Jobs, GVA and UK content in offshore wind O&M

Alun Roberts, BVG Associates

About BVG Associates

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

Publications

Agenda

- Why is measuring the economic impact of an offshore wind farm important?
- About Robin Rigg and UK content in construction.
- Measuring economic impact of O&M – issues and methodology.
- Findings.
- Engaging with stakeholders and issues for the future.

Why offshore wind? Green, black or blue?

- Green?
  To help the UK meet its legal and moral obligations to address climate change..
- Black?
  To keep the lights on through security and diversity of supply.
- Blue (collar)?
  To create new skilled jobs by stimulating economic development.

Economic impact is high on the agenda

- "*The UK to be the centre for offshore wind technology and deployment, with a competitive supply chain in the UK, providing over 50% of the content of offshore wind farm projects".*
  Offshore Wind Developers Forum, February 2012

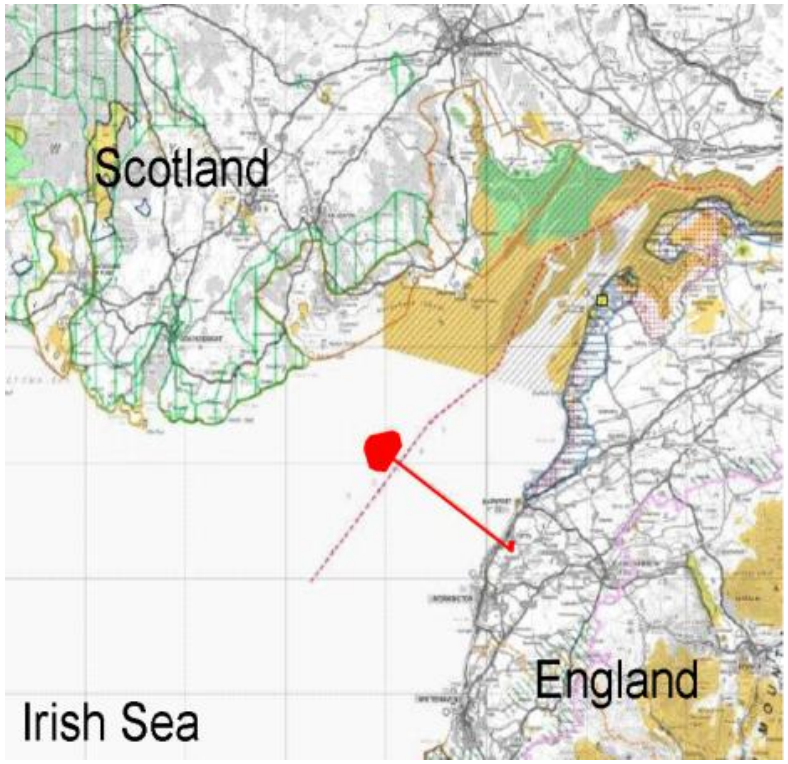
- *"Whenever, we have meetings with clients, UK content is always high on the agenda".*
  Business development manager, wind turbine manufacturer

- At least three Round 3 developers will require contractors to report UK content.

- But ... although some analyses of UK content in offshore wind capital expenditure, no assessment of operational expenditure publicly available - generally assumed to be high, eg Vestas commissioned study suggested 95 per cent.

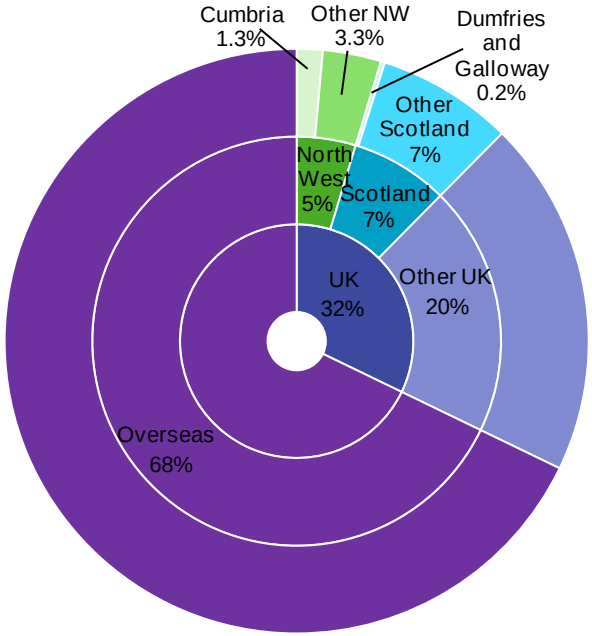
About Robin Rigg O&M

- Wind farm in Scottish Territorial Waters but operations base at Workington, Cumbria and Grid connection at Seaton, Cumbria.
- Base operated by E.ON with Vestas technicians co-located.
- Workboat operated by local company Solway Maritime.
- Grid transmission assets transferred to OFTO in March 2011 but E.ON provides maintenance services.



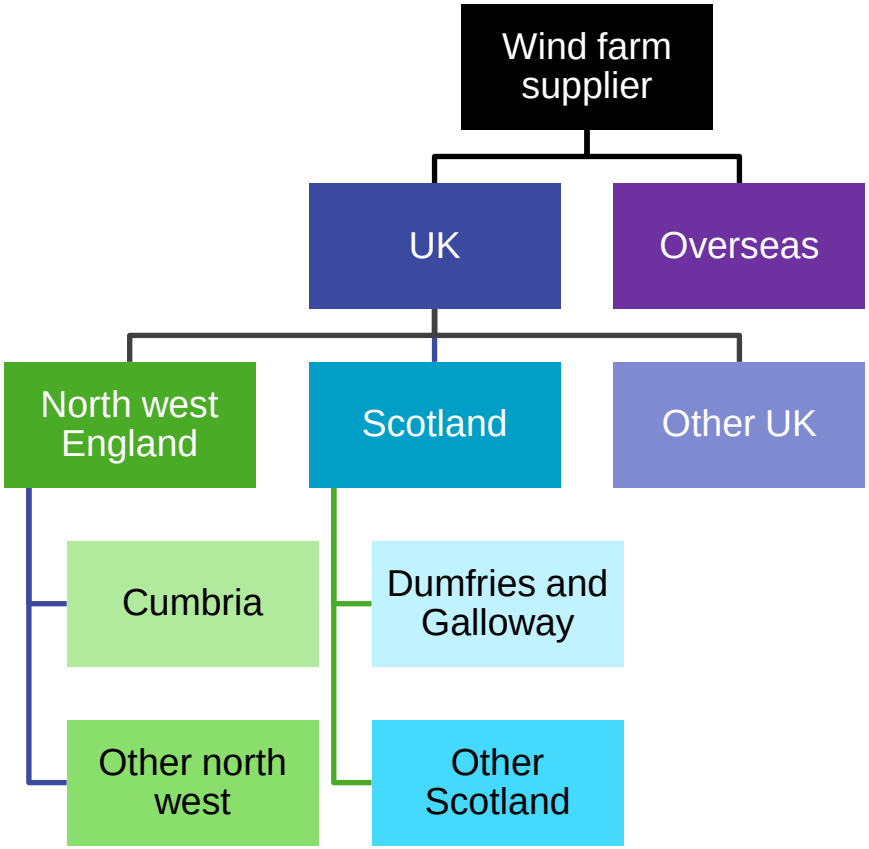
Robin Rigg construction

- Reasonable level of UK content, at the high end of figures reported for projects so far.
- Low level of local content, particularly in Dumfries and Galloway.
- Some Cumbria content: offshore construction support, O&M base and onshore grid.
- *"Benefit for local communities and the regional economy would require to be proven to address the anticipated significant adverse effects of the developments."*
  Blue Seas - Green Energy: A Sectoral Marine Plan for Offshore Wind Energy in Scottish Territorial Waters - on Solway Firth and Wigtown Bay projects, March 2011



Source: UK content analysis of Robin Rigg offshore wind farm, E.ON Climate & Renewables, October 2011

About the analysis - geography



About the analysis – types of activity

Activity	Scope
Turbine maintenance	Maintenance of the wind turbines
Balance of plant maintenance	Maintenance of substations, cables and foundations
Environmental services	Environmental monitoring and analysis
Marine operations	Vessel hire and maintenance, fuel, berthing
Fixed costs	Insurance and legal, administration, rent, onshore base maintenance, transmission use of system charges.

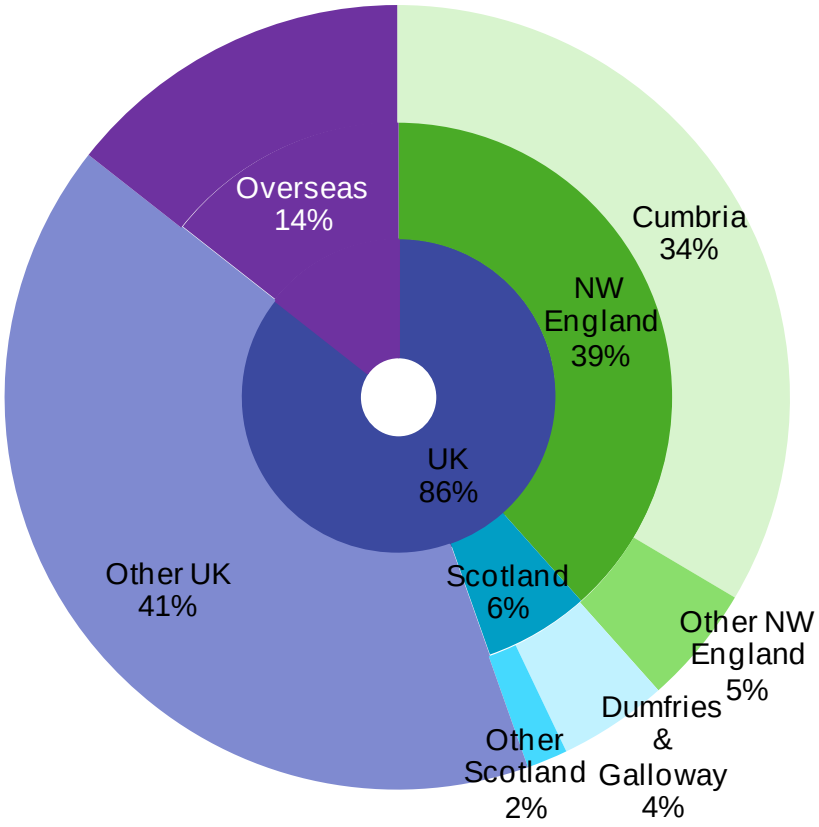
Economic impacts of O&M

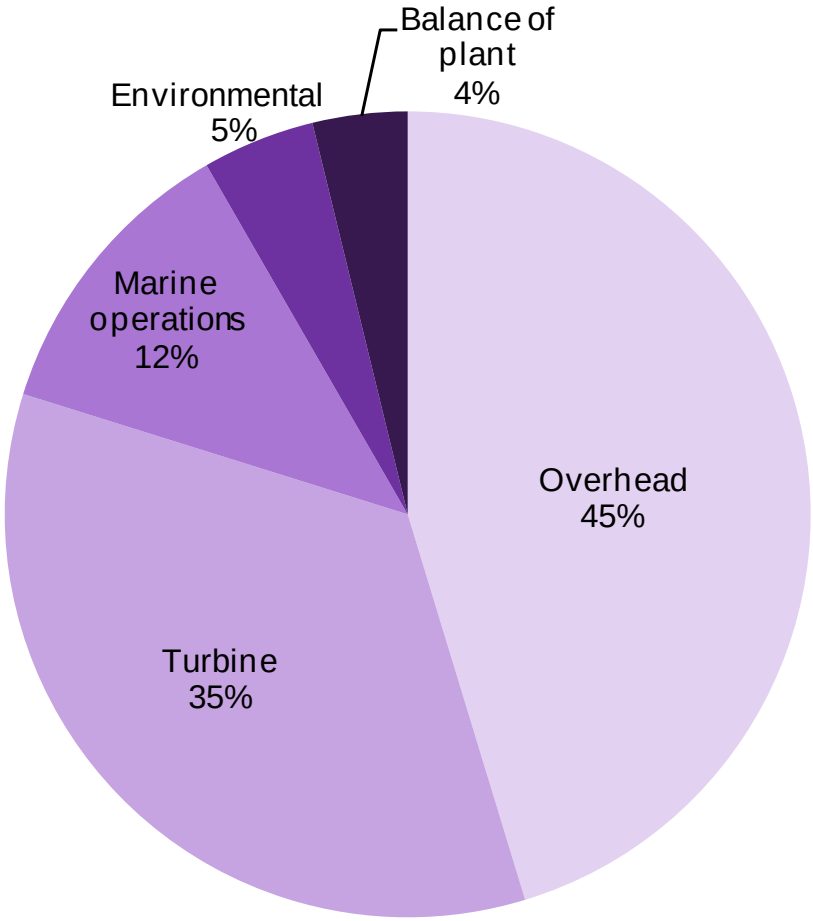
- **Direct value.** That which is generated through the activities of those companies with personnel dedicated to the O&M of the wind farm, ie E.ON, Vestas and Solway Maritime.
- **Indirect value.** That which is generated down the supply chain. Most of this value is generated through transactions involving EC&R, including that within the company.
- **Induced value.** That which is generated by those working directly or indirectly for the project, who spend their salaries which recirculates the money into the economy.
- Value is apportioned as far as possible to the economic activity.
- UK content = direct and indirect GVA generated in UK. Assumed that significant value is not leaked in lower tiers of the supply chain.
- Induced GVA derived from multipliers.
- Calculated jobs (FTEs) from GVA figures, using assumptions on labour costs, and the labour content in a given area of expenditure.

Issues to consider

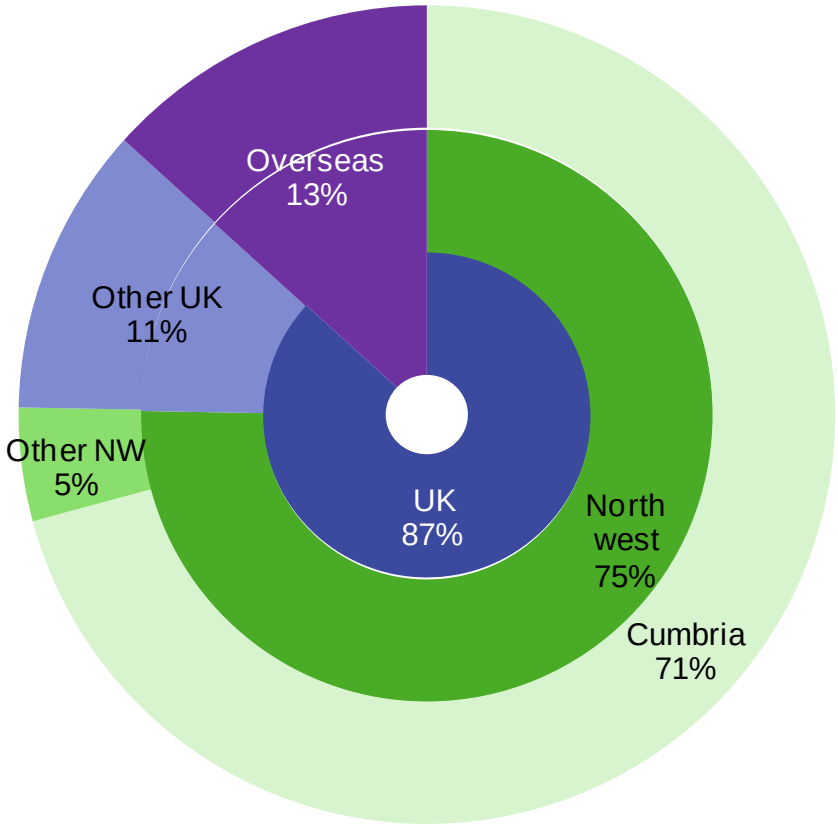
- Based on transactions involving the wind farm, but does not include OFTO transactions nor E.ON head office operational and asset management personnel.
- Analysis a snap-shot in time – May 2010 (first full month of operation) to April 2011.
- Provides “an” answer not “the” answer. Some differences in costs for 2010 and 2011 and this will continue.

Overall content results

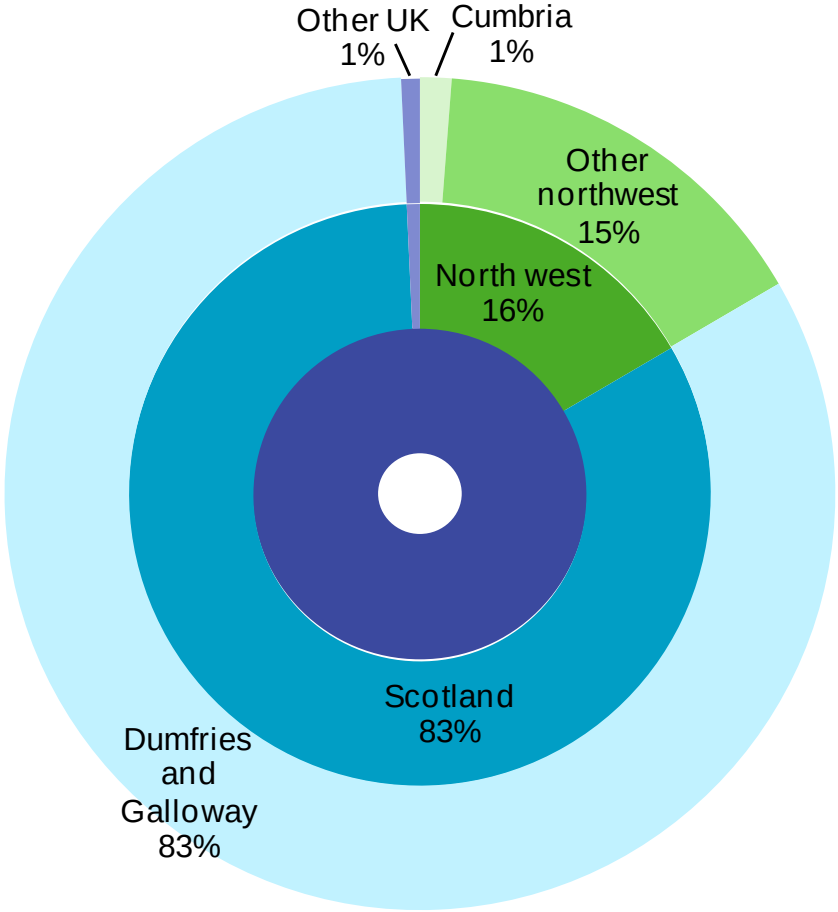




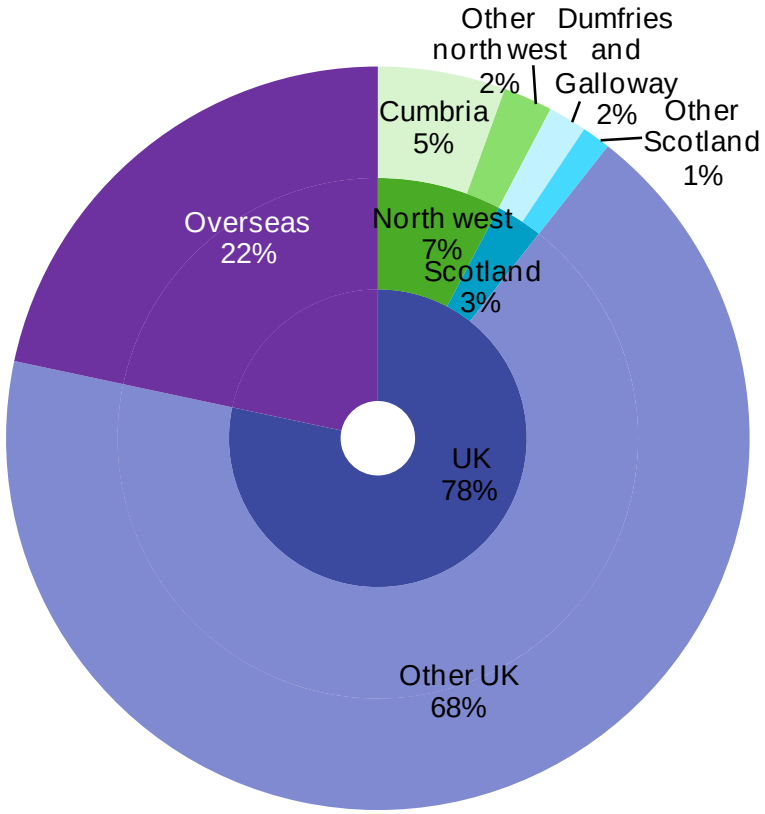
Turbine maintenance

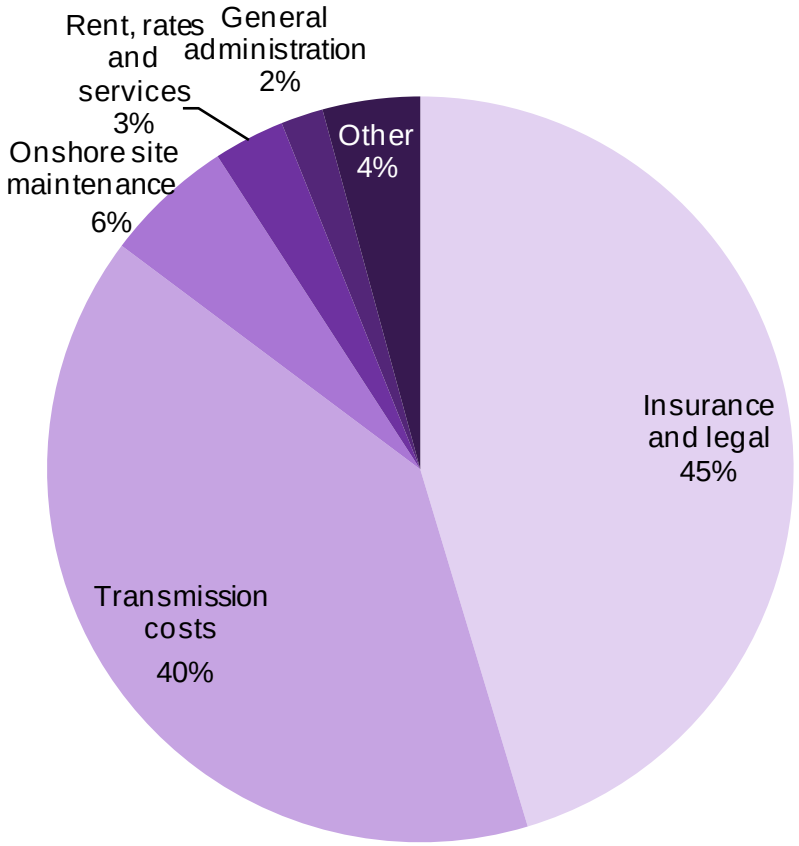


Environmental services

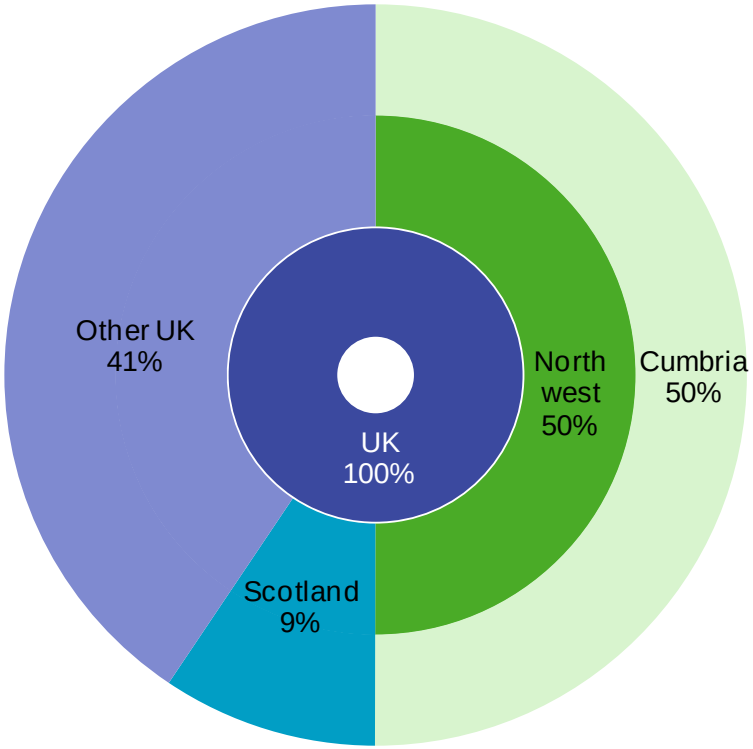


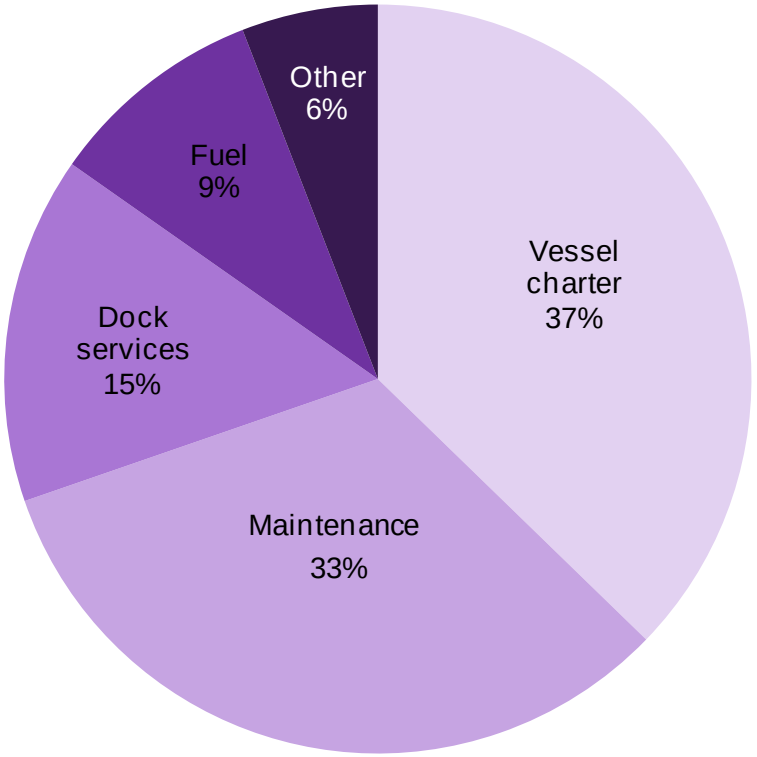
Fixed costs/overheads



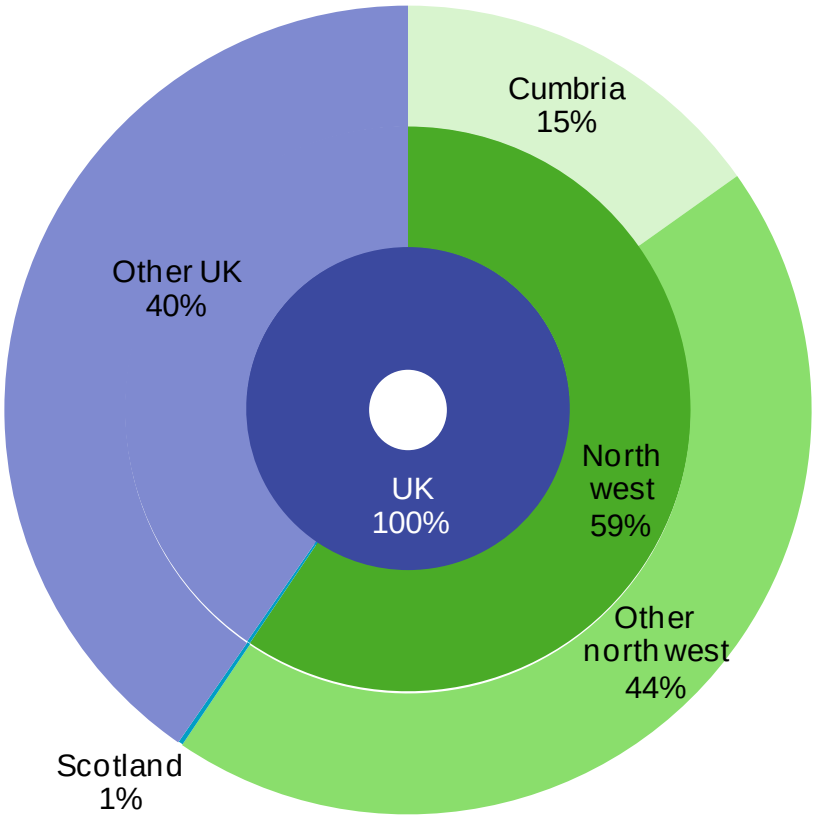


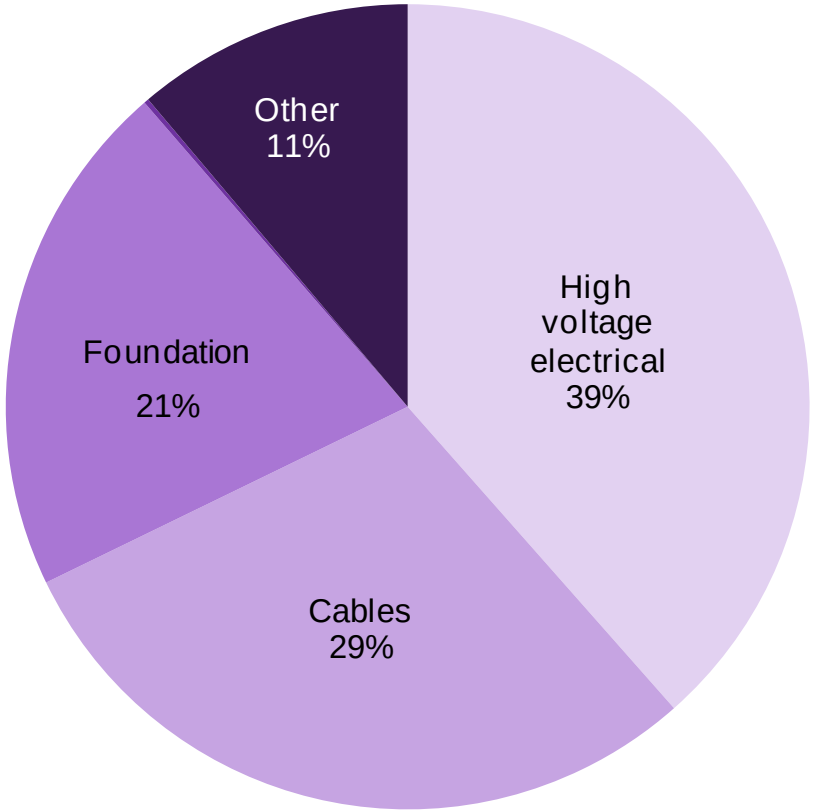
Marine operations



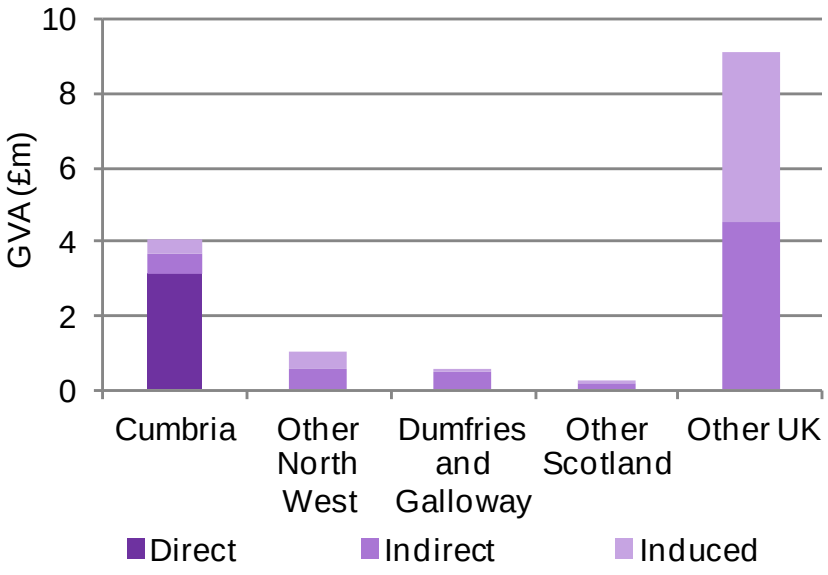


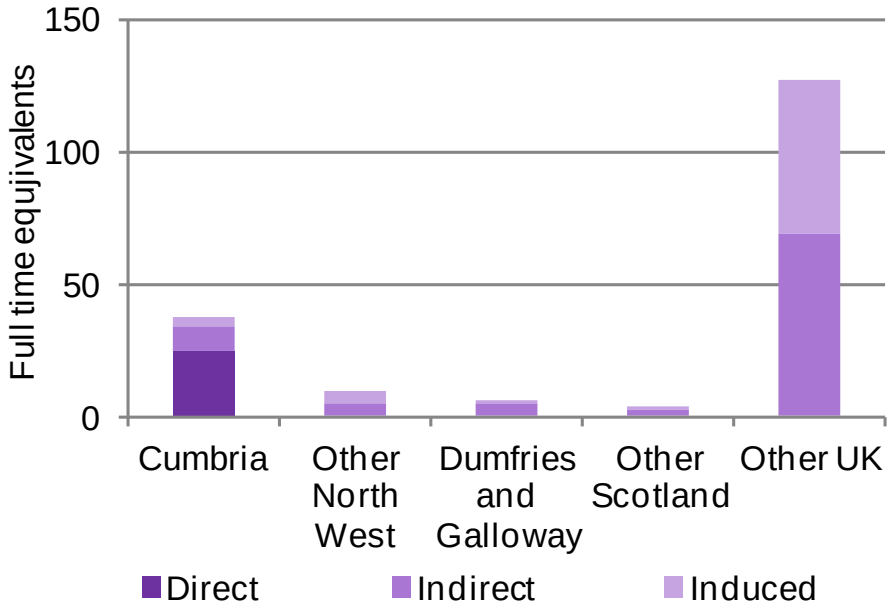
Balance of plant services





Annual jobs and GVA





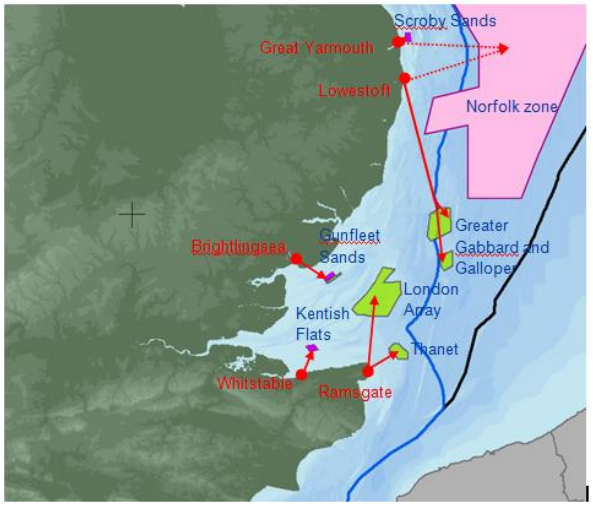
- Very little non-local, regional content, ie impact is either associated close to the wind farm base or widely distributed.

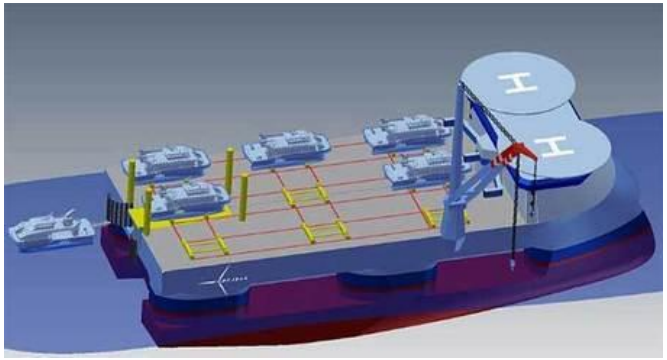
Economic benefit and stakeholder management

- Analyses help developers to be on the front foot. Possible to model benefits ahead of wind farm completion.
- Clearer identification of opportunities for local businesses.
- National and local approach different.
  - O&M economic impact is key area in demonstrating long-term benefit to local communities.
  - Construction economic impact studies tend to have a national or regional audience. Local engagement could backfire if opportunities don’t materialise.

The future

- The pattern could change if:
  - There is critical mass, either from large wind farm or a number of smaller ones – useful to observe how situation develops at places such as Lowestoft, Mostyn, Ramsgate and Grimsby.
  - The O&M strategy involves a mothership. The main base will be a larger port but since day to day access is not needed from port, the economic benefits may be more widely distributed.





Offshore Kinetics mothership concept

Thank you for listening

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