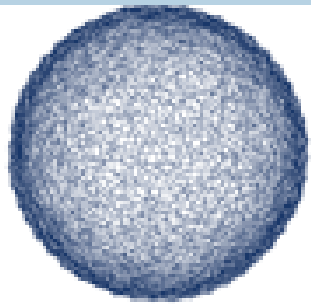




Off-shore Wind farms – international cooperation



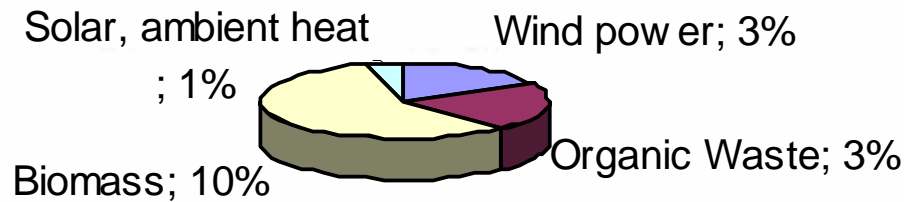
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Anders Hasselager
Senior Policy Advisor

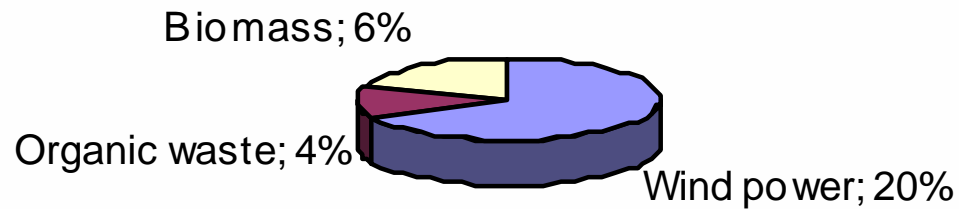


**Polish-Scandinavian Cooperation
In relation to Off-Shore Wind**
Warsaw, 17 November 2009

Types of Renewables in Denmark

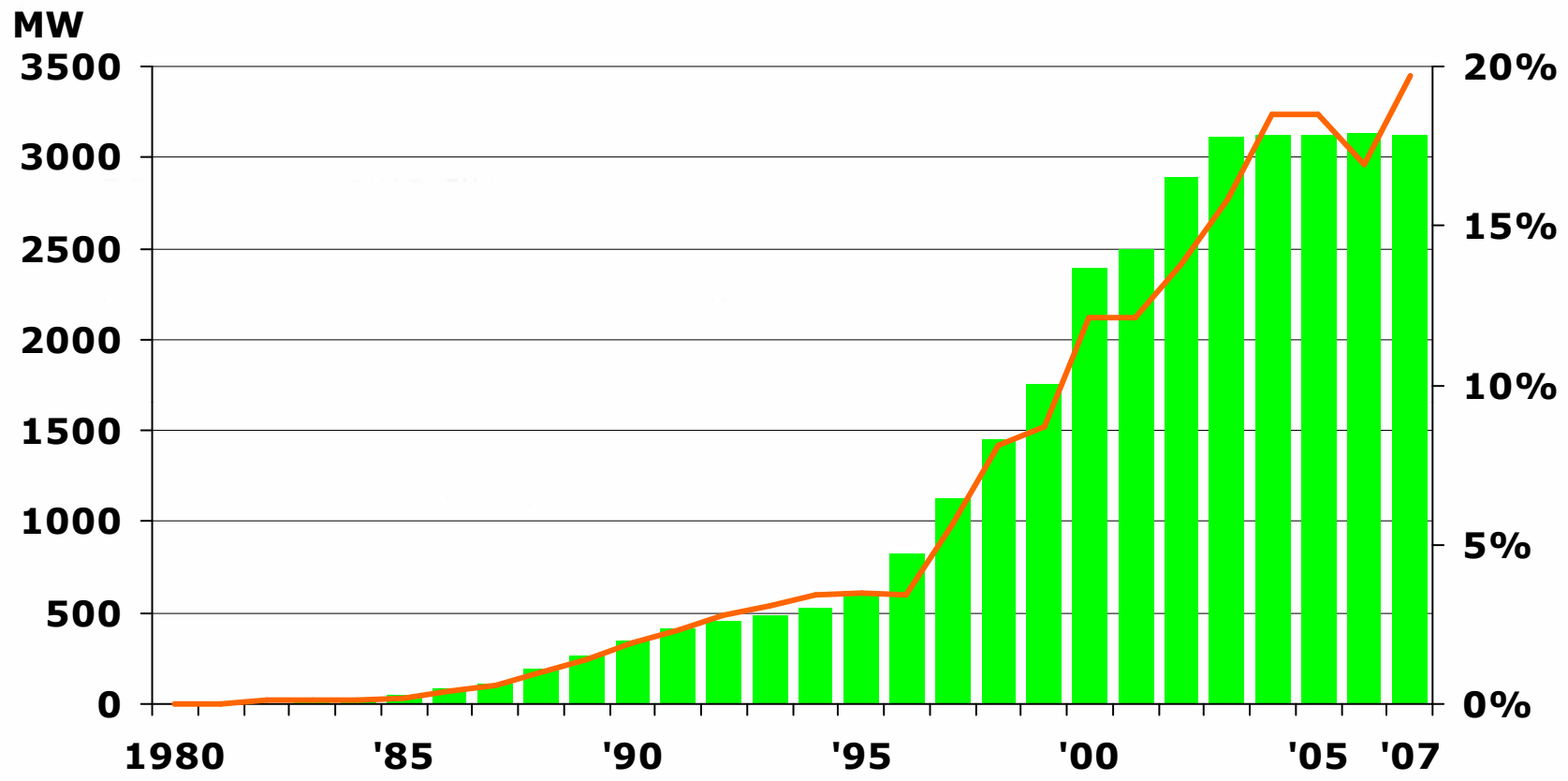


Share of Gross Energy Consumption:
17 % by 2007
(share doubled in 10 years)



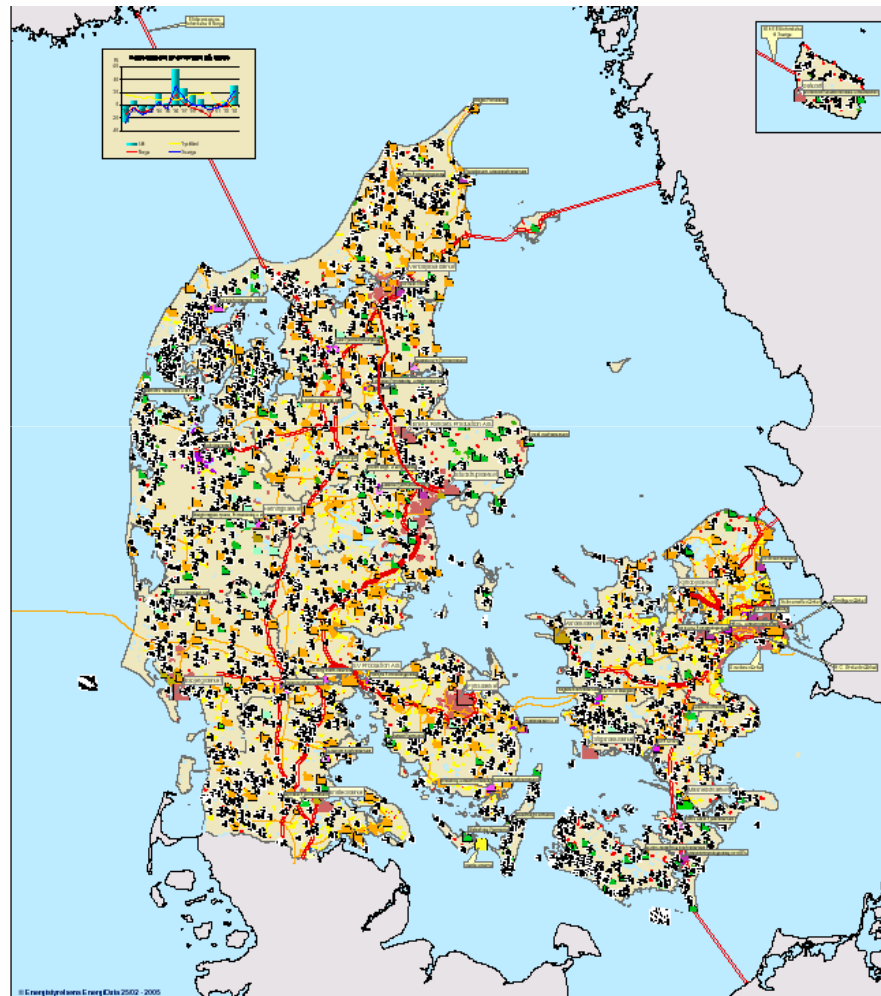
Share of Electricity Supply:
29½ % by 2007
(share tripled in 10 years)

Wind Power: Capacity and Share of Domestic Electricity Supply



Wind Power Capacity [MW]
Wind Power: Share of Domestic Electricity Supply

Windfarms on land



DK: 18 years of experience offshore

- **1991**: First Danish offshore wind farm
- **End 2009**: >650 MW offshore
- **2007/08**: Strategic assessment for future location of 5200 MW offshore wind power
- **2010**: 200 MW is under construction
- **2012**: 400 MW new offshore windfarm (in planning)
- **2013**: app. 1300 MW offshore



Models for installing offshore capacity

Tender

- Political agreement
- Typical large scale farms
- Fixed price
 - Rødsand 2 (62.9 øre/kWh)
 - Horns Rev 2 (51.8 øre /kWh)
- Cable to shore paid by electricity consumers
- Strict time schedule

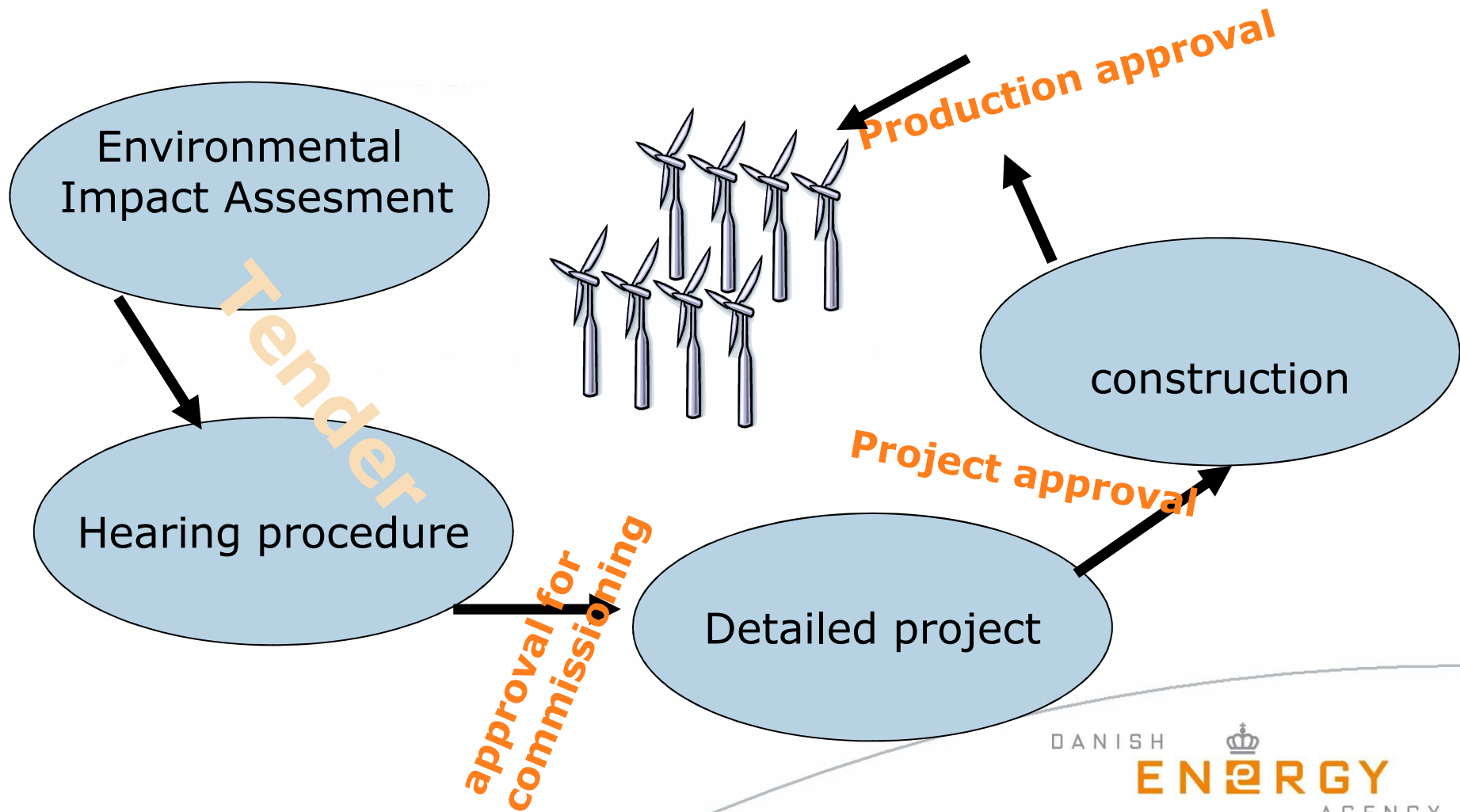
Open door

- Application
- Typically smaller scale and test farms
- Premium (25 øre/kWh) on top of market price
- Cable to shore paid by investor
- Variable time schedule

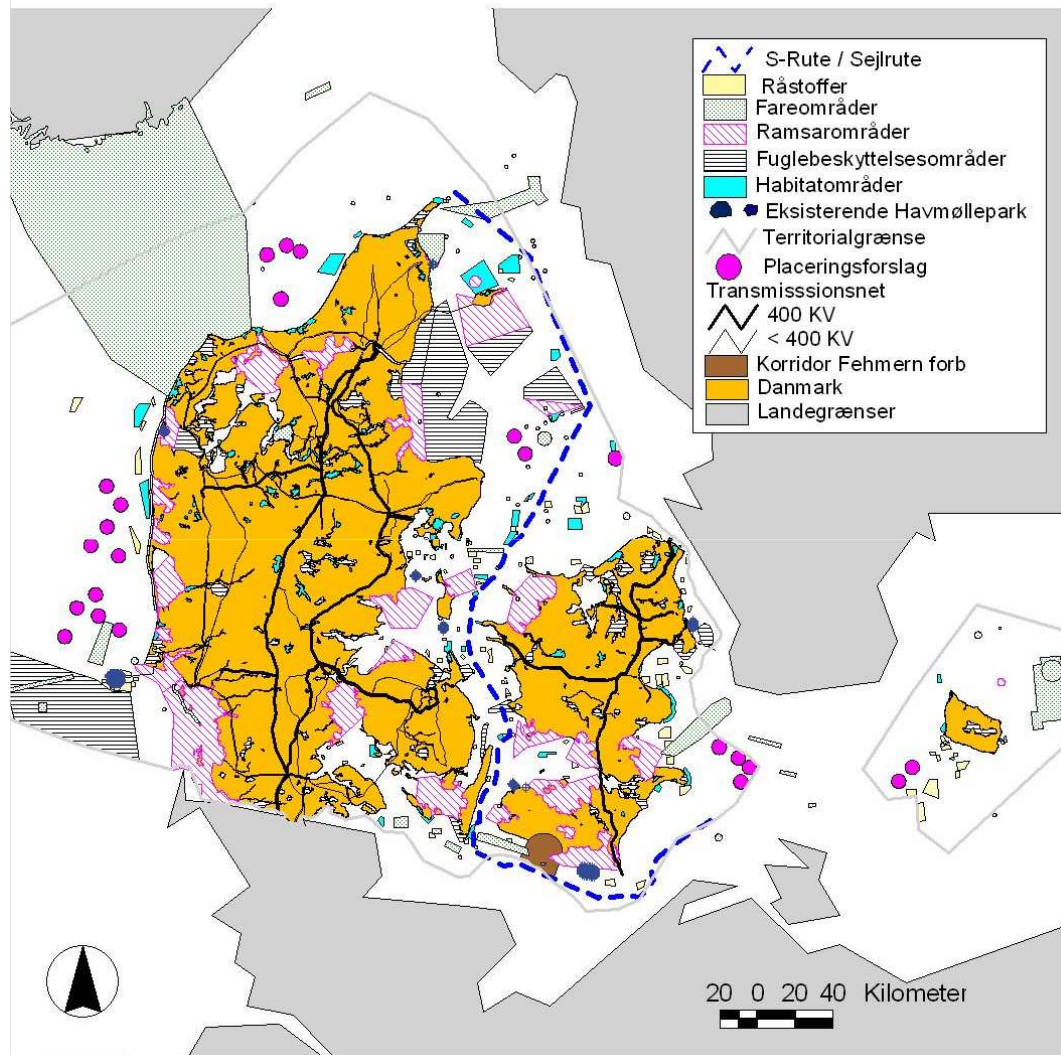
Tendering-model

- Screening for site suitability
- Tender: Fixed price in 10-12 years
- TSO to finance, construct and operate transformer station and sea cable
- TSO obliged to connect wind power and strengthen grid if necessary
- Security that grid connection is available in due time
- Financial compensation if the power produced is curtailed
- One stop shop communication

One stop shop (land and sea)



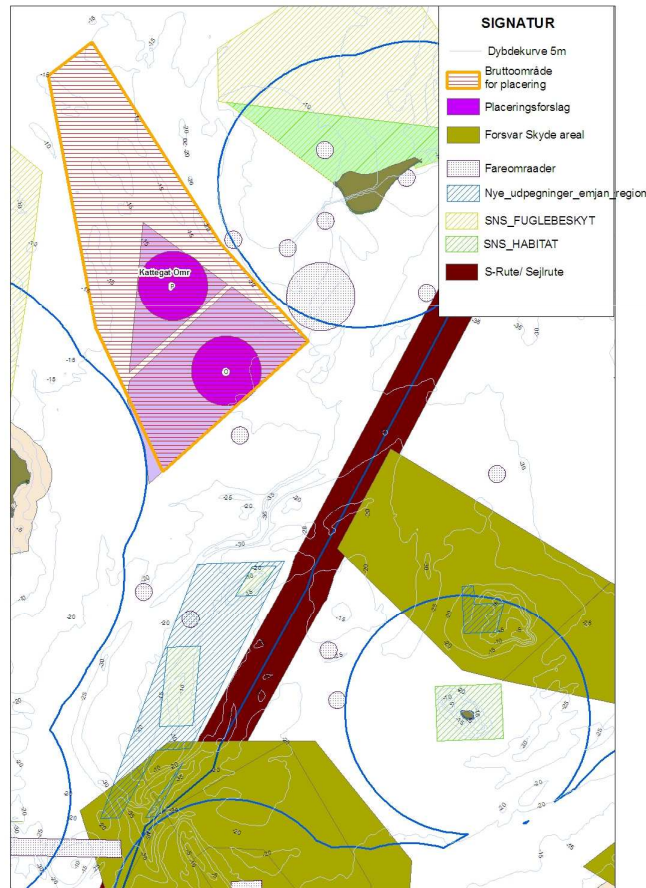
Preparing for the future



- 23 sites of 200 MW identified
- 4800 MW
- Equivalent to 8 % of total demand or 50% of electricity demand
- Consultation answers are taken into account
- A sensitivity analysis is used in the decision-making process for the actual site selection

Offshore wind action plan

Anholt offshore wind farm



Area suited for 400 MW (88 km²)

Area for EIA >600 km²

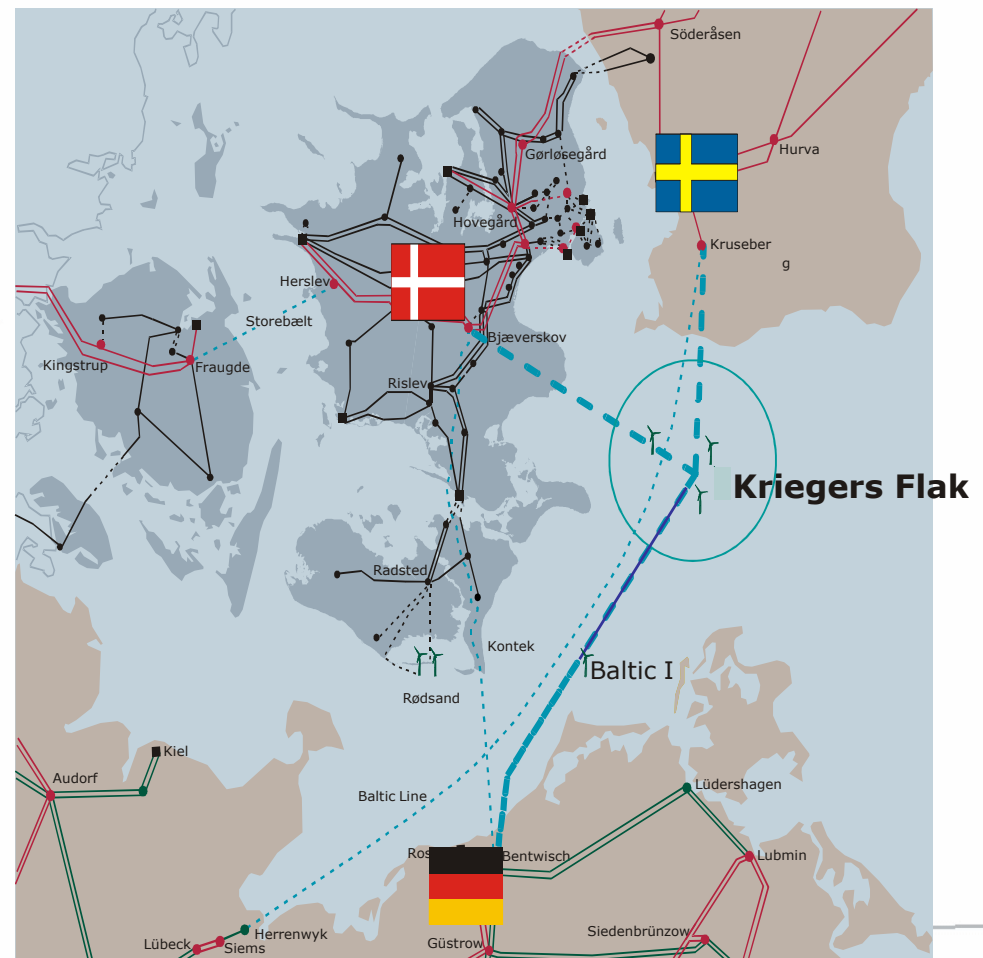
Depths 15-20 m

Possible grid connection to Anholt

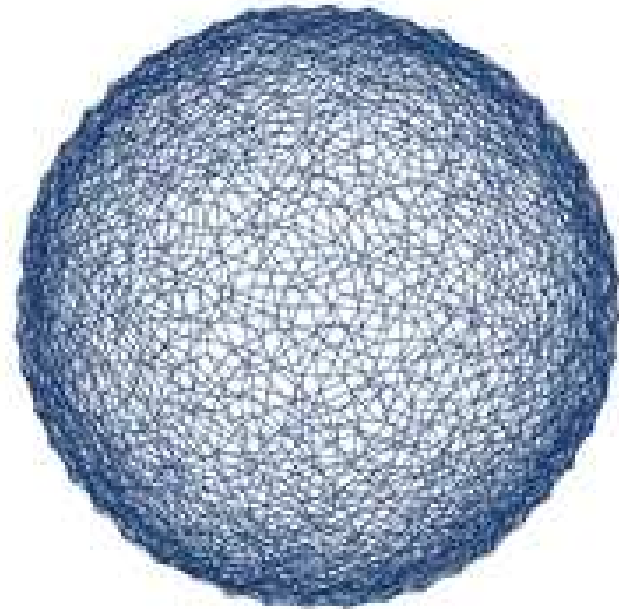
no significant grid reinforcement on land

Joint Offshore Project at Kriegers Flak

- Joint offshore farm between Denmark, Germany and Sweden.
- Capacity: 1,800 MW !!
- EU support of € 150 mill.
- Pilot project for other offshore projects.
- New RE Directive opens up for joint projects. Support scheme is a bilateral decision by the participating countries.
- Future joint projects between Denmark and Germany in North Sea?



Thank you for your attention



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