



Kentish Flats Offshore Wind Farm

Copenhagen Offshore Wind 2005

Niels Møller Jensen

Project Manager

Organisation

Owner:

UK based company Kentish Flats Limited, a subsidiary of Elsam A/S

EPC Contractor:

NEG Micon UK Limited, a subsidiary of Vestas Wind Systems

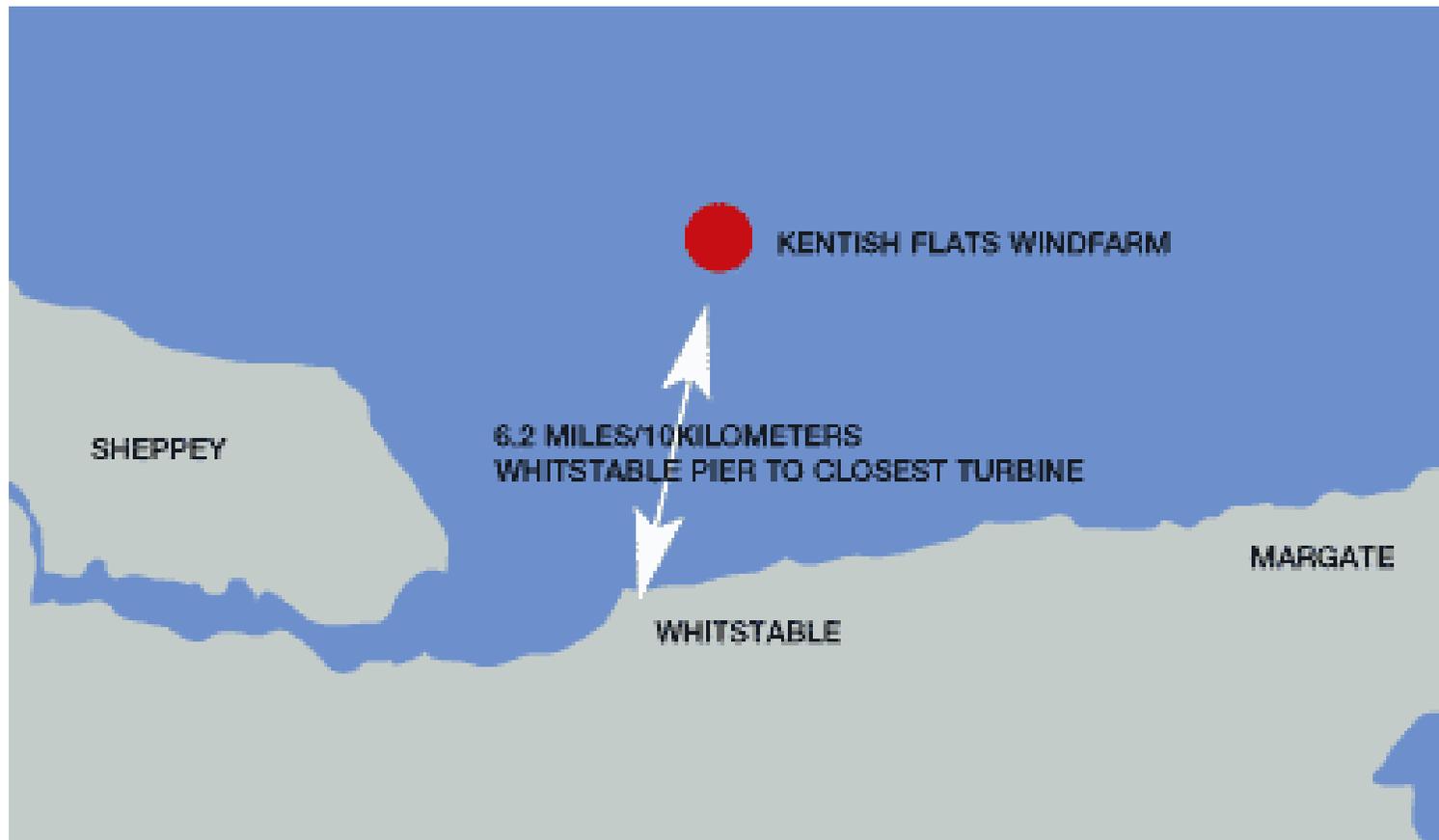
Grid Connection (upgrading):

EDF Energy Networks Limited

Owner's Engineer:

Elsam Engineering, a subsidiary of Elsam A/S

Location



Main data

- Wind turbine type (Vestas): V90/3 MW
- Expected annual production: 284,500,000 kWh
- Rotor diameter: 90 m
- Hub height: 70 m
- Weight, foundation: 247-292 tonnes
- Weight, turbine: 216 tonnes
- Water depth: 5 m
- Distance from shore: 8-10 km
- Wind farm site: 10 km²
- Project cost (GBP): 105 million

Foundations



Foundations - access



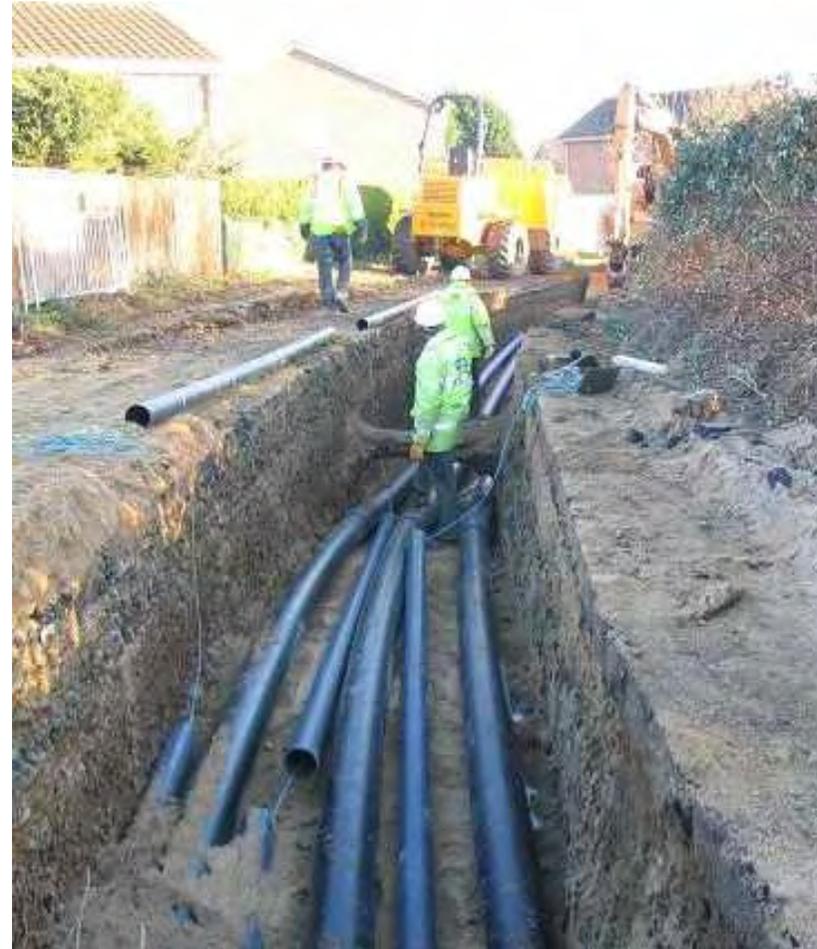
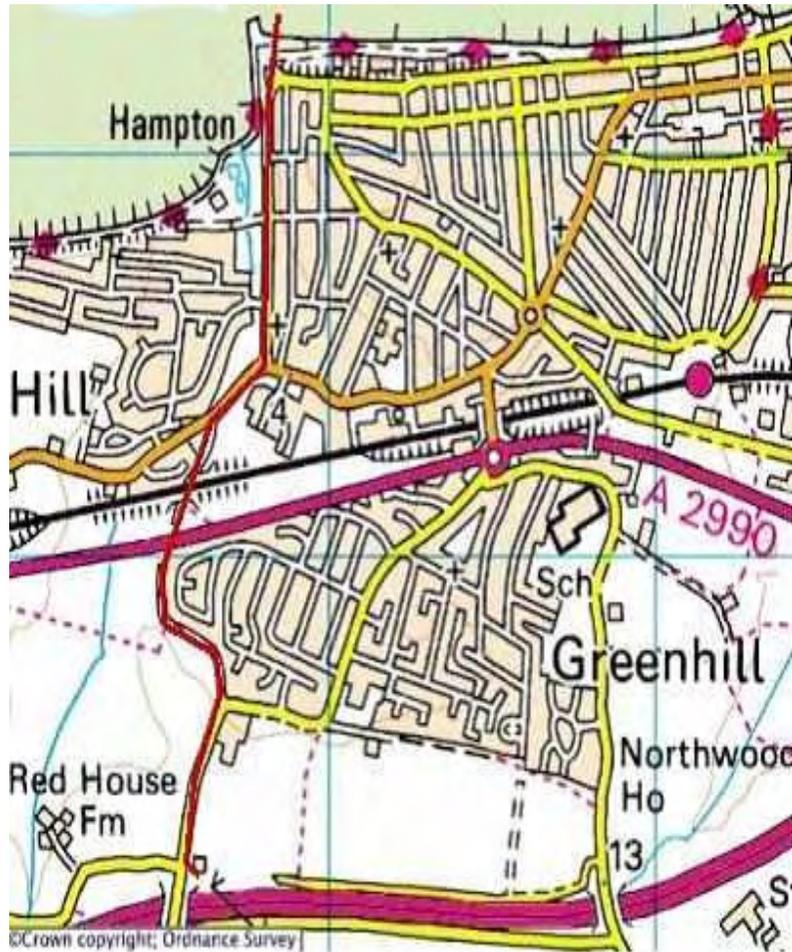
Foundations – Owner's approach

- Elsam participated in design review meetings with experts from the Horns Rev project.
- Generally a very fruitful co-operation between Owner, Contractor and Designer was achieved - all were truly interested in utilizing experience from Horns Rev.
- Focus on:
 - Design and strength of service platform and boat access.
 - Surface treatment and corrosion issues.
 - QHSE
- Subsequent supervision during manufacturing and installation.

Experience up to now:

No damage or corrosion problems have been identified.

Cable installation – on shore



Cable installation – off shore



Wind turbines – pre-assembly



Wind turbines – installation



Wind turbines – installation completed



Wind turbines – Owner's approach

- Elsam carried out a comprehensive design review of the V90 turbine.
- Focus on:
 - ✓ Performance – off shore – over 20 years.
 - ✓ Reliability and quality – all components and systems.
 - ✓ Verification and testing – preferably in the field.
 - ✓ O&M features, serviceability, HSE

Experience up to now:

No indications of significant areas of concern.

Wind turbines – Owner's approach

Elsam's experienced staff have carried out inspections in all phases of the project:

- Sub-suppliers of main components
- Manufacturing – towers, blades and nacelles
- Transport to the UK (road and sea)
- Pre-assembly in the UK
- Installation on the site
- Testing and commissioning
- Prior to Taking Over

Thank you for listening....



Visit our website: www.kentishflats.co.uk