

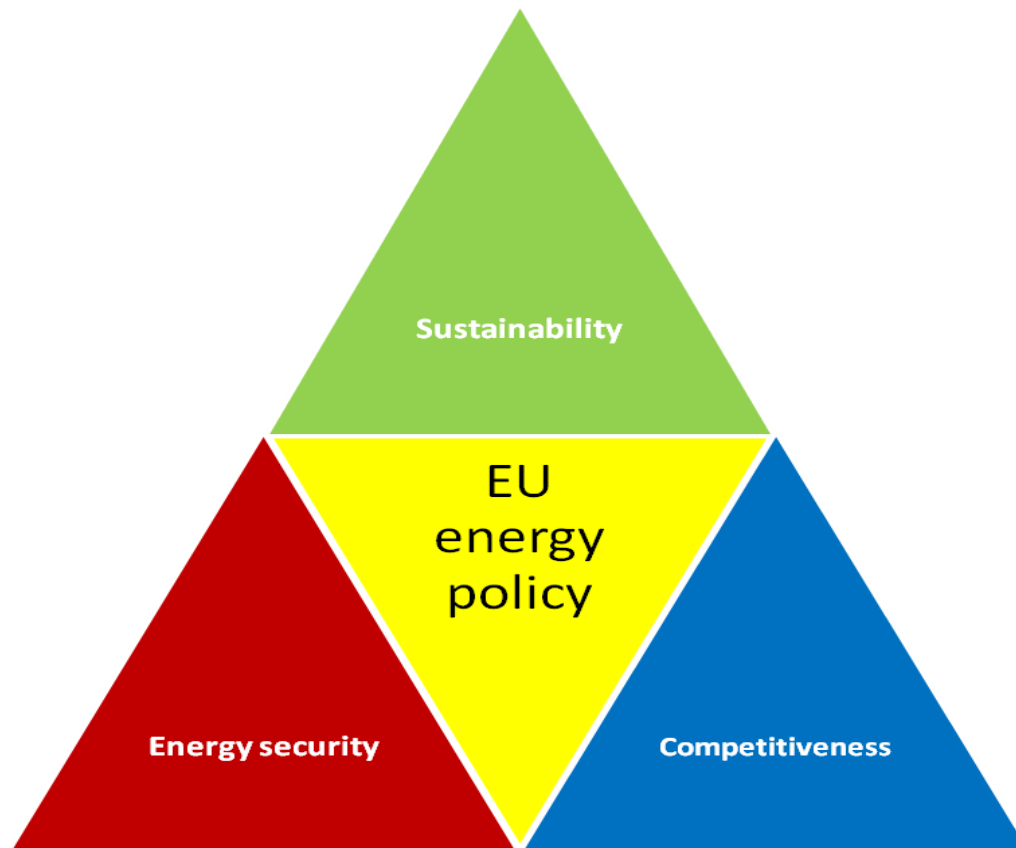


TP Wind
Brussels, 2 October 2012

EC Support to Offshore Wind Energy Technology

Matthieu Craye
European Commission, DG ENERGY

Broad policy framework : Integrated EU energy and climate policy



EU Policy Framework for OWE

Directive 2009/28/EC on the
promotion of the use of renewable
energy

COM(2008)768 Offshore Wind
Energy : Action needed to deliver on
the Energy Policy Objectives for 2020
and beyond

COM(2012)271 : Renewable
Energy in the EU energy
market

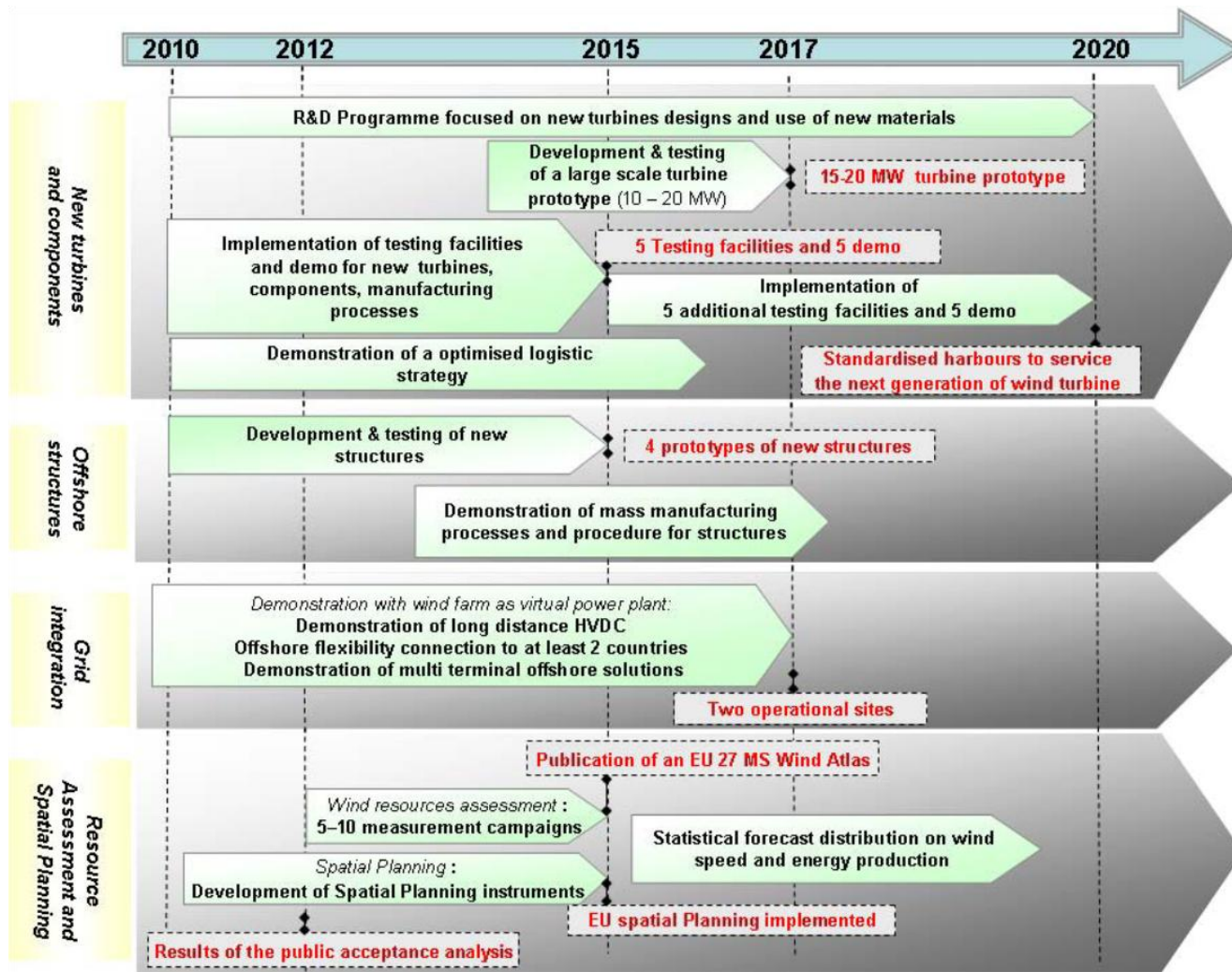
European Offshore Wind
Energy Targets :

2020 : 40 GW OWE

2030 : 150 GW OWE



Strategic Energy Technologies plan : European Wind Initiative



EU Support Instruments to Offshore Wind Technology Development

Framework Programme for RTD ; Trends:

- FP5: on-shore technologies – megawatt turbines
- FP6 : off-shore – multi-mW wind turbines (Downvind ; UPWIND project)
- FP7: deep water – (very) large wind turbines – floating structures – wind farm clusters – wind integration (Twenties) – offshore grid (Topic 2013)

European Energy Programme for Recovery (EEPR) OWE :
demonstration and first-of-its kind projects on turbines, structures, offshore grid

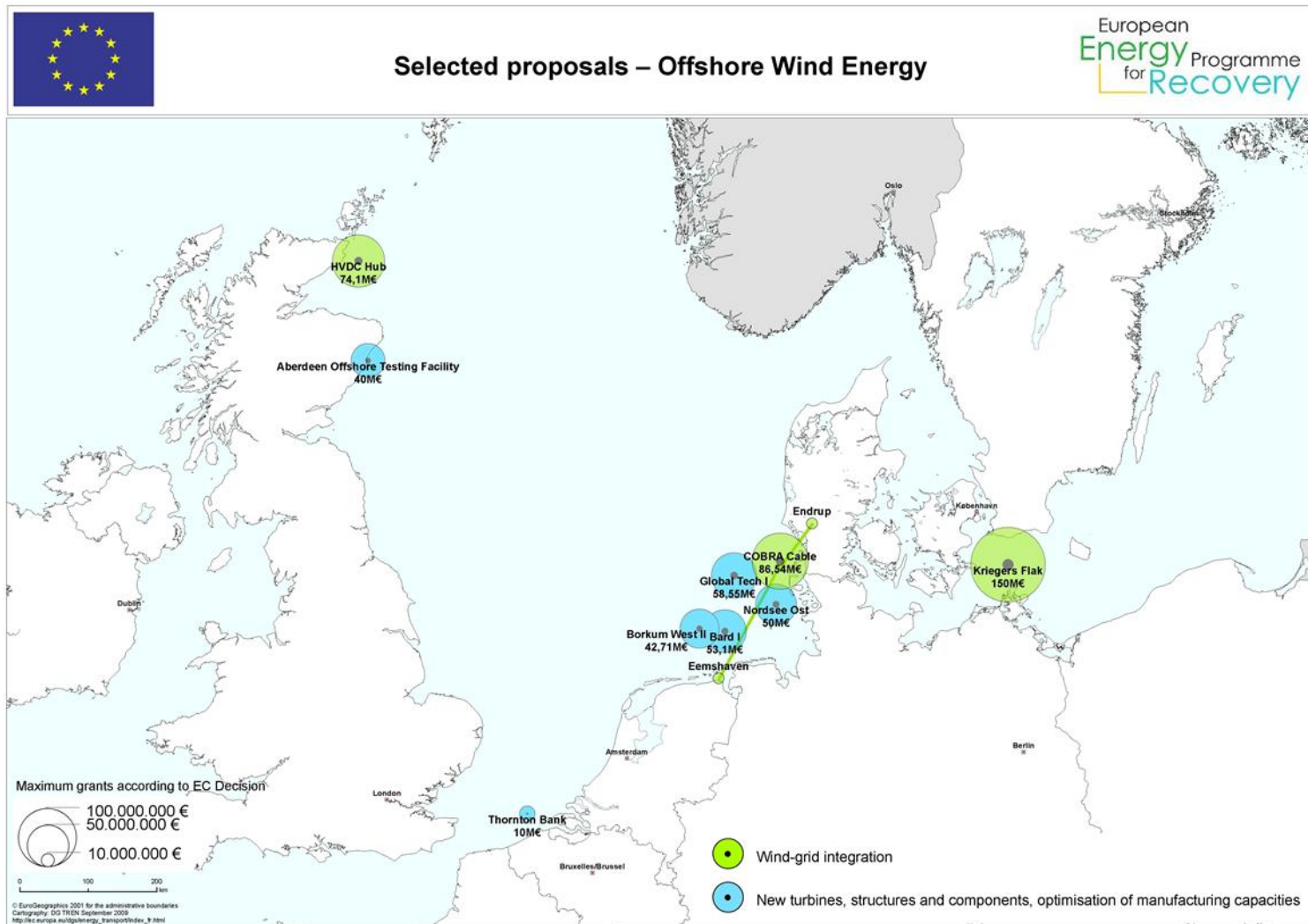
NER 300 early deployment ; floating structures, large offshore turbines

Intelligent Energy Europe
EIB loans
Regional Funds



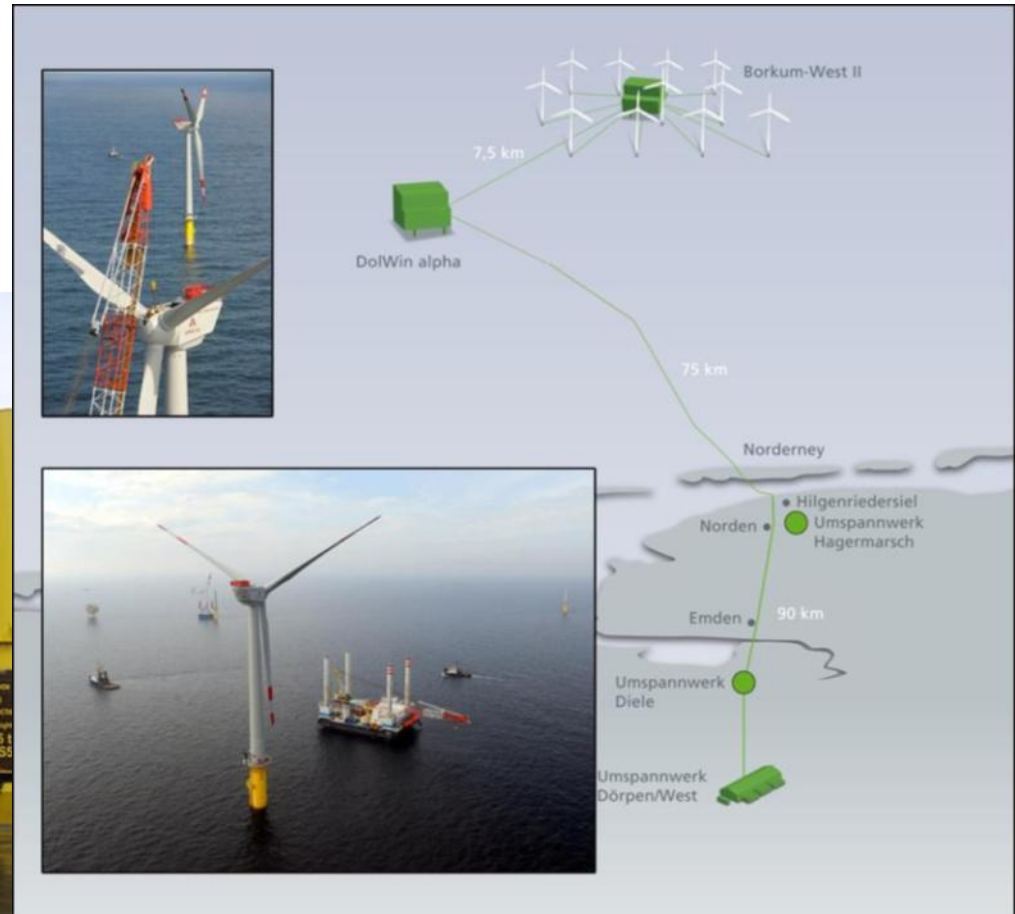
European
Commission

EEPR OWE : 565 million EUR for 9 projects



New turbines, structures and components, optimisation of manufacturing capacities (254 million EUR)

- DE : Bard I, Gravity Foundations, Nordsee Ost, Borkum West II
- BE : Thornton Bank
- UK : Aberdeen

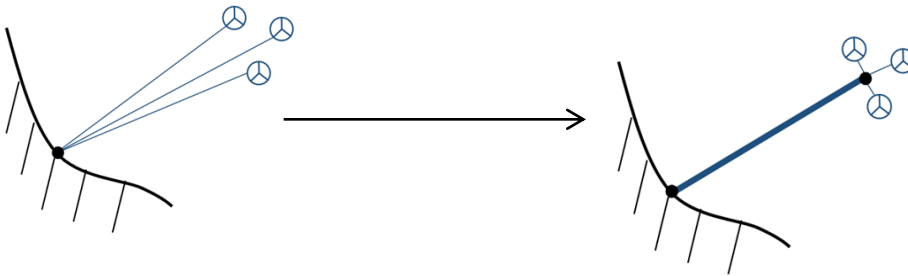


Offshore Wind-Grid Integration : 311 million EUR

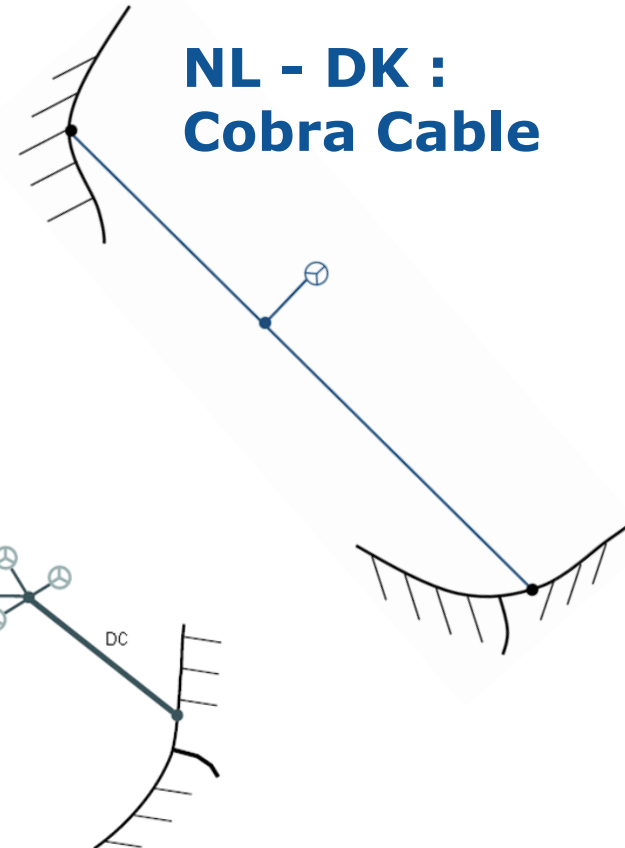
Projects addressing priorities for :

- Energy Infrastructure Package
- North Sea Countries Offshore Grid Initiative

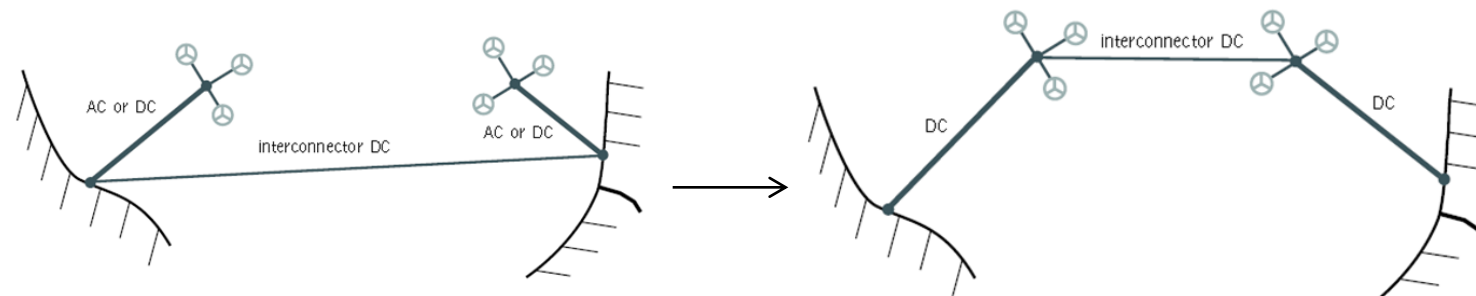
UK : HVDC Hub



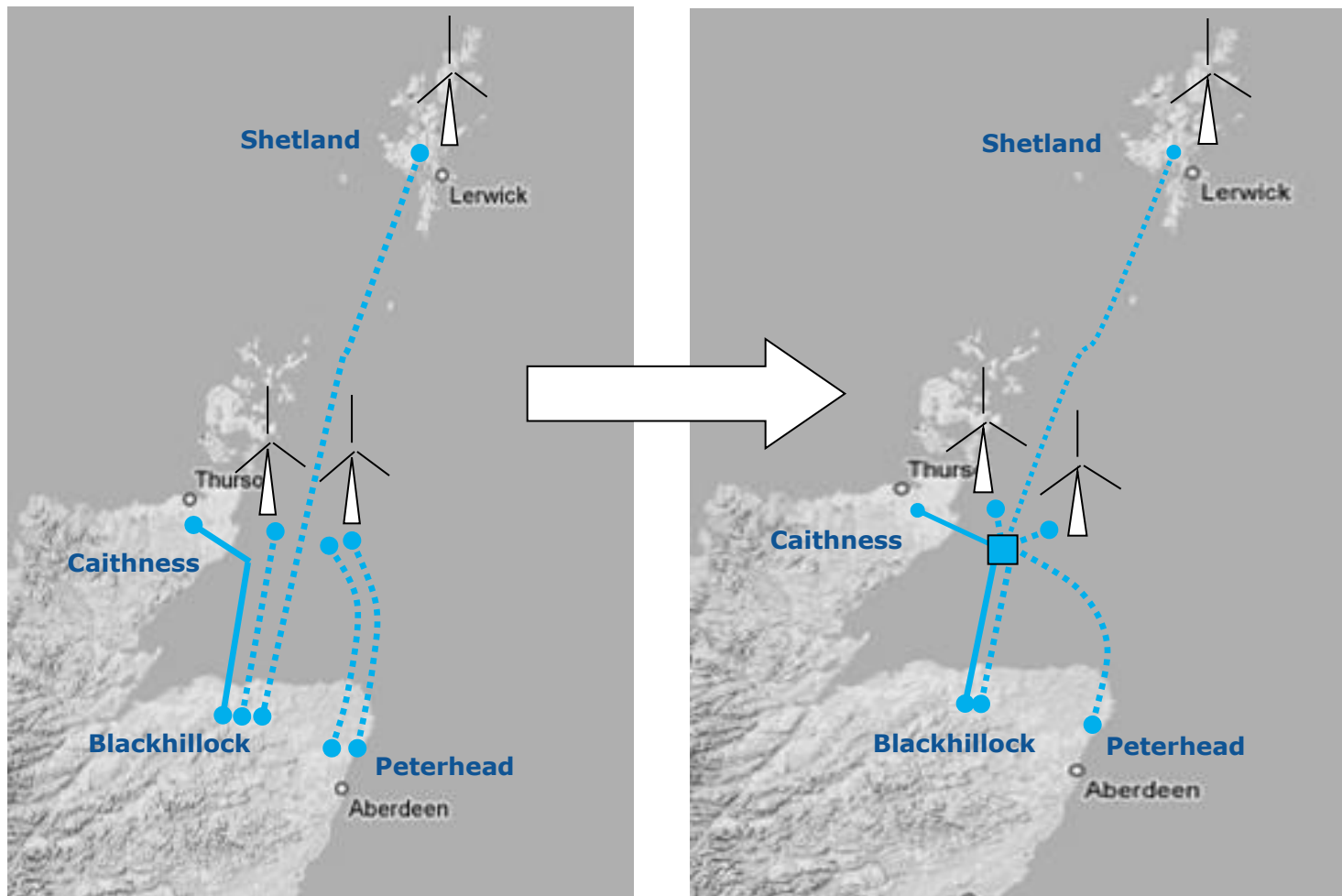
NL - DK : Cobra Cable



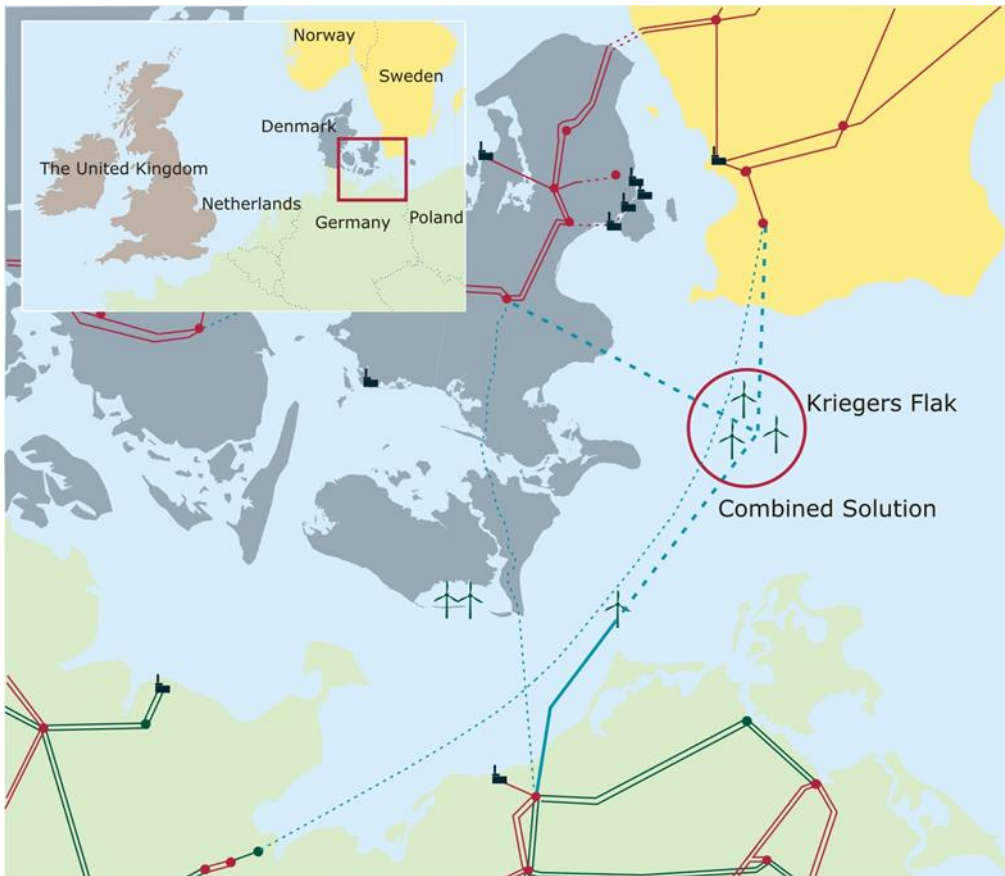
DE – DK : Kriegers Flak



Offshore Wind-Grid Integration : HVDC Hub



Offshore Wind-Grid Integration : Kriegers Flak Combined Solution



Concept

- Using the OWF cables for
 - » Grid connection of OWF
 - » Electricity trade
 - » Security and Supply

Benefits

- Optimizing socio-economic welfare
- Improved electricity market
- Improved security of supply
- Demonstration of new technologies
- Stepping stone for North Sea

EEPR OWE Implementation : state of play

Payments amount to 35% of committed budget

Turbines and structures sub-programme :

- Well advanced
- Delays because of permitting processes and grid connection
- Important learning, f.i. structures design, manufacturing and installation optimisation

Wind – grid subprogramme :

- No final investment decisions yet
- Complex and changing regulatory environment
- Need to demonstrate innovative HVDC technology

EC Support to Offshore Wind Energy Technology : outlook

H2020 : priorities based on updated EWI
Implementation plan

- **GRID Integration**
- **Innovation for optimising current designs
for offshore structures and turbines (5-6
MW)**
- **Exploiting deep water wind resources :**
 - **Floating platforms**
 - **Very large turbines**

EC Support to Offshore Wind Energy Technology :

FP7 topic currently open

Topic ENERGY.2013.7.2.3 : Large-scale demonstration of innovative transmission system integration and operation solutions for (inter)connecting renewable electricity production.

- Integration of large scale renewable electricity production far from consumption centres
- Possibly combined with integration of storage in HV networks
- Technologies for connecting offshore wind farms (HVDC , HVAC , multi terminal solutions)
- Power collections systems in offshore wind farms
- HVDC grid control and protection
- Technologies for more powerful interconnections

Thank you for your attention !