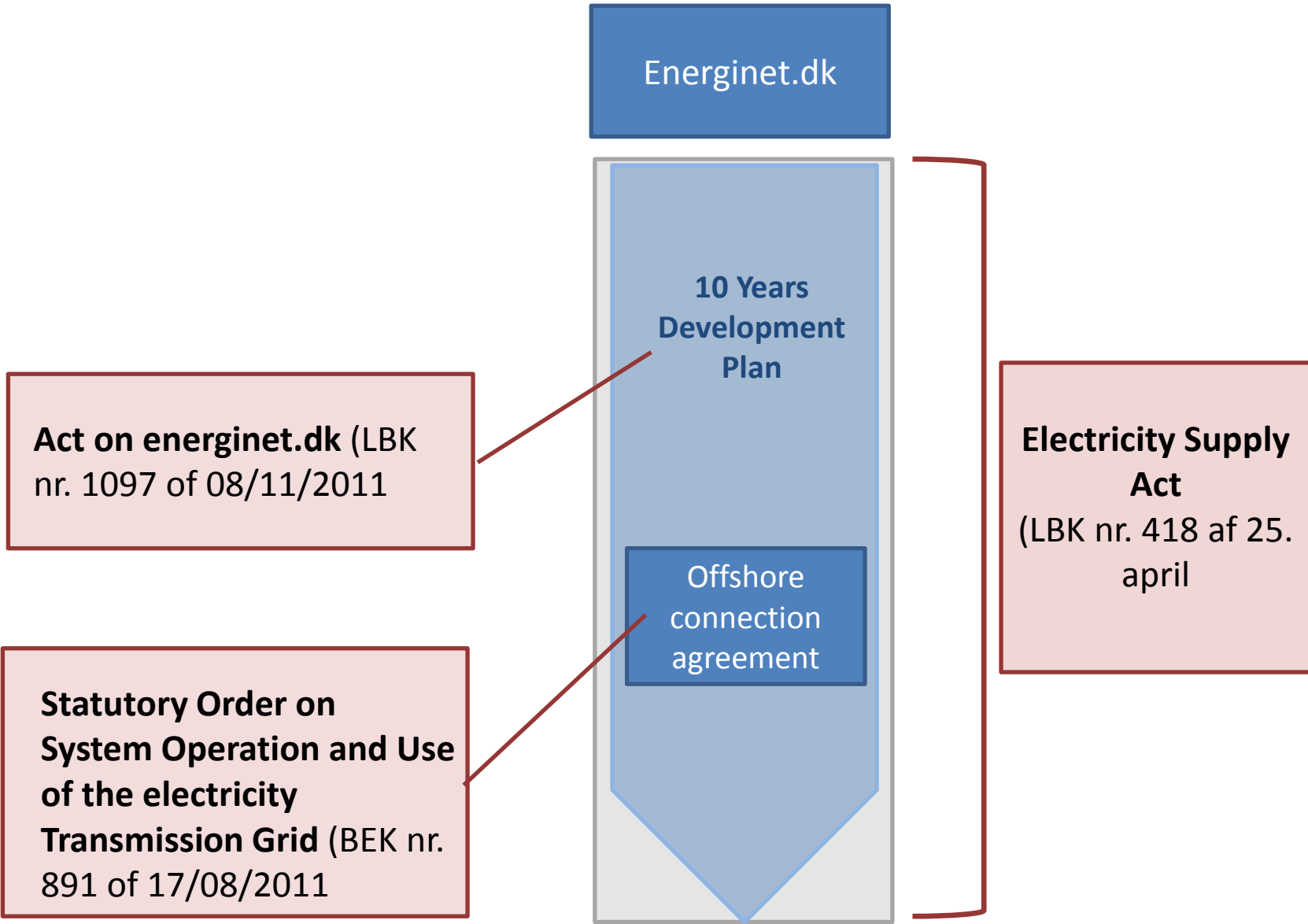
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- **Grid development**

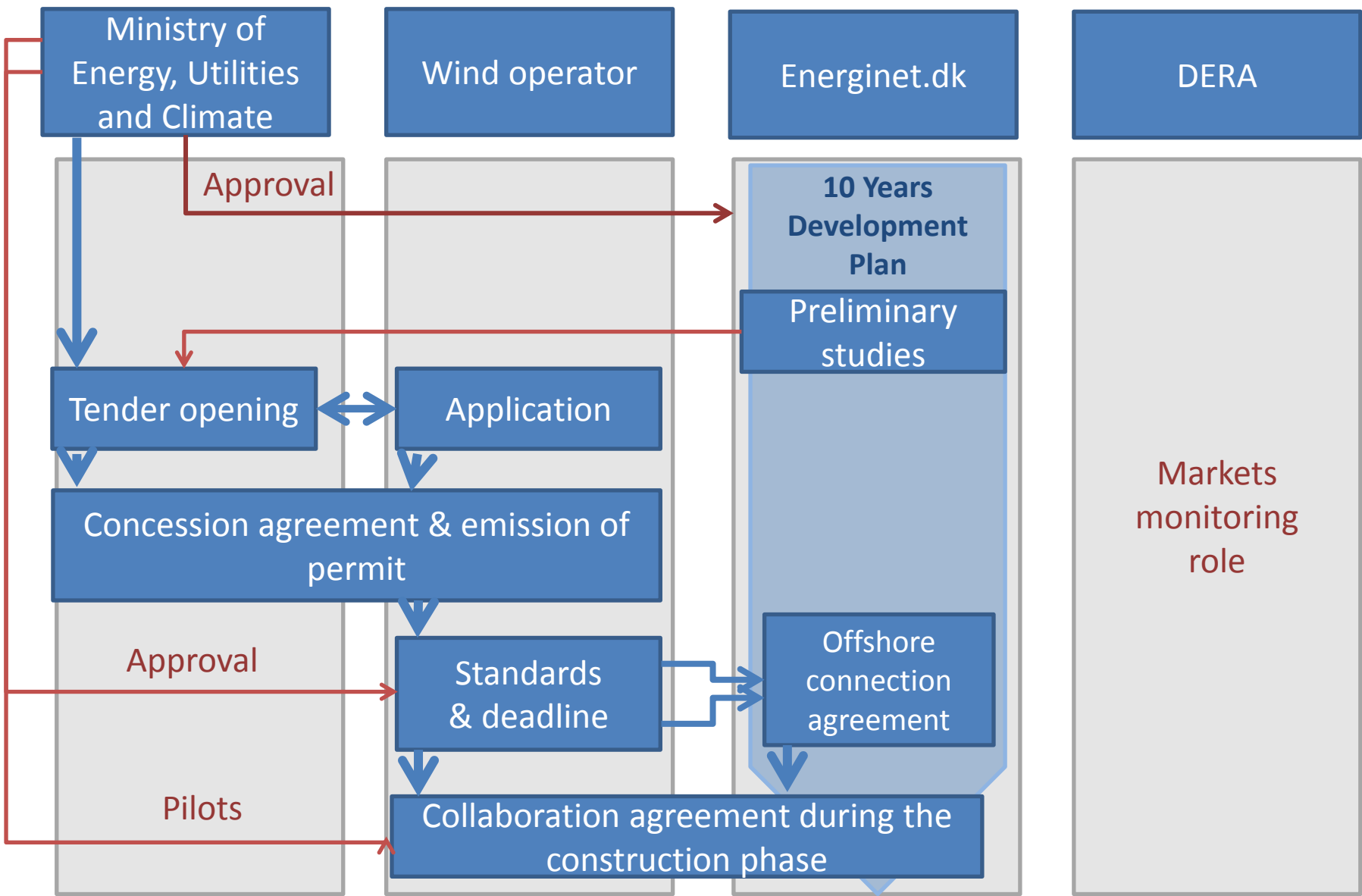
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- Responsibility allocation

Grid development – Key legal texts



Grid development – Planning and construction



1

- Key facts and figures

2

- Grid development

3

- **Responsibility allocation**

Responsibility allocation – Connection costs

Case 1: tendered (for near-shore only) and open door projects

Shallow approach



Case 2: Horns Rev 3 and kriegers Flaks projects

Ultra shallowish approach



Example for kriegers Flaks:

- 2 offshore transformer platforms
- Submarine cables
- Onshore facility
- 95 km cables must be laid onshore
- Expansion of onshore substations

Budget : 470 M EUR

Responsibility allocation – Non compliance

- Case 1: The TSO does not respect the commissioning deadline – **Concession agreement**
 - Energinet .dk is liable for the overrun costs and the losses suffered by the wind operator
 - The level of damages due to the wind operator are capped
- Case 2: The TSO commits a fault with respect to its installations – **Market Regulation E**
 - Energinet .dk must compensate the wind operator
- Case 3: The wind operator does not comply with the standards
 - The wind operator is liable for the costs engaged by the TSO (Preliminary studies and infrastructures costs)



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Thank you