North East England

USOWC Webinar

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Offshore wind - Drivers

- Primary driver
  - EU commitment to increase energy from renewables to 20% by 2020
  - UK committed to increasing renewables from all sources
  - Equates to around 35% of electricity production
  - The major part will come from Offshore wind required – A Massive program

UK today has just over 5GW (mostly onshore)

- Secondary Driver
  - The UK’s largest economic development opportunity?
UK Offshore wind Programme - Timing of Round Three projects

- The Crown Estate

- 2008 Round Three programme announced and ITN
- 2009 Bids for zones submitted and considered
  - (40 Zone bids from 18 consortia)
- 2009 Completion of Strategic Environmental Assessment
- 2009 Development of zones with zone developers
- 2013 Site consents awarded
- 2014 Site construction commences
- 2018 First sites complete

- 2020 25GW delivery target
Scale & Scope

- Machines weighing over 1000t each
  - Tip height to 175m
  - Rotor diameter 150m

- Foundations alone major structures

  - Multiple Designs;
    - Monopiles
    - Jackets
    - Tripods
    - Tri-piles
    - Floaters

(www.weserwind.de)
Land and portside facilities - Vital

(Scout Moor Wind farm – Nordex N80 - 39m blades)
Scale & Scope – 25GW

- With the largest machines today around 5MW
  - 25 GW is 5000 turbines
  - 5,000 sets of jackets or piles

- Scale
  - 300-400t of rotating machinery
  - 120m in the air
  - In 50-60m of water
  - Up to 300km from the shore

- Quite a challenge
  - But a programme like this has been delivered in Oil & Gas!
Offshore Plant Major Elements

1. Blades
2. Nacelles
3. Towers & Foundations
4. Umbilical Cables
5. On/Offshore Sub-Stations
6. Support Services
Big Programme – Big opportunities

- At current cost estimates overall capital cost of the programme is;

**Around $160bn**

- Major opportunities for
  - Turbine Manufacturers
  - Turbine supply chain companies
  - Foundations companies
  - Installation vessels and technologies
  - Operation & Maintenance activities
The North East of England has;

- The sites necessary
- An ideal East coast location
- Significant investment in technology centre - NaREC
- Support for Inward Investment
- The desire to be the lead UK region for offshore wind
- Onshore wind employs around 100,000 people today in mainland Europe

- Offshore may be just as big.
Employment Forecast

Source: EWEA wind at work 2009
Key Strategies

- Identify, Develop and deliver Inward investment opportunities from Original Equipment Manufacturers – specifically turbine OEMs

- Build a supply chain capability in the region to create significant order book for regional companies – both existing and new

- Work with landowners to identify and bring forward riverside sites with manufacturing potential

- Manage a wide range of stakeholders to maximise manufacturing opportunities for the North East

- Invest in Innovation assets to promote the North East as an R&D Centre of excellence - NaREC
New and Renewable Energy Centre - NaREC

- Established 2003 by Regional Development Agency One North East
- Received $45m strategic funding to date from Government
- Currently employs 110 people
- The lead centre in the UK for offshore wind technology development
- Aiming for additional strategic investment from the RDA & Central Government
Case Study 1 – JDR Cable Systems

- Existing manufacturer of umbilical (multi-service) cables for oil & Gas
- Recognised developing market for offshore wind
- Established new manufacturing facility in North East England
- Port-side location crucial
- c$30 million investment – 100 high quality jobs
- Already investing in 2nd phase of facility

http://www.jdrcables.com
Case Study 2 - TAG Energy Solutions

- Vastly experienced team in Oil & Gas
- Former shipyard site in North East England
- Recognised opportunities in offshore wind and renewables
- Investment from equity and debt partners
- Production of towers and monopiles
- C$30 million investment in state of art Rolling facilities

- Factory under construction now

http://www.teesag.com/renewables.html
Results to date

- Through strategic work the North East is leading the way in the manufacturing supply chains for offshore wind.

- Regional companies have already secured around $450 million of work.