



Climate &
Renewables

Robin Rigg Offshore Wind Farm

Matthew Swanwick – Engineering Manager

E.ON Climate & Renewables

Renewables UK Offshore Wind 2010

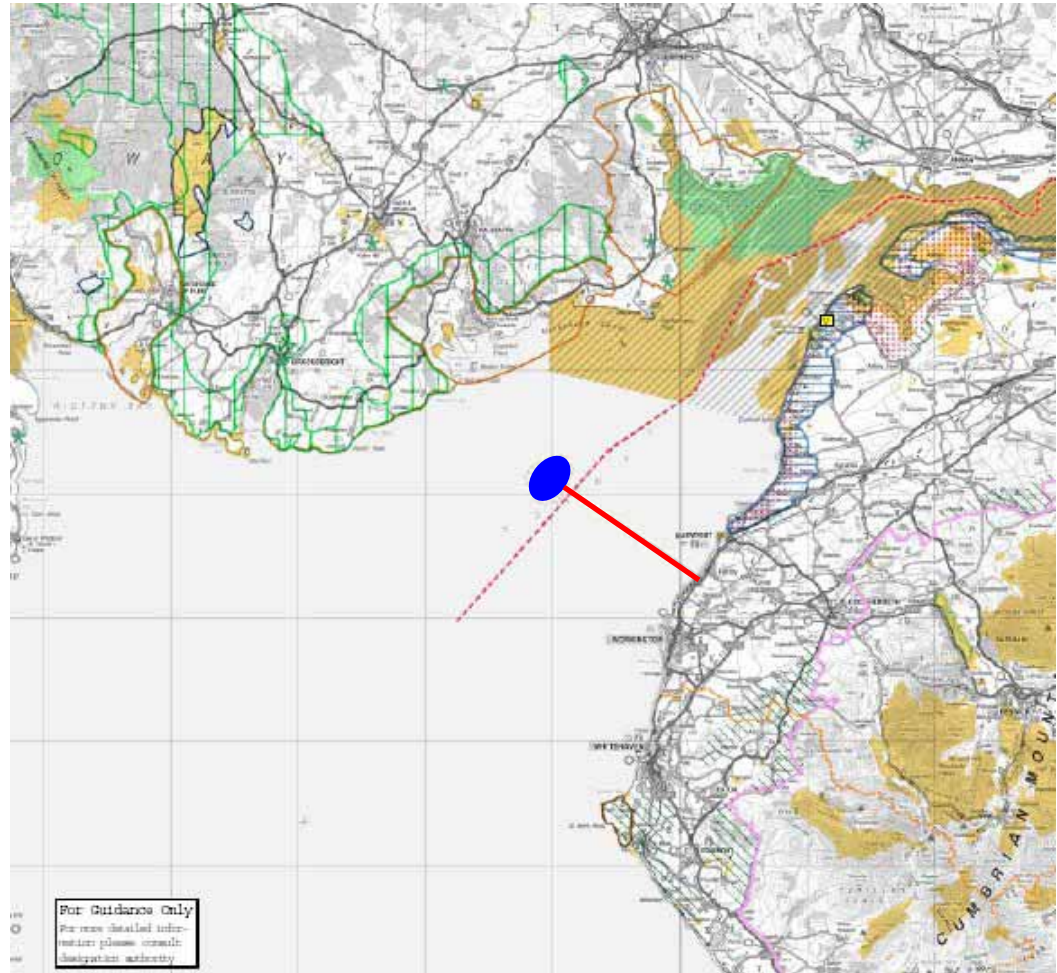
30th June 2010

Agenda

- Project Summary
 - Robin Rigg Statistics
 - History
 - Aims
- Retrospective Appraisal of Project Plan
 - Original Schedule
 - Current Status
 - Obstacles Overcome
- Summary – Obstacles Overcome

Project Summary - Robin Rigg Site Statistics

- 2 x Round 1 Wind Farms
- Location: Solway Firth - 11km off Dumfries & Galloway coast
- 13km NW of Workington Port
- Water depths 4.5-13m (9m tide!)
- Strong currents
- Mobile sea bed (sand over clay)
- Power exported to Electricity North West Limited grid system at Seaton, Cumbria



Project Summary - Robin Rigg Project Statistics

- 180MW offshore wind farm
- 60 x Vestas V90 3MW turbines
- Twin circuit offshore substation (33kV to 132kV)
- Inter array, offshore and onshore cables
- Onshore office, maintenance facility and boats
- 550GWh per annum
- Equivalent supply to 117,000 homes
- Carbon savings: 220,000 tonnes per year

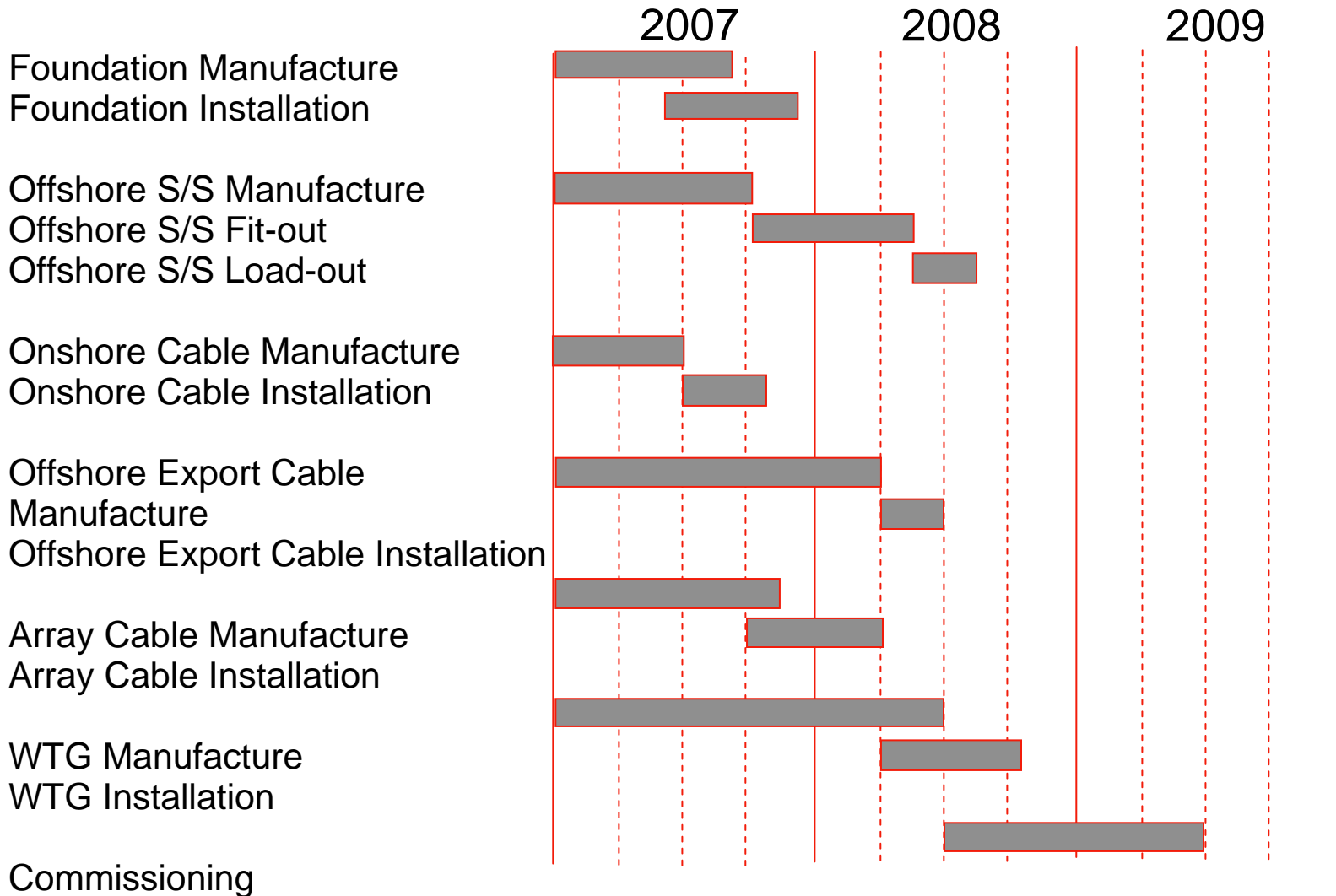


Project Summary - History

- 2 x Round 1 sites
- Developed and consented by TXU & Babcock & Brown
- E.ON purchased the consented project in 2003
- Turnkey contract negotiated in 2004/05 prior to change in market conditions
- Multi contract strategy developed in 2005
- First contracts signed in 2006



Project Summary – Aims (Programme)



Project Summary – Aims (Main Contractors & Deliverables)

WTGs: Vestas



Offshore S/S: Areva T&D



Grid Connection: ENWL



Foundations: MT Hojgaard



Onshore S/S: Areva T&D

Onshore Cable: Balfour Beatty

Array Cables: Parker Scanrope

Export Cable: Prysmian

Offshore Cable Installation: Oceanteam Power & Umbilical

Retrospective Appraisal of Plan

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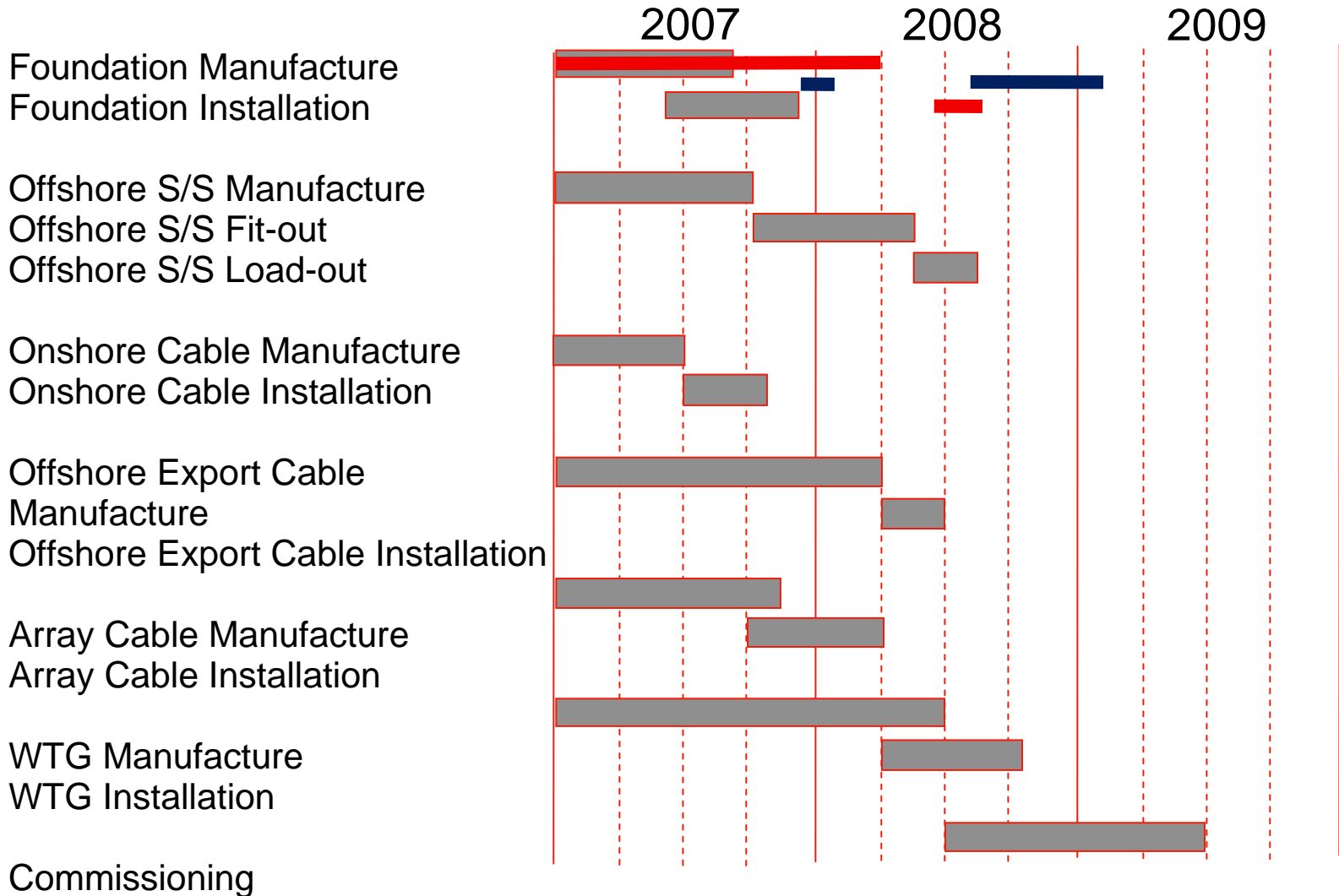
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Retrospective Appraisal of Plan - Foundations



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Retrospective Appr

Foundation Manufacture
Foundation Installation

Offshore S/S Manufacture
Offshore S/S Fit-out
Offshore S/S Load-out

Onshore Cable Manufacture
Onshore Cable Installation

Offshore Export Cable
Manufacture
Offshore Export Cable Installation

Array Cable Manufacture
Array Cable Installation

WTG Manufacture
WTG Installation

Commissioning



Summary – Obstacles Overcome

- Late foundation vessel
 - Difficult sea bed conditions
 - High tidal range with strong currents
 - Resolution
-
- Short weather windows for cable laying
 - Shallow sites
 - Union Beaver
-
- Difficult sea bed conditions
 - High tidal range with strong currents
 - Winter installation of turbines
 - Modified jacking system on the Seaworker

Questions

