

North East England

USOWC Webinar

15th December 2010

Ray Thompson
Business Manager – Energy & Engineering





Offshore wind - Drivers

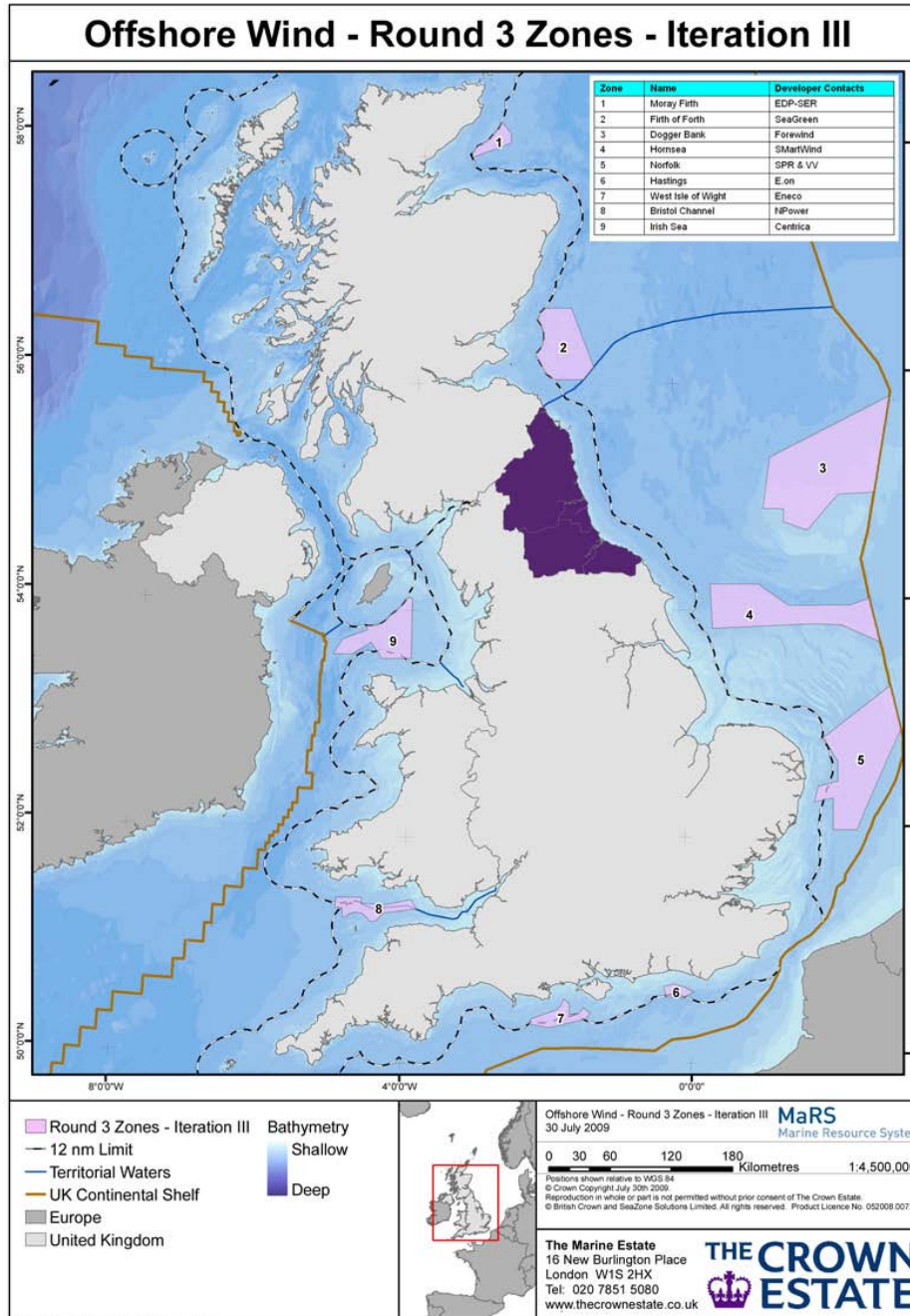


- Primary driver
 - EU commitment to increase energy from renewables to 20% by 2020
 - UK committed to increasing renewables from all sources
 - Equates to around 35% of electricity production
 - The major part will come from Offshore wind required – A Massive program

UK today has just over 5GW (mostly onshore)

- Secondary Driver
 - **The UK's largest economic development opportunity?**

Offshore Wind - Round 3 Zones - Iteration III



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)





http://www.shi.samsung.co.kr/Kor/img/product/Wind_Turbine_Division_2010.pdf

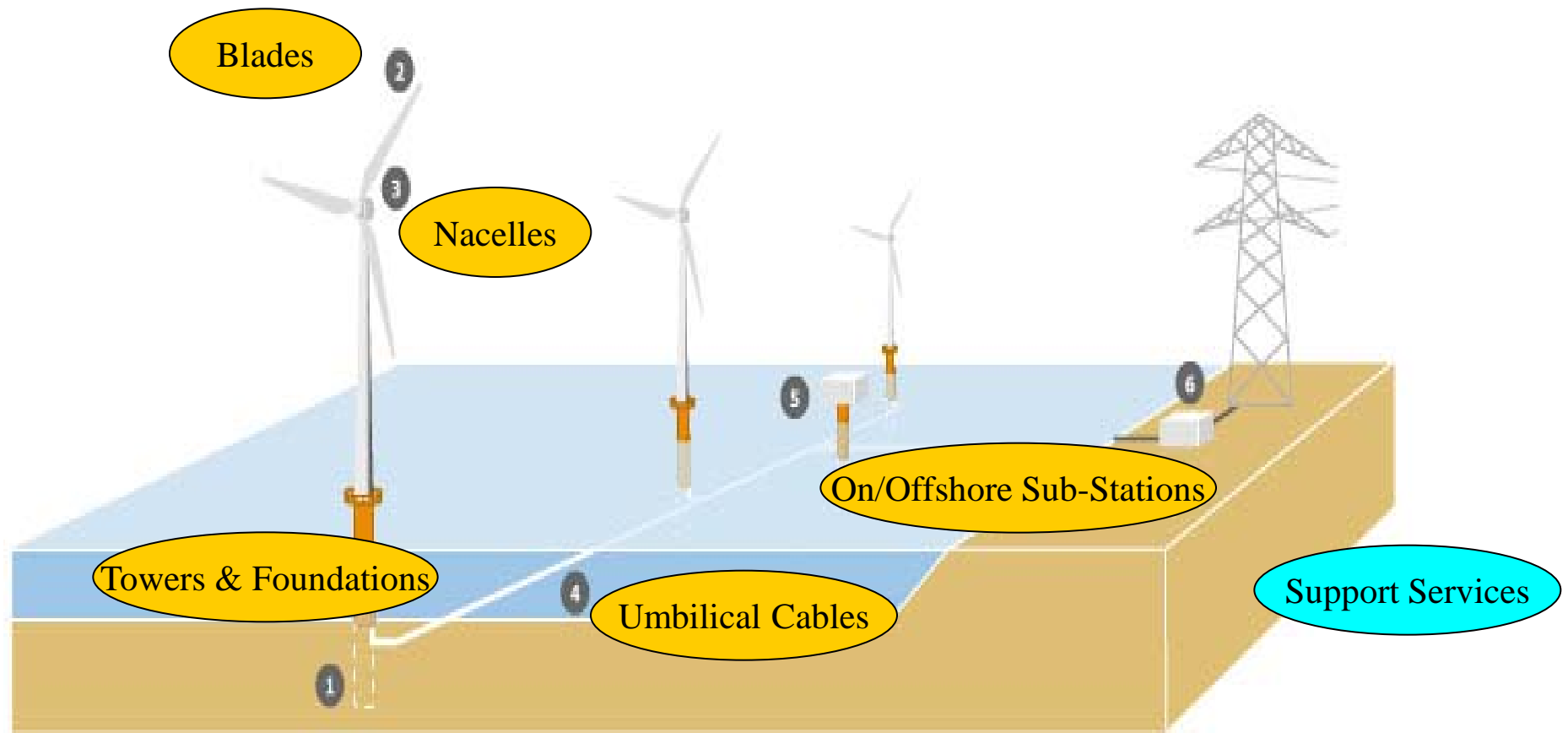


Scale & Scope – 25GW

- 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



Big Programme – Big opportunities

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

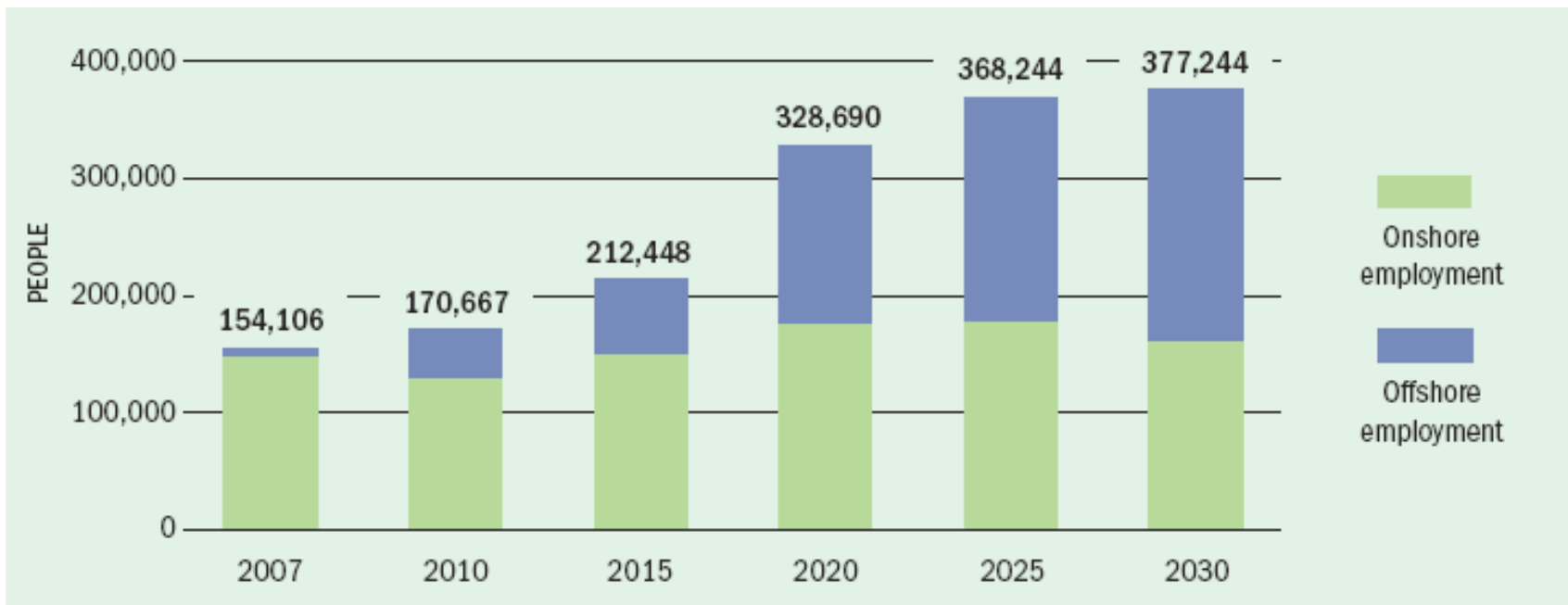
Around \$160bn

- 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



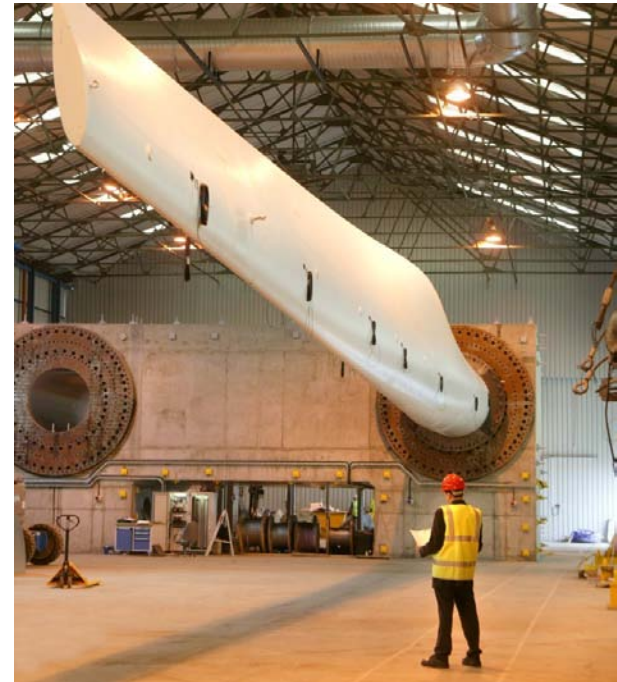
Source: EWEA wind at work 2009

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



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>



Ravenspurn Platform



Leman



Indefatigable

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