



## **London Assembly Environment Committee**

**19 May 2011**

**Richard Rigg  
Project Director**

## Consortium partners



**Dong Energy** is a leading offshore wind developer, having built around half of all offshore wind farms globally. (50%)

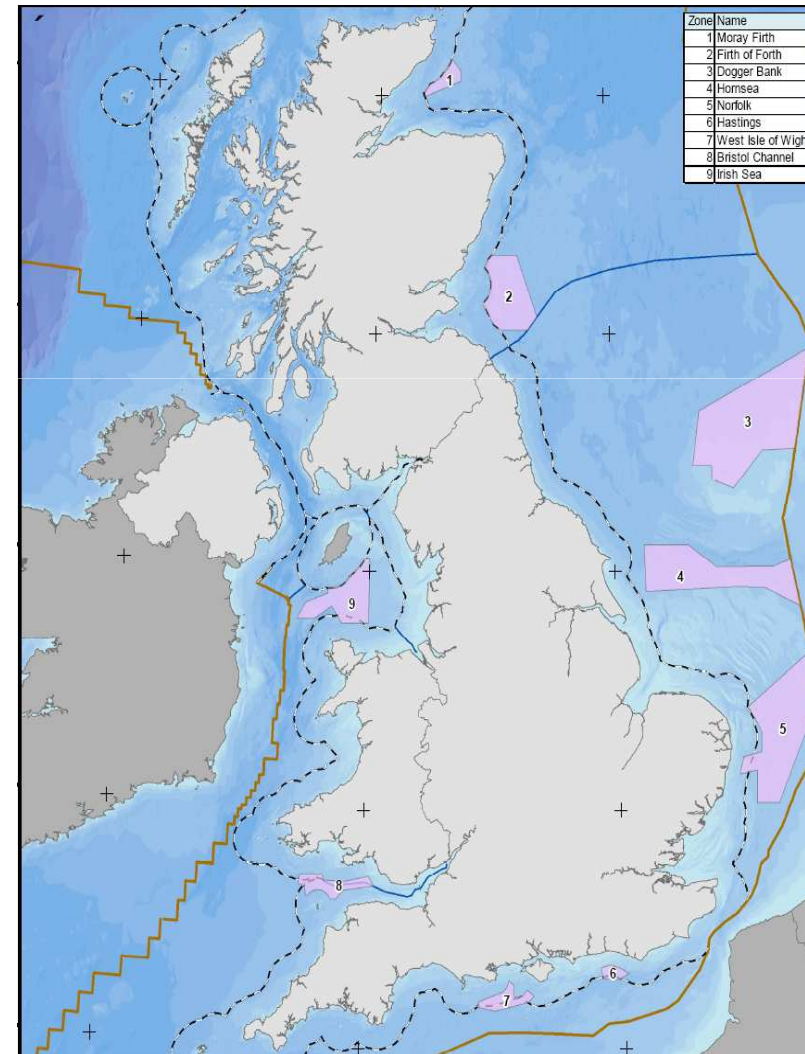
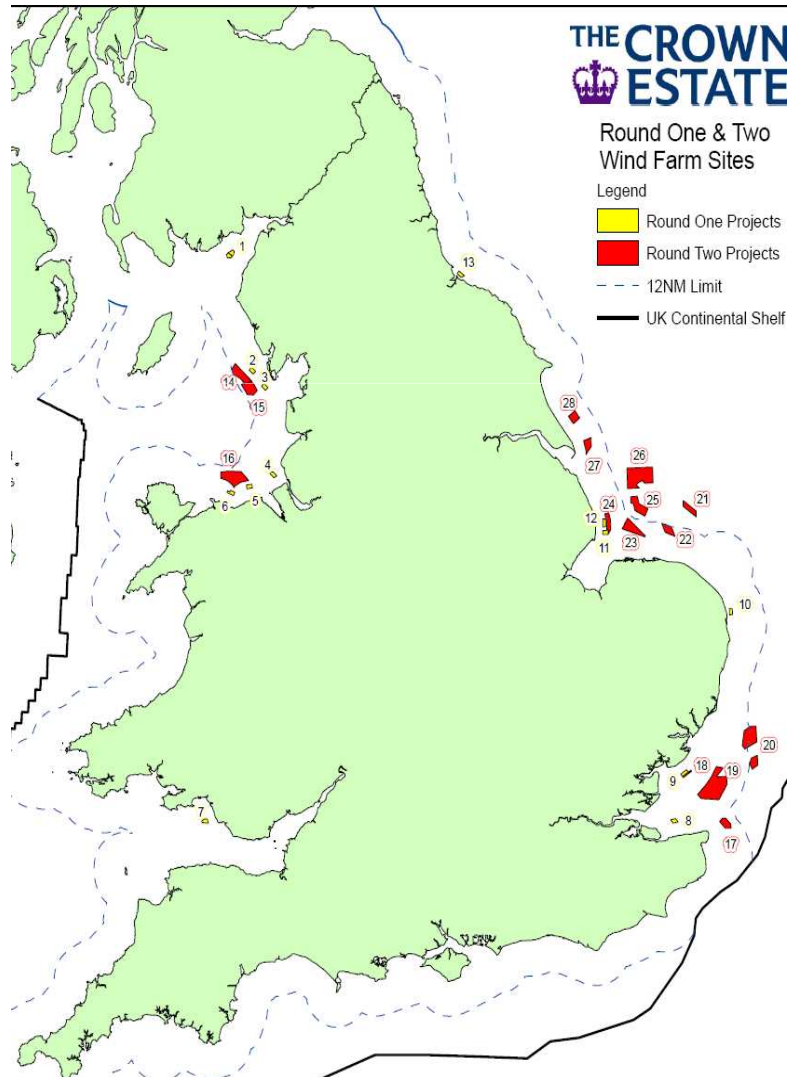


**E.ON** is one of the world's leading power and gas companies. It's renewable division (E.ON Climate and Renewables) is one of the largest renewable energy companies in the world. (30%)



The **Masdar Initiative** is Abu Dhabi's multi-faceted, multi-billion dollar investment in the development and commercialisation of innovative technologies in renewables, alternative and sustainable energies as well as sustainable design. (20%)

# Crown Estate Rounds 1, 2 and 3.



# London Array - Site selection

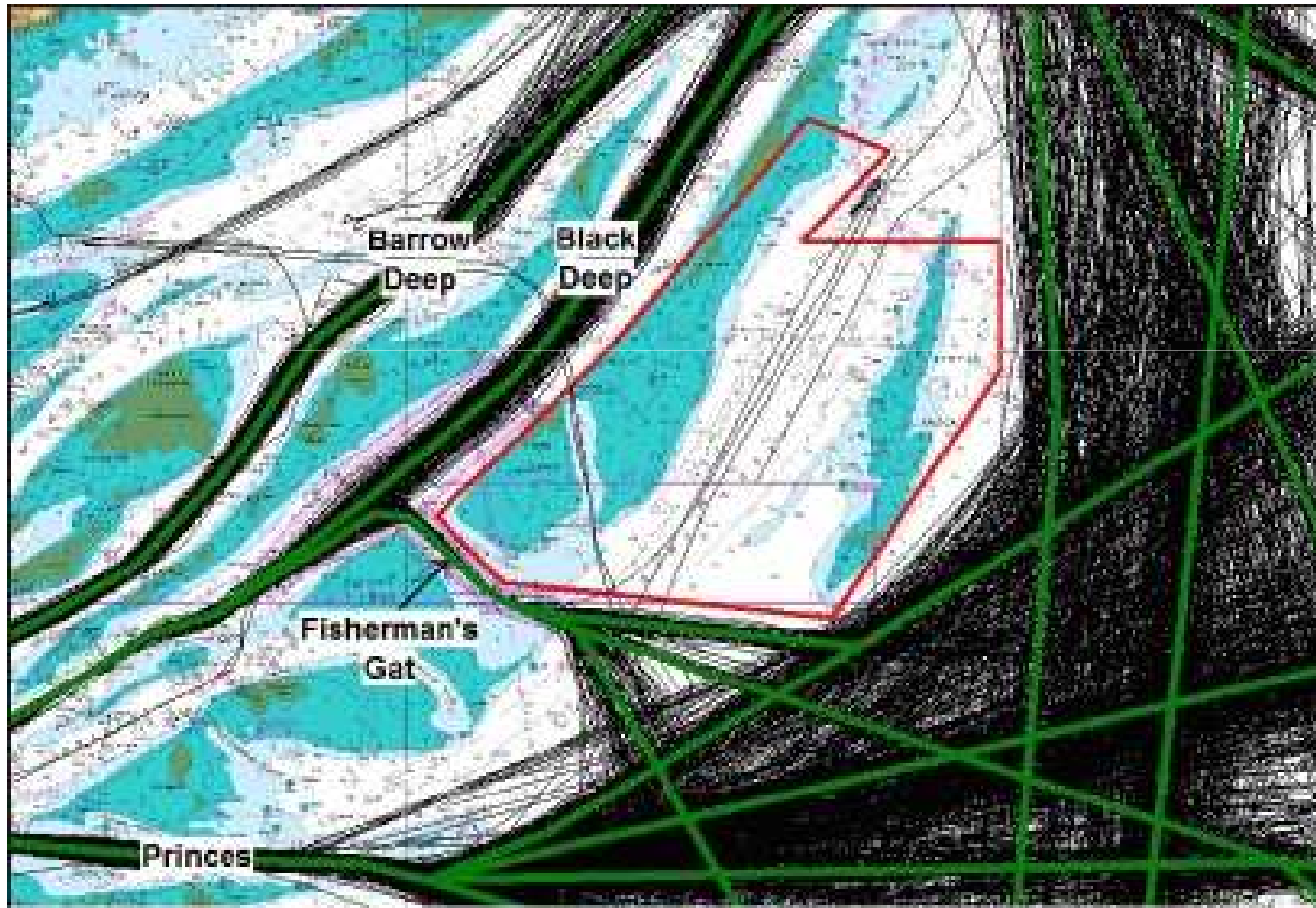


Figure 7.104 Sample of AIS Tracks Superimposed with Main Routes in the Area.

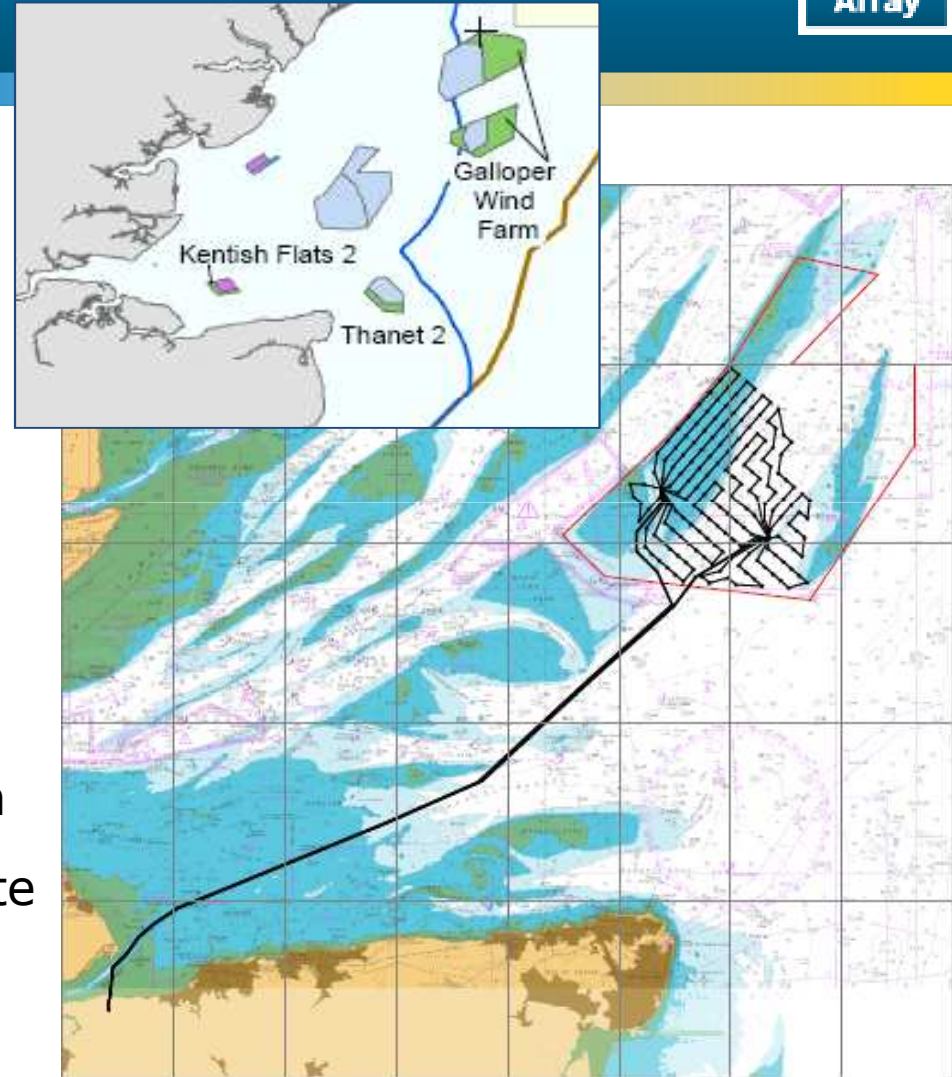
## Project overview

- Crown Estate Round 2 Project
- 1000MW consented
- 20km from Kent & Essex coasts
- Up to 245 km<sup>2</sup> on 50 year lease

### **Phase 1** – FID May 2009

- 175 Siemens 3.6MW = 630MW
- Area c.100km<sup>2</sup>
- Onshore substation – Faversham
- Construction/O&M HQ - Ramsgate
- Construction vessels – Harwich
- Cable contractor - Sheerness

**Phase 2** – 370MW - go ahead subject to successful bird studies



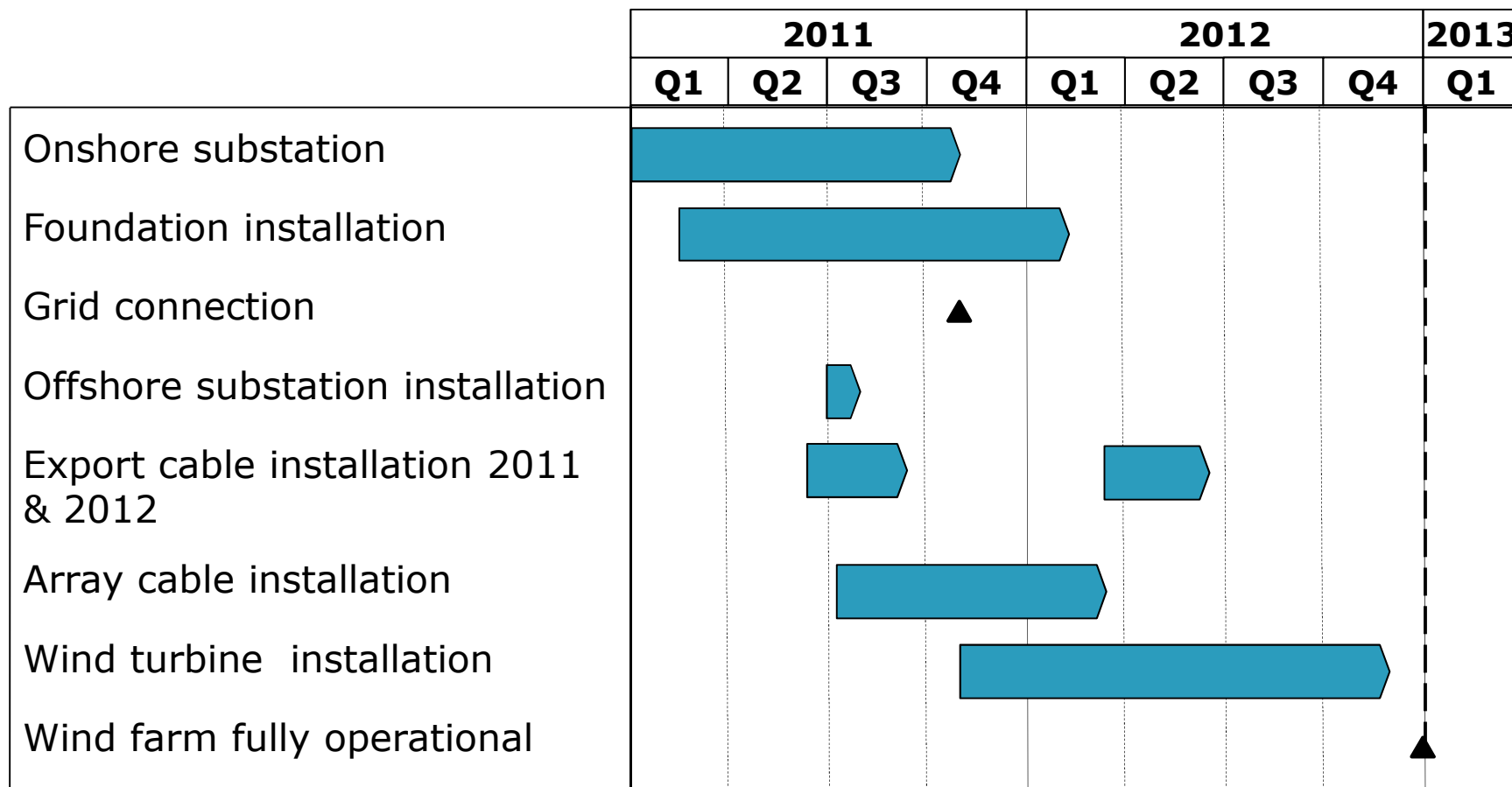


## Project gestation

- Apr 01 – First Project Heads of Terms
- Dec 03 – Crown Estate agreement for Round 2 lease
- Jun 05 – Consent applications submitted
- Jun 06 – Swale BC rejected application for substation
- Dec 06 – Offshore consents granted
- Mar 07 – Substation public inquiry - decision Aug 07
- Jul 08 – Shell sold its share to DONG (50%) and E.ON (50%)
- Oct 08 – E.ON sold 40% of its share to Masdar
- Apr 09 – Budget assistance for Round 2 projects
- May 09 – Investment decision & turbine contract
- Jul 09 – Construction of onshore substation started
- Mar 11 – Offshore construction started



# Implementation schedule for phase one



# Cleve Hill - 400kV onshore substation

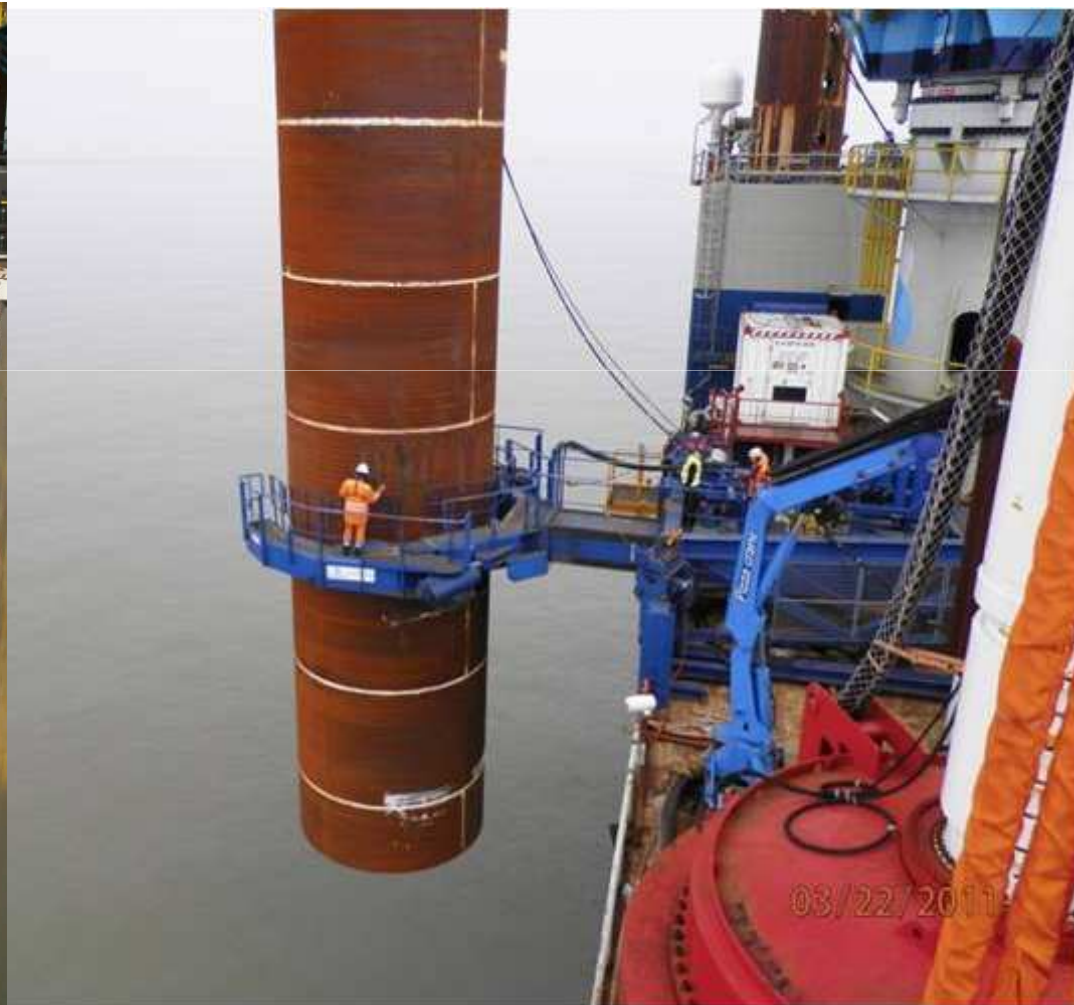




# Foundations - monopiles and transition pieces



# Installation - monopiles and transition pieces



# Installation vessels



- Adventure built in China for MPI by COSCO
- In Harwich on 9 May 11



**A2Sea SeaWorker**

## MPI Adventure



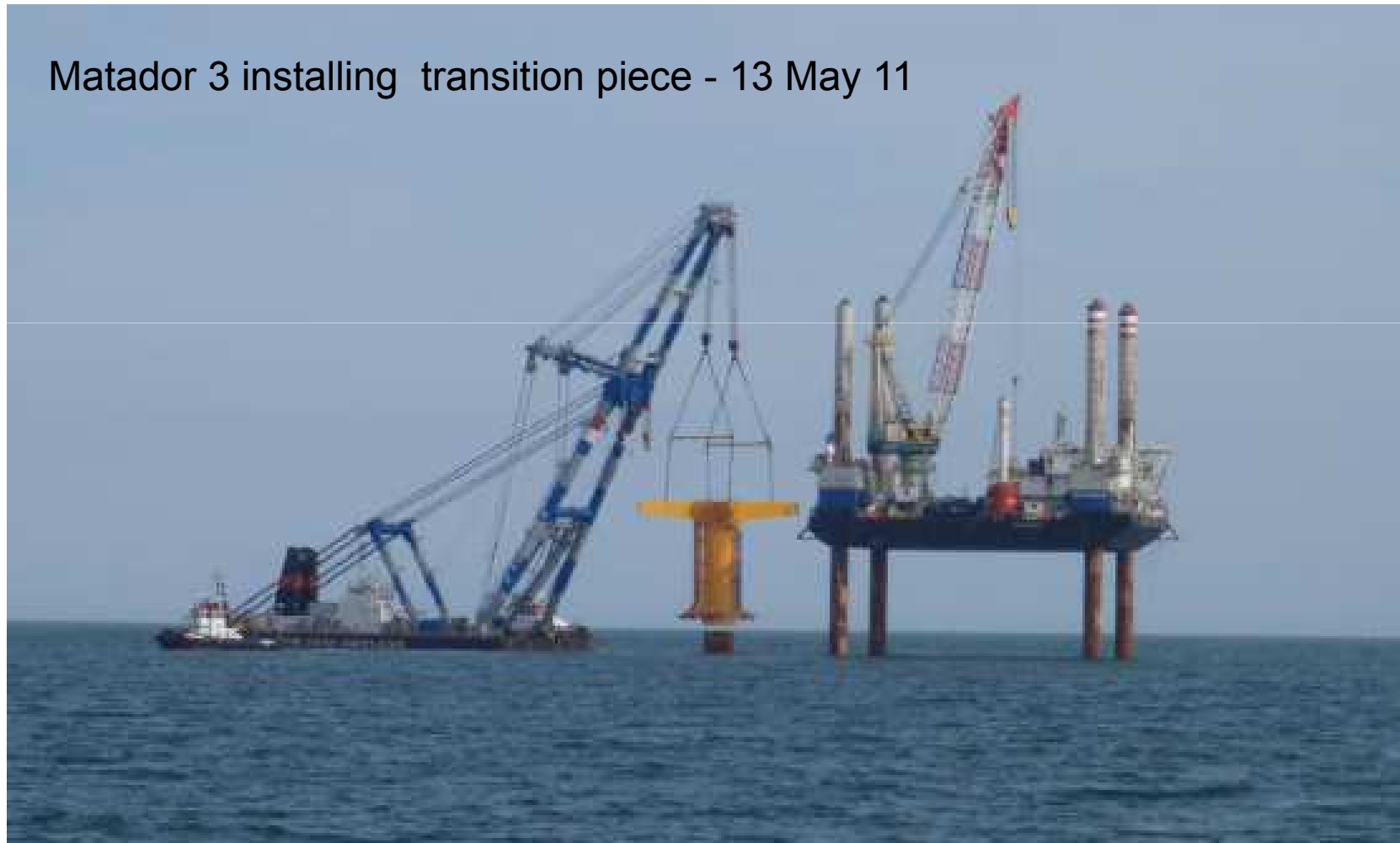
- Sea Worker on site Feb 11
- Needed for shallow locations

# Offshore substation transition pieces



# Offshore substation 1 - transition piece

Matador 3 installing transition piece - 13 May 11



# Offshore substation fabrication - Hoboken



# Cable installation

## Export Cables

- 4 x 54km 150kV cables
- 4600 tonnes each, no joints
- Deep locations and able to beach

## Array Cables

- 200km 33kV cable
- Shallow and deep water vessels



**Stemat Spirit**



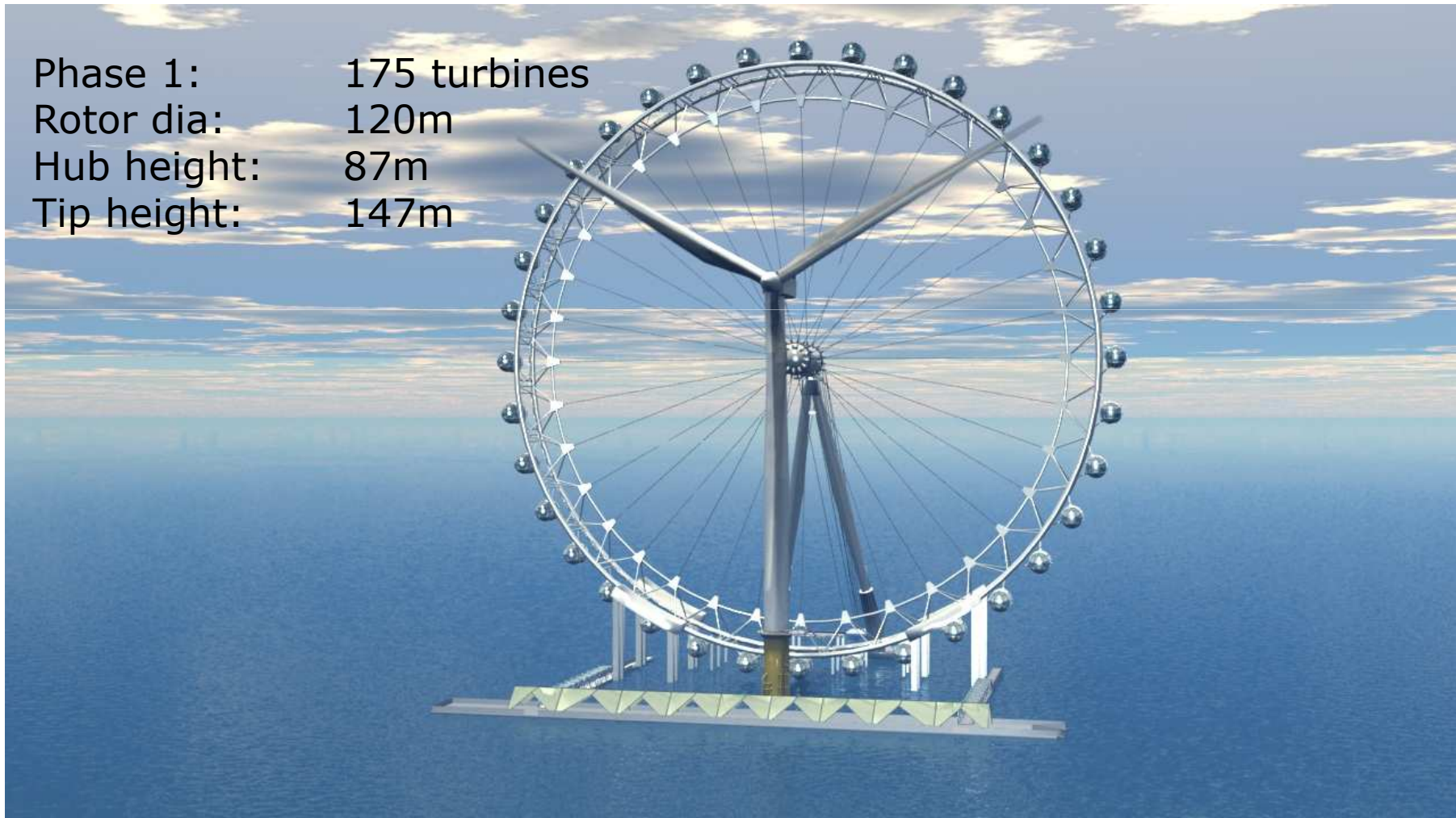
**Array Cable – shallow – Jan Steen**



**Deep – CS Sovereign**

# Siemens 3.6MW wind turbines

Phase 1: 175 turbines  
Rotor dia: 120m  
Hub height: 87m  
Tip height: 147m





# Epilogue



London Array	Phase 1	Complete Farm
Capacity	630MW	1,000 MW
Investment	€2.2bn	Not yet known
Annual energy yield	2,500 GWh	3,400 GWh
Target completion	Dec 2012	Dec 2016
Homes supplied	472,500	750,000
CO2 reduction	900k tonnes	1.4m tonnes
Distance from City Hall	Approx 100km	

Thank you

