Supply chain collaboration in offshore wind

Chris Willow, 31 May 2012

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Market analysis & business development

- **Supply chain development**
- **Economic impact assessment**
- **Support to industrialisation**

Technical innovation & engineering analysis

- **Support to investment in technology**
- **R&D programme management**
- **Design and engineering services**

Project implementation

- **FIT project development (UK only)**
- **SCADA & condition monitoring**
- **O&M technical support**

Technical education

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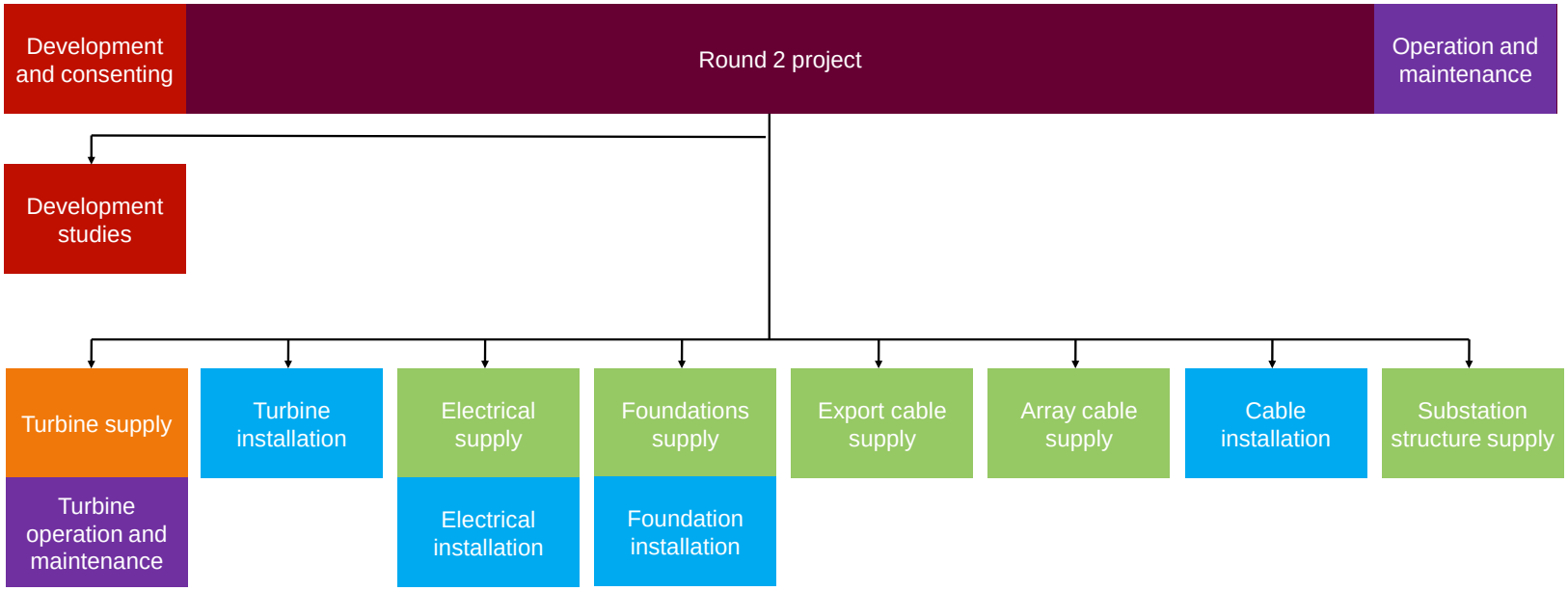
Supply chain collaboration in offshore wind

- Supply chain overview: headline issues and cost reduction
- Contracting overview and trends
- Horizontal collaboration
- Vertical collaboration
- Supply chain collaboration

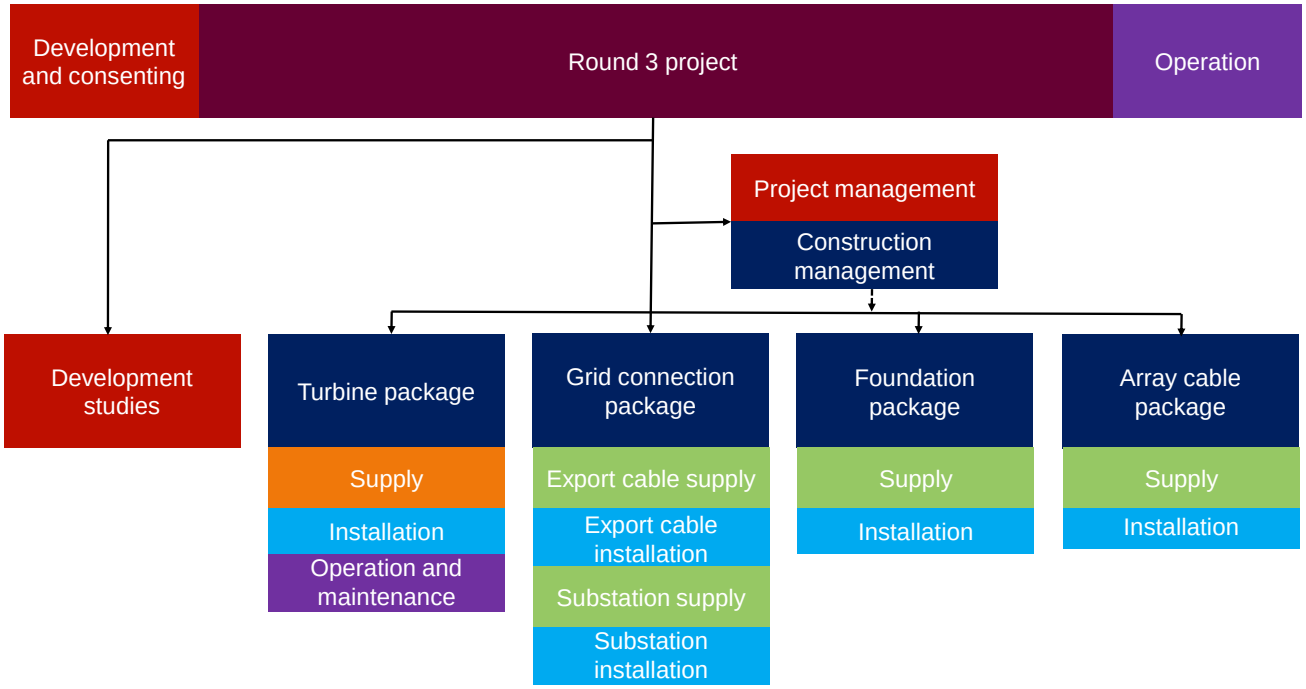
Supply chain challenges create opportunities for UK suppliers

- Cost reduction - main areas are:
  - For turbines - larger turbines with larger rotors, increased reliability
  - For balance of plant – mass produced foundations (jackets and concrete)
  - For installation – specialist vessels for foundation installation, array cable pull-ins, wider operating windows
  - For operation, maintenance and service – access systems, condition monitoring
- Supply constraints
  - Larger turbines with larger rotors
  - High voltage cables
  - Optimal foundation installation vessels

Offshore wind contracting in 2012



Offshore wind contracting in 2015?



Horizontal collaboration

- Little collaboration between developers outside JVs, except Carbon Trust Offshore Wind Accelerator and collaborative forums such as RenewableUK and DECC's Offshore Wind Developers Forum and Task Force.
- JVs at project level mostly driven by need to raise finance and spread investment risk. Often JVs isolated from the rest of developers' portfolios.
- Developers recognise value of better information sharing but it is not happening on the ground. There is a competitive culture in utilities.
- Cost reductions have been identified through better collaboration.

Horizontal collaboration

- Better examples among suppliers
- TAG
- GBF and Gravitas consortia
- A2SEA/Teekay
- Global Wind Alliance

Vertical collaboration

- Developers' supply chain strategy still evolving but early examples

- SSE – MOU with Atkins, BiFab, Siemens (wind and T&D), Subsea 7

- DONG – through investments in A2SEA, CT Offshore and frameworks with Siemens and Bladt
- RWE – REpower turbines, inhouse offshore logistics company

- Also in supply chain:
- ABB and Canyon Offshore for export cable trenching
- P&O and Offshore Marine Management

Alliancing

- Identified as key area by Cost Reduction Task Force
- Advantages: cost reduction health & safety, securing capacity, accelerating project timetable
- A range of options:
  - Traditional
  - Project partnering
  - Supply chain partnering
  - Client partnering
  - Full alliancing

Alliancing

Traditional	Project partnering	Supply chain partnering	Client partnering	Full alliancing
Competition Project based Risk transfer	Cooperation Project based Rick mitigation	Collaboration Long term Rick mitigation	Collaboration Long term Rick sharing	Coalescence Long term Rick embracing
Each side has clearly established processes Little or not trust Disputes often resolved adversarially	Each side know and commits to the goals of the project and to each other's goals Requires a degree of trust Disputes typically resolved in some degree of compromise and harmony	Integrated supply chain team focused on meeting programme goals Usually design and build Often create separate legal entity to contract with client Team has one set of goals for a successful programme with some shared risk and reward Senior level sponsors to remove barriers and support the project	One integrated team consisting of both client and contractor's personnel Early involvement in design life cycle Requires a high degree of trust Team has one set of goals for a successful programme with shared risk and reward	Integrated into whole project life cycle Total alignment around driving mutual goal and sharing gains and liabilities for failure Both sides share goals and cost Requires extremely high trust

Issues

- **Developer and tier 1 perspectives**
- **Purchasing departments ???**