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# Whitby & Scarborough The Role in the Wind Industry

Andrew Fox – Yorkshire Forward  
Environmental Technology



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## Two Great Projects

- What does it mean to the Region
  - And to my business?
- Factors to consider
  - The Supply Chains
    - Turbines, Developers, O&M
  - The Infrastructure
    - Whitby & Scarborough





## The Cluster, the Industry and the Skills

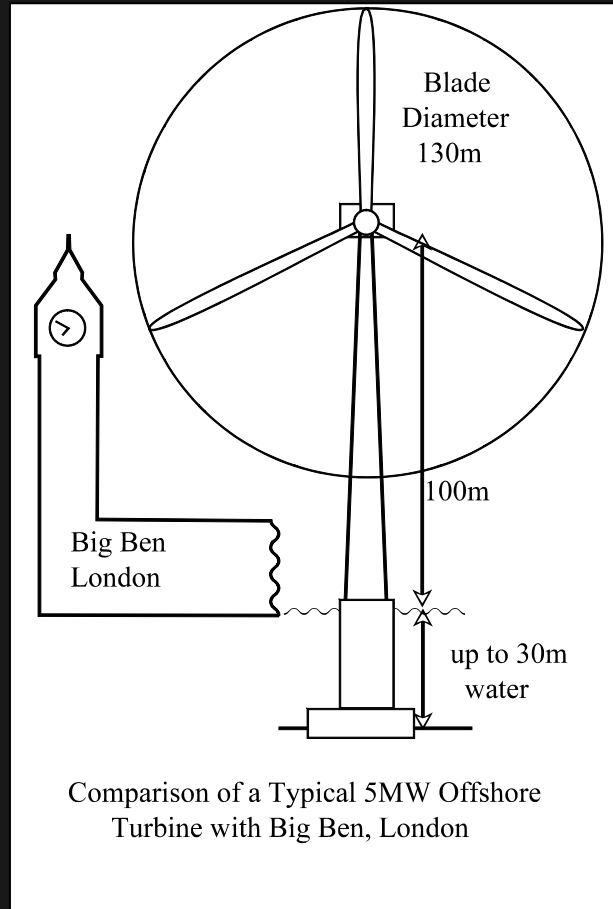
- The Region has geography
- Major strength in
  - Engineering
  - Marine
- What is the role for
  - The Humber
  - Whitby and Scarborough?





## The need to understand Scale

- The size of the turbines is difficult to imagine
- Up to 5 turbines per day
- Huge land bank to manufacture turbines, blades, towers etc
- Much of the value is not in these sticker items!





# The Cluster Opportunity

- A wind Cluster needs...
  - Sheltered Harbour / port
  - Development land adjacent
  - Proximity to Markets
  - Engineering / manufacturing
  - Marine services and skills
  - Significant population





## The Humber Provides

- The Humber is the UK's busiest natural harbour
- Humber can take the vessel movements
  - 300MW Humber Gateway needs 900 vessel moves: Dogger 9000MW
- Grimsby already O&M base





# What does it mean to me – the Supply Chain

- Three distinctive supply chains exist in wind
  - Suppliers to turbines, blades, towers etc
  - To Developers
  - For O&M





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## Turbine Supply Chain – Major Regional companies

- Corus – Steel supply Scunthorpe Steel 34km
- Outokumpu – Stainless steel
- Sheffield Forgemasters – 350T castings 100T forgings
- Davy Markham – Major machining fabrication assembly
- Bradken – Castings in Iron and steel
- David Brown –  
Gears and Gearboxes





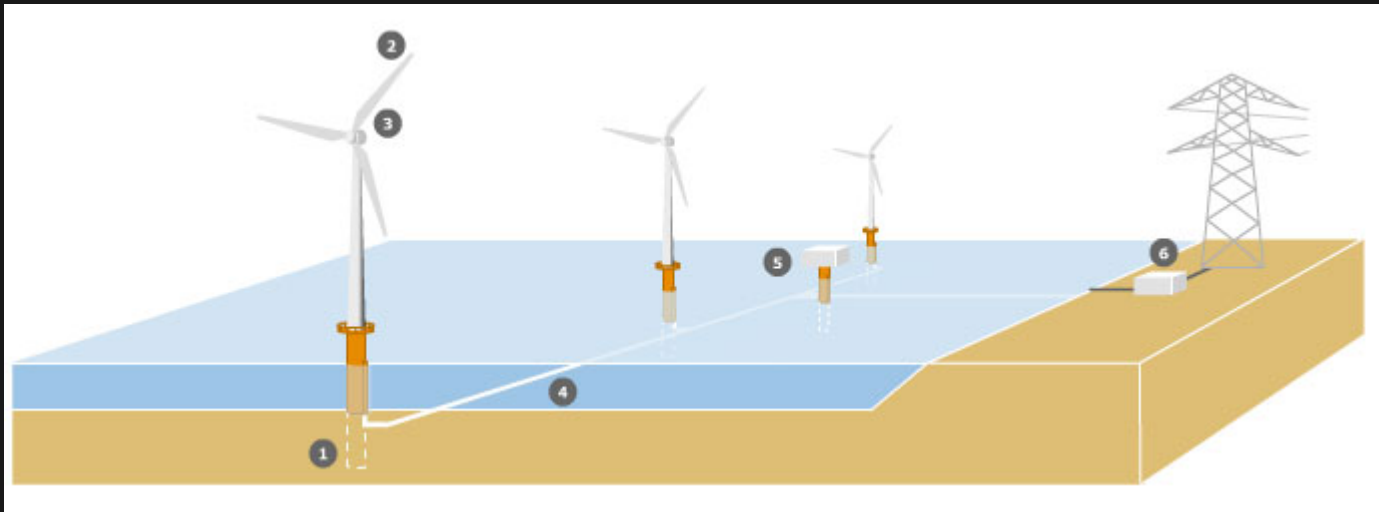
## Turbine Supply – many headings – difficult targets



- Steels, Castings, Forgings
- Composites, Hydraulics
- Bearings, Seals, Gears
- Panel assembly, electronic modules
- Generally a global supply chain – local availability helpful for size, and for marine aspects
- Regional Support through AEM Yorkshire



## The Developer Supply Chain has many parts



- Turbines are only a small part – 33% of the value
- Much more value in the Consent phase, the engineering, the foundations, the cables, trenches, Substations etc



## Developer Supply Chain – through contractors



- Environmental Impact surveys
- Engineering & Project Management consultancy
- Electrical, Cabling, Grid connection
- Foundations & Fabrication
- Marine services, vessel operations,
- Legal & Financial, specialist recruitment etc

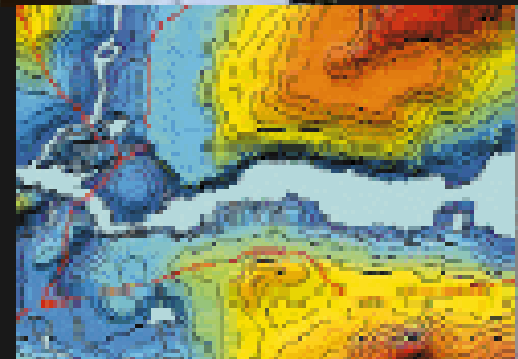


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# Environmental Impact Surveys

- Regional Examples include...
- Institute of Estuarine & Coastal Studies
  - supplied services to offshore wind for full EIA and specialist niches
- Arcus Renewable Energy Consulting
- Thomson Ecology ....
  
- But need for surveys for bird, fish, epibenthic, geo-physical, noise etc
  - All of which need vessels and ports
- Drawing together in assessment reports and analysis





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# Engineering Consultancy & Design

- Regional Examples Include
- Grontmij
  - Major consultant in offshore wind industry
- Range of consultancies in York
- Qualter Hall
  - Specialise in very large moving structures
- Northern Sea Winches
  - Design supply heavy marine lifting equipment
- Establishing regional offices – we need to think through the Scarborough offer





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# Wind Farm Cabling – trenching, laying, connection

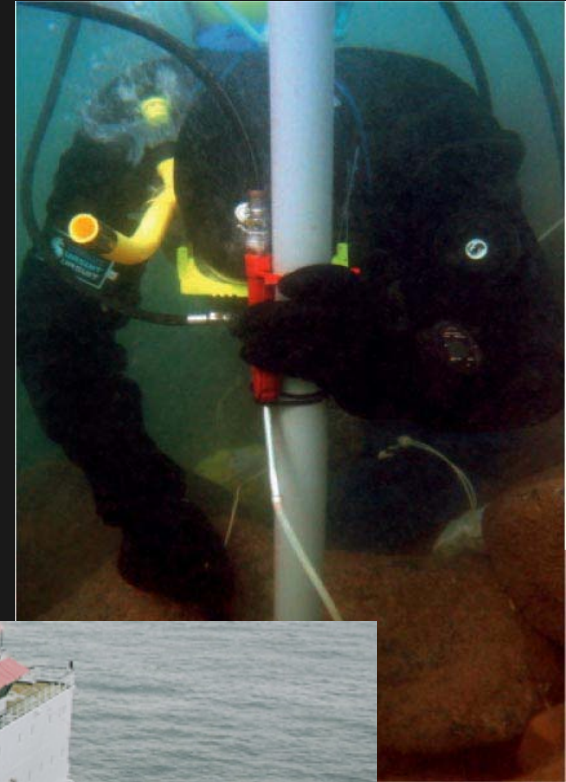
- Major task for offshore with
  - Cable manufacture
  - Joints and connectors
  - J tube pulling
  - Substations – emergency Power
  - Scour protection
- Onshore and near shore
  - Utilities companies
  - Flowtek HDD UK Ltd
    - Directional Drilling and Open cut





## Vessels, Anchor handling, Diving, Scour

- Vessels for
  - Foundation & Turbine Installation
  - Cable Laying
  - Crew Transfer
  - Support for
- Anchor Handling
- Diving and diving operations
- Laying Scour protection
- Survey & Guard vessels
- Cable connections
- Commissioning





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## Operation and Maintenance

- Operations at site
  - Technicians, vessels,
  - Oil Monitoring, NDT,
- Refurbishment on Land
  - Spares stocks and logistics
  - Fault diagnosis
  - Welding, servicing and repair
- Critical question
  - What makes Scarborough
  - What makes Whitby
- Have the critical mass, the benefits to be an O&M Sector base?





# The Infrastructure – Ports

- Whitby Docks -
  - 2m OCD, 0.5ha land
  - Closest to Dogger
  - On shore travel an issue
- Scarborough Docks
  - Restricted access but
- What is best for each location?





## Use for the Ports

- Industry's concerns...
  - Availability of skills – land
  - Access for vessels
  - Should the ports offer many services on a day hire basis
  - Or look to tie up resources on long term contracts
- Let the Market Decide!

