

Synergies between Offshore Oil & Gas Activities and Front Running Offshore Wind

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Scope of Presentation

- Introduction to Centrica
- Synergies from an Owner's perspective
 - HSE
 - Activity in an Offshore Environment
 - People
 - Contracting



Overview of Centrica

- Centrica's vision is to be a leading supplier of energy and related services in our chosen markets.

- Businesses in North America, UK and Europe



- FTSE 100 company – market capitalisation circa £9bn

- Better known to customers as British Gas in the UK



- In the UK we have 12 million gas and 6 million electricity customers
- Centrica Energy supplies the energy for British Gas on a wholesale basis via a number of ways
 - Equity production, contracts, traded, storage

Our renewable energy projects

Onshore (Consented)

- Glens of Foudland 26MW

Offshore

- Round 1 (Consented)
 - Barrow Offshore Wind 90MW
(50% JV with DONG)
 - Lynn 90MW
 - Inner Dowsing 90MW
- Round 2 (Consents being sought)
 - Lincs 250MW
 - Docking Shoal 500MW
 - Race Bank 500MW

Total 1,546MW





HSE Synergies

- Training Standards
- Emergency Response
- Rescue and Recovery
- Diving Operations
- Electrical Work
- Lifting Operations
- Vessel Operations and Management
- Workplace Risks



Activity

- Safe Access & Egress
- Access system as used by Shell on their SNS Brigantine platform.
- Access via ladders for the Barrow Project.



Activity - Conditions

- Marine Environment
- The Marine Environment can be hostile and difficult to predict.





Engineering

- General
- Design of piles, including blow count, driveability, and fatigue life all as per codes and standards developed in the O&G industry.
- Corrosion protection systems including painting and cathodic protection systems developed from O&G industry standards

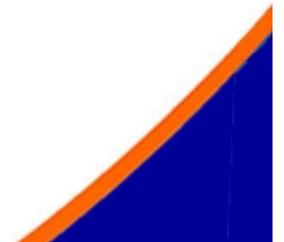


Installation Capabilities

- Vessels



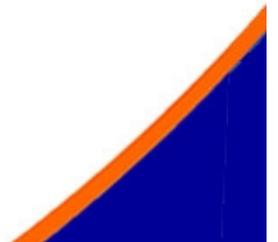
Cable and Pipe Burial Experience





Design, Fabrication and Construction Activities

- Utilisation of the same fabrication yards that have traditionally been used for the O&G industry, SIF, Smulders, SLP, NIGG, Lewis Offshore, etc.
- Construction standards are taken directly from the O&G industry.
- Principles of 'Third Party Approval' is the same as the O&G industry with the same TPAs being used, namely Lloyds, DNV, Bureau Veritas, etc.





People

- We have built our team from January 2004
- Over 50% have previous oil and gas industry experience
- At Centrica, we have worked closely with, and been supported by, our colleagues based at our Morecambe Gas Assets (in the East Irish Sea)
 - Specialists in Structural design, corrosion protection and electrical systems have been utilised.
 - Office space and IS support has been provided to the BOW site project team at Heysham





Contracting Synergies

- Form of Contracts
 - CRINE
 - FIDIC
 - Bespoke
- Contracting Strategies
 - Multi Contract
 - EPC





Conclusions

- From Centrica's perspective, our extensive experience in offshore gas operations meant that a progression into developing offshore wind projects has an extremely good fit.
 - There are many synergies and lessons to be learned from Offshore Oil and Gas and all of us must strive to ensure that these are utilised. Its good business sense, and will assist in developing the offshore wind industry which is still in its infancy.
 - One Final Thought: Are there aspects of our Offshore Renewables Activity that can provide useful learning and experience to the Oil and Gas Industry?
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Any Questions?

