



Measuring the UK's offshore wind economic returns: From UK content to GVA

Alun Roberts, 27 October 2011

www.bvgassociates.co.uk



Why and how we need to measure the economic impacts offshore wind

Agenda

- Why offshore wind?
- UK content in UK offshore wind farms
- Example: UK content in the Robin Rigg Offshore wind farm
- Jobs and GVA
- Future levels of UK content

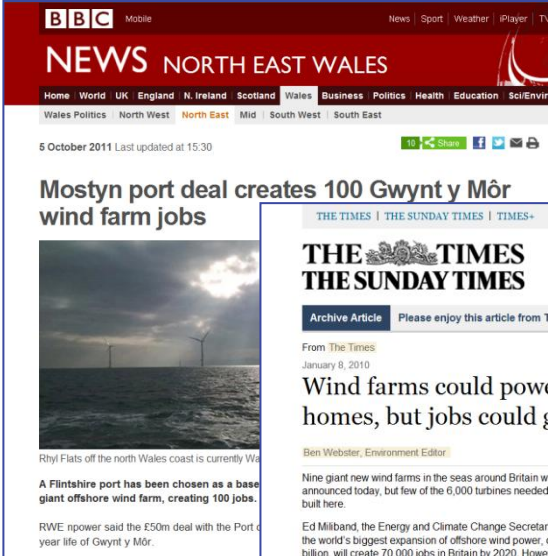
Why offshore wind? Green, black or blue?

- 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



Good, the bad and the ugly: offshore wind in the news

- The good
- The bad
- The ugly



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5 October 2011 Last updated at 15:30

Mostyn port deal creates 100 Gwynt y Môr wind farm jobs

Rhyl Flats off the north Wales coast is currently Wales's largest offshore wind farm. A Flintshire port has been chosen as a base for a new giant offshore wind farm, creating 100 jobs. RWE npower said the £50m deal with the Port of Gwynt y Môr will create 100 jobs.



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From The Times
January 8, 2010

Wind farms could power half of Britain's homes, but jobs could go overseas

Ben Webster, Environment Editor

Nine giant new wind farms in the seas around Britain will be announced today, but few of the 6,000 turbines needed are likely to be built here.

Ed Miliband, the Energy and Climate Change Secretary, will say the world's biggest expansion of offshore wind power, costing £5 billion, will create 70,000 jobs in Britain by 2020. However, the Government has failed to persuade any of the major wind turbine manufacturers to open a factory in Britain. The companies granted licences today to build the farms will not be obliged to source any parts from domestic manufacturers and most are expected to buy turbines made in Denmark or Germany.

A taskforce of officials from Downing Street, the Treasury and the business and energy departments has held talks with suppliers in recent months including Siemens, Vestas, Mitsubishi and General Electric, but none is yet willing to commit to manufacturing in Britain.

The country's only turbine blade manufacturer — the Vestas factory on the Isle of Wight — closed last summer after the company said the British market for turbines had been too slow to develop.



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Wind farm fight for Scotland: Trump

Last updated 16 Sep 2011 - 11:55 am

Billionaire businessman Donald Trump has said that he is "fighting for the benefit of Scotland" in objecting to plans for an offshore wind farm.

The US tycoon has written to First Minister Alex Salmond objecting to proposals to put up turbines near his luxury golf course.

In a second letter to Mr Salmond, he described wind turbines as "ugly" and said he wants to protect the Scottish coastline.

A planning application for an 11-turbine wind farm off Aberdeen Bay was submitted to Marine Scotland last month.

The European Offshore Wind Deployment Centre is a £150 million joint venture by utility company Vattenfall, engineering firm Technip and Aberdeen Renewable Energy Group.

The Trump Organisation filed its objection to the planning application on Wednesday.

Mr Trump wrote: "I know that our recent objection has caused a huge amount of publicity about the horrible idea of building ugly wind turbines directly off Aberdeen's beautiful coastline.

"Please understand that I am not fighting this proposal merely for the benefit of Trump International Golf Links. Instead I am fighting for the benefit of Scotland. Every location in the United States with a magnificent coastline - nothing compared to Scotland - has successfully defeated these horrendous looking, noisy and inefficient structures."

Mr Trump's £750 million development on the Menie estate on the coast is nearing completion after work began a year ago.

A Scottish Government spokesman said: "The Menie application was determined properly, according to Scotland's planning law and procedures, and it will be exactly the same for this proposed development. Ministers will assess every planning application on its merits, taking into account the views of consultees, interested parties and the public."



Donald Trump has objected to proposals for a wind farm off Aberdeen Bay

Why offshore wind? It's the economy, stupid

- Good news associated with manufacturing and O&M jobs
- Bad news associated with construction (imported turbines), visual impact
- Challenge to understand the picture and articulate the economic positive impacts – and to track the change as and when UK industrialises
- No economic impact = no offshore wind industry?
- But...
 - Few estimates of UK content publicly available
 - Apart from one project (so far) the methodology is unclear



The typical UK content in a UK offshore wind farm

A = <10%?

B = 10-19%?

C = 20-29%?

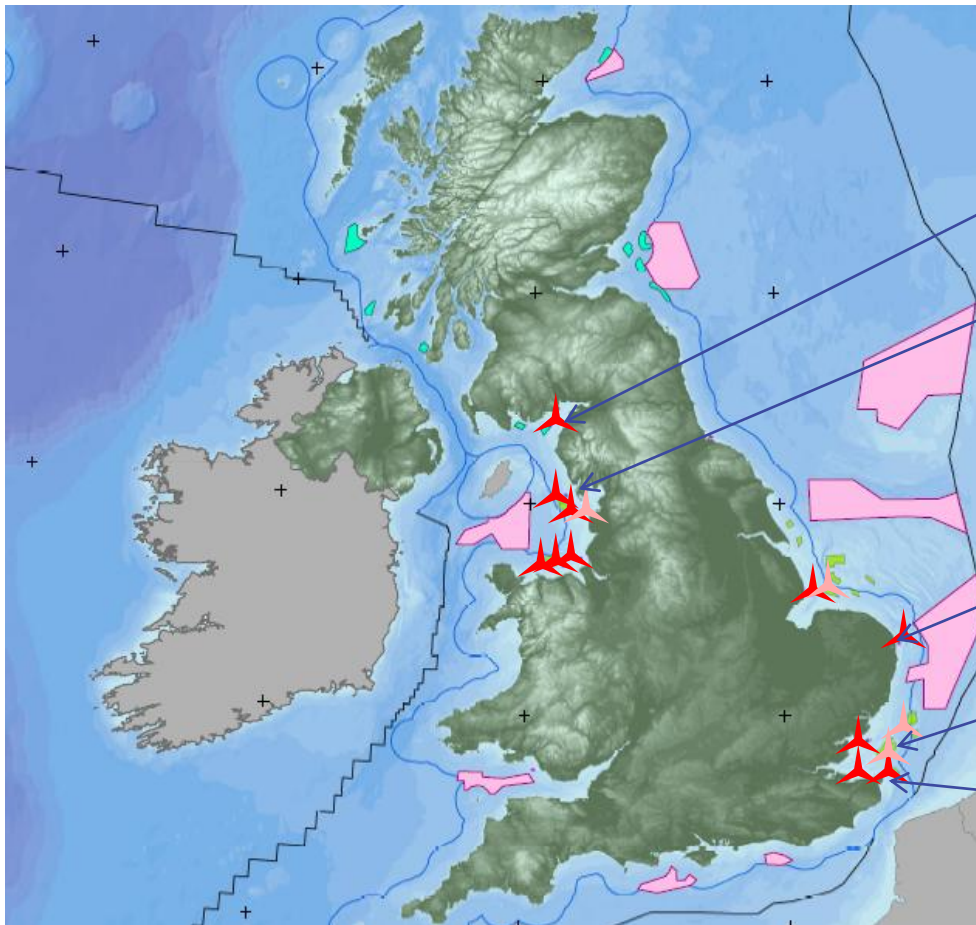
D = 30-39%?

E = 40-49%?

F = >49%?



UK content – the story so far



2010: Robin Rigg = ?



2011: Ormonde = 31%

Other unpublished data:
33%, 18%

2005: Scroby Sands = 48%

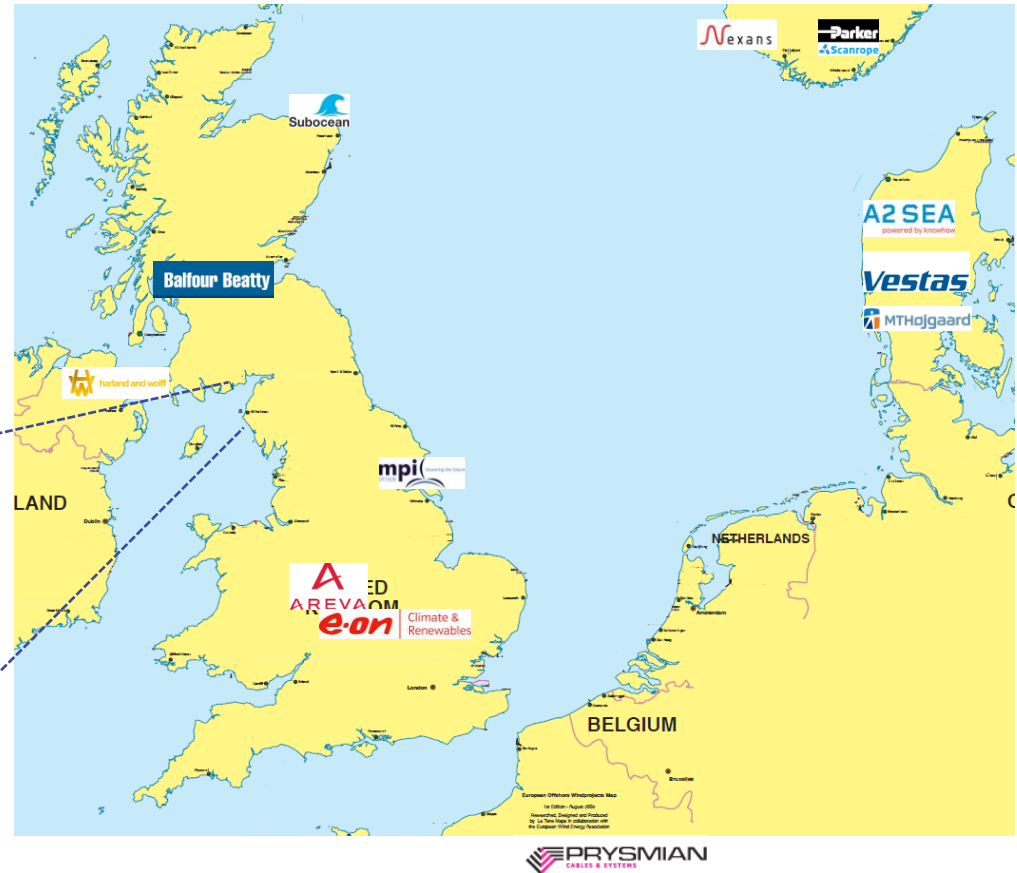
2012: London Array = 10% ???

2010: Thanet = c.28%

 Operating
 Under construction

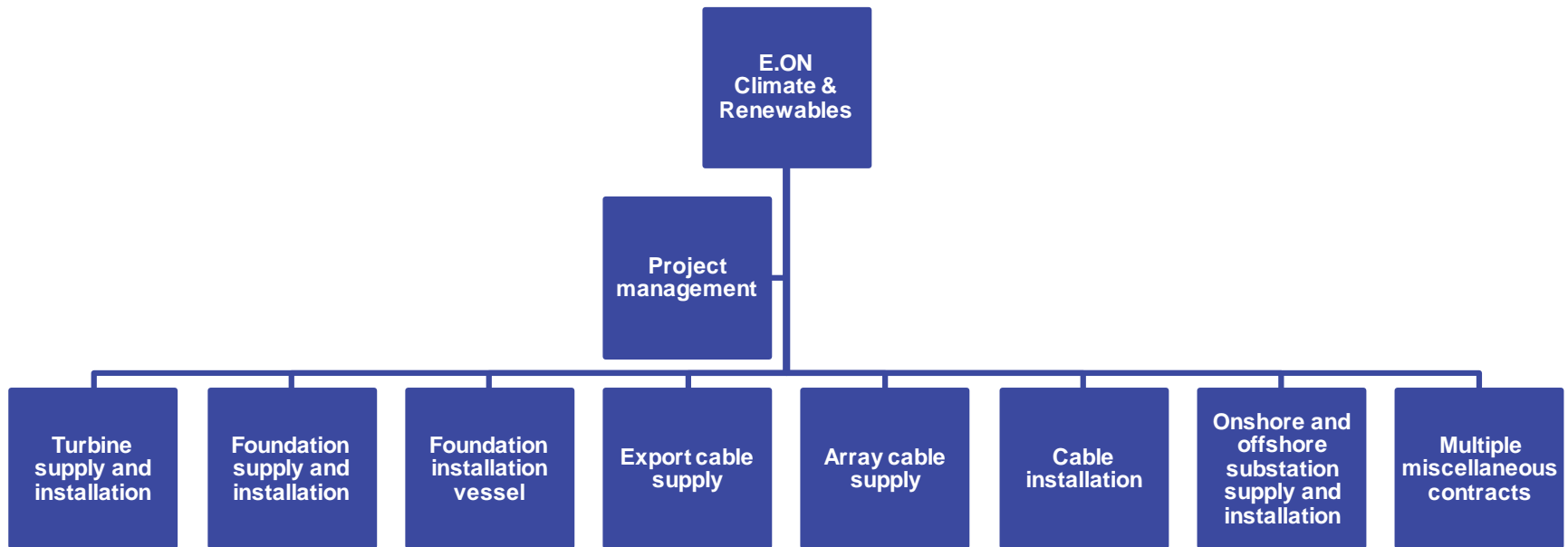
The Robin Rigg story

- TCE Round 1
- 180MW = 60 x Vestas V90 3MW
- Scottish Territorial Waters (the first)
- Grid connection Seaton, Cumbria
- Operations base Workington, Cumbria



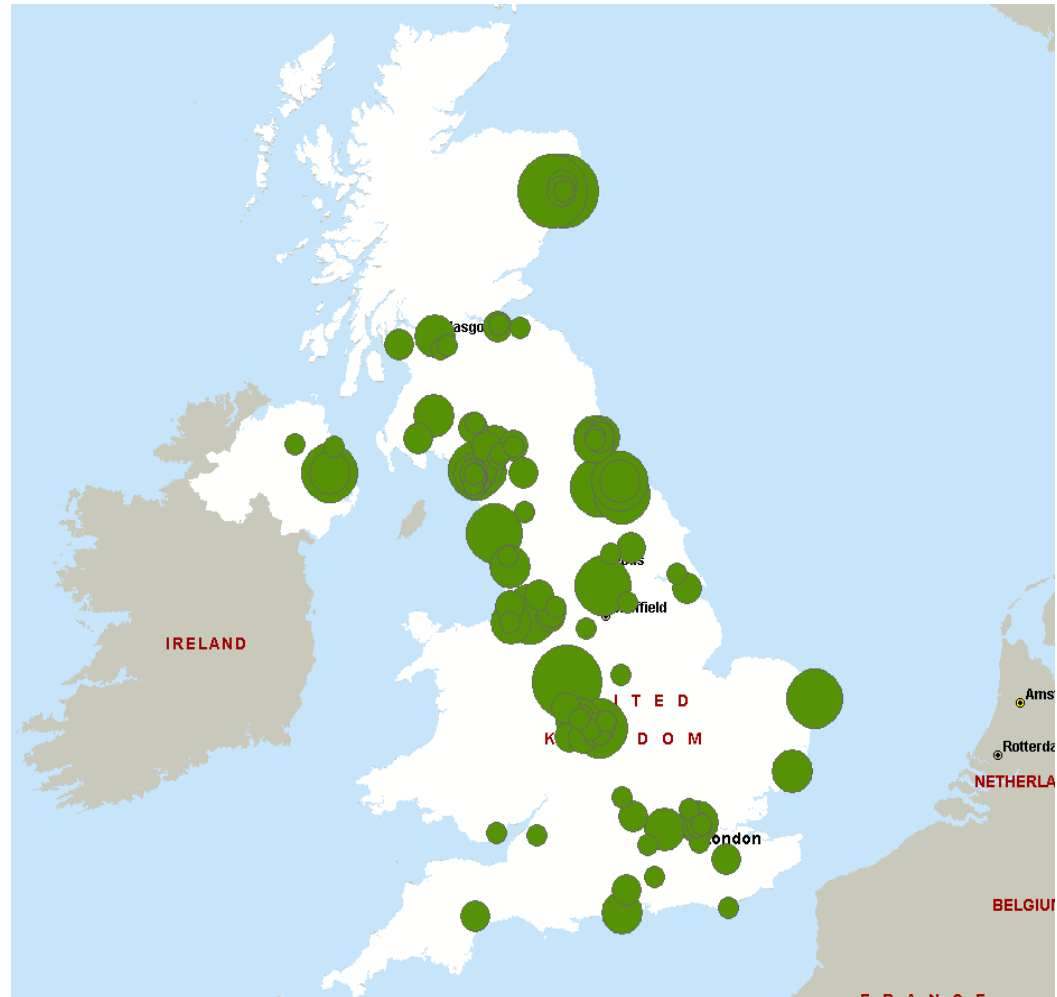
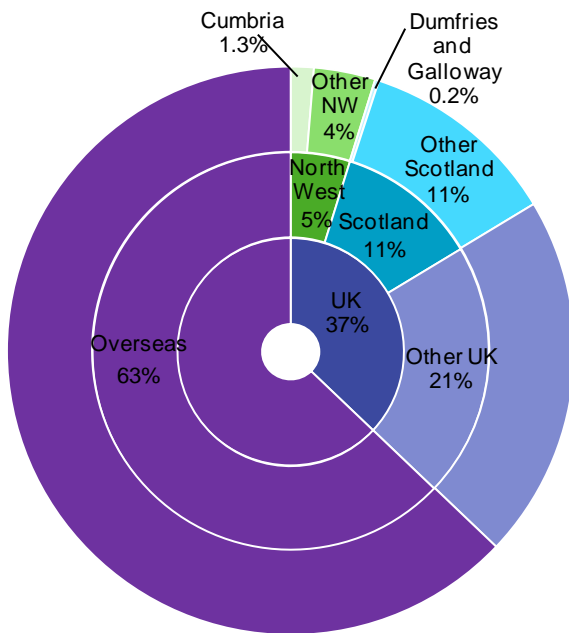
Robin Rigg UK content in CAPEX

- Develop light touch but robust methodology
- Report for public consumption
- Capital costs only



The Robin Rigg story – UK contracts

- E.ON contracts only (c.130)
- Significant number of £1+ million contracts to UK companies



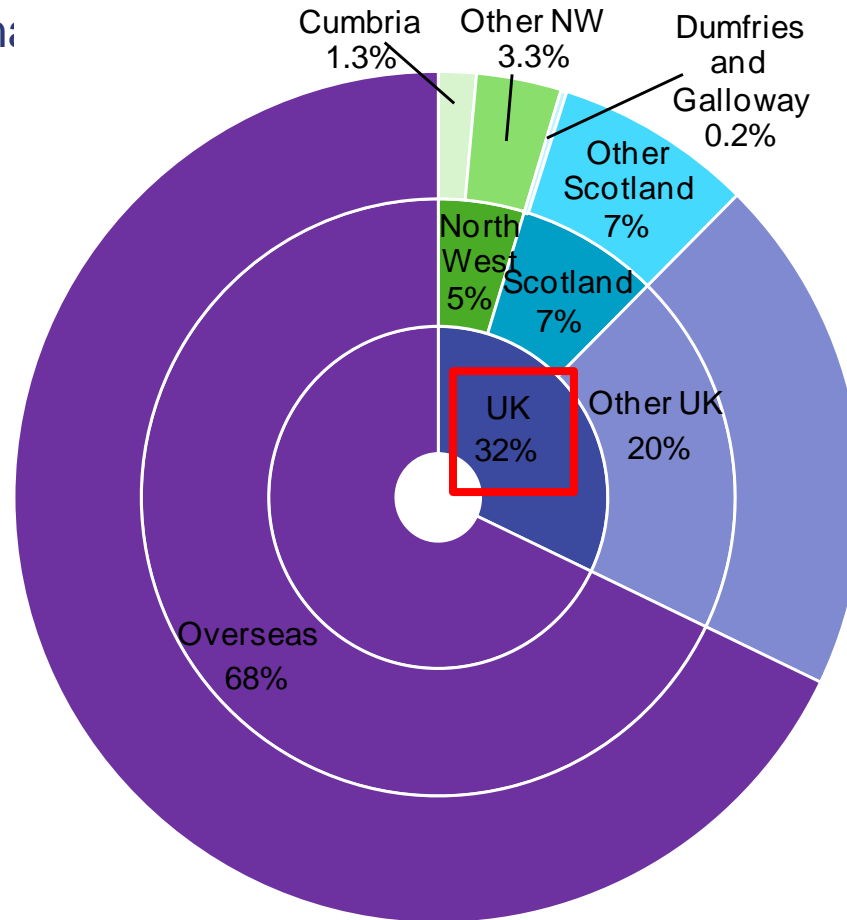
Contract values – only a partial view

- Overseas contractors such as Vestas, MTH, A2Sea will have placed contracts with UK companies – many local to project
- UK contractors will have overseas suppliers – only one of the main installation vessels built in the UK (1980s cable-laying barge)



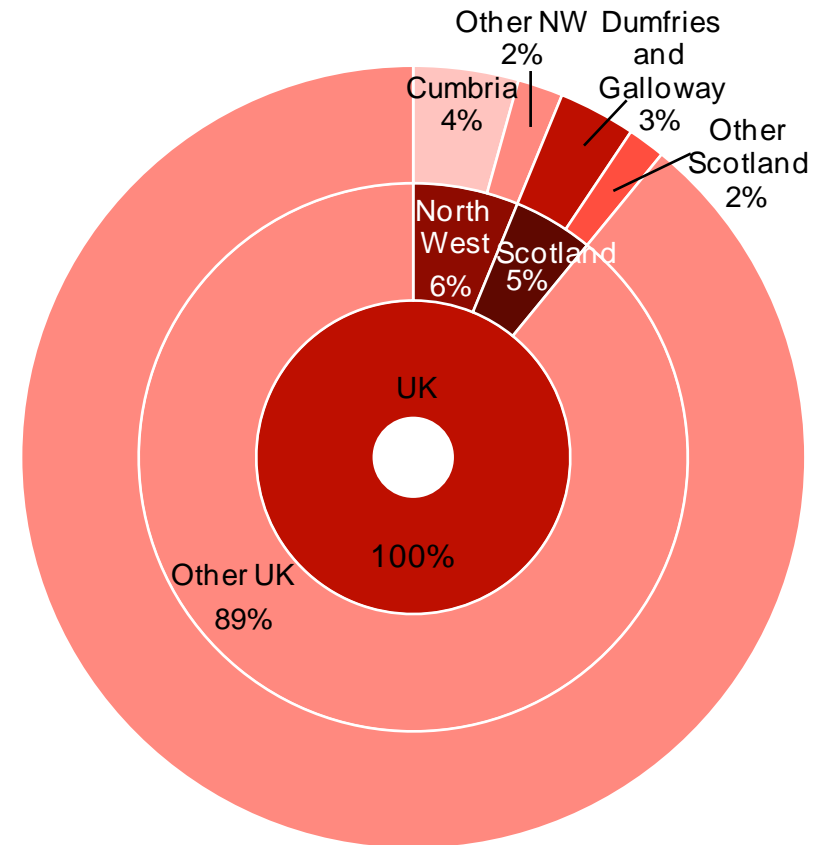
Robin Rigg UK content

- Higher or lower than



Where's the content - Project management

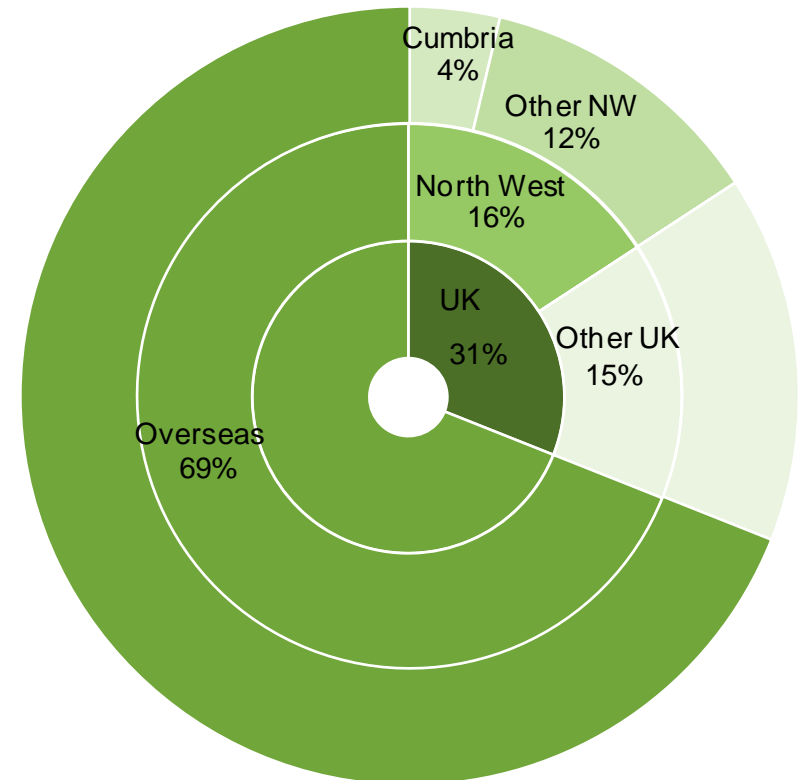
- All contracts to UK companies
- Little of the business was won by local or regional companies
- Small value contracts, such as those for land leasing and land agreements fees
- EC&R's main environmental consultancy was in Dumfries and Galloway



UK content in project management

Where's the content – Turbine and balance of plant

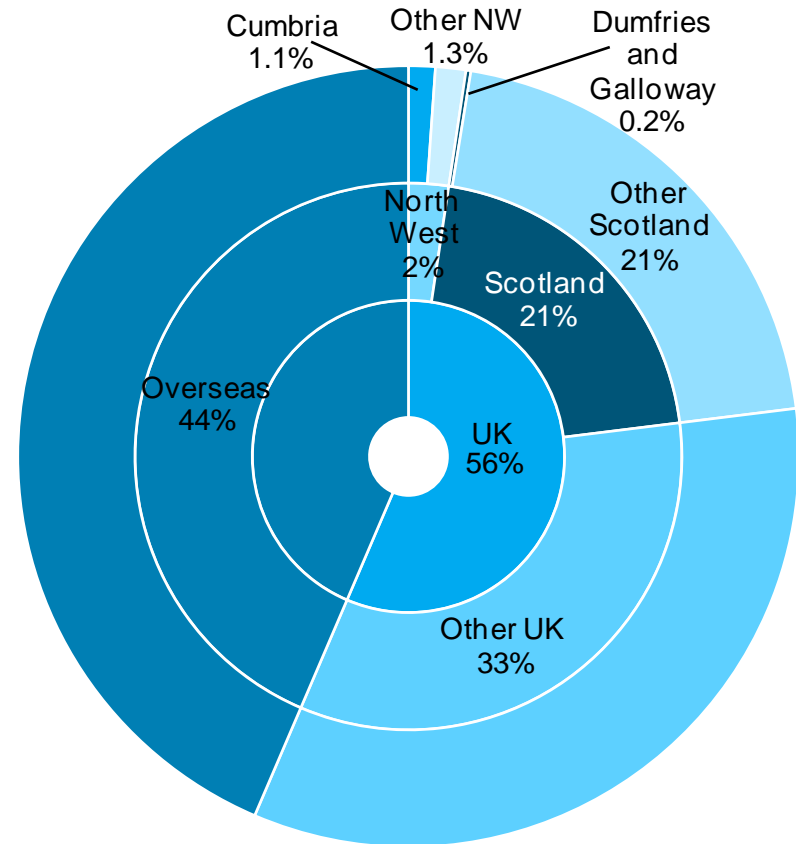
- No UK value was recorded in turbine manufacture - possible that there is content further down the supply chain
- The contracts captured by UK companies include:
 - Grid connection (onshore and offshore)
 - Onshore operations base (including offices, storage and vessels)
- No Scottish content was captured in balance of plant manufacture.



UK content in balance of plant manufacture

Where's the content – Installation and commissioning

- Large contracts for cable transport, storage and installation
- A large number of low-value contracts to local companies for O&M base and the onshore cabling
- Significant value to ports: Harland and Wolff in Belfast and Port of Mostyn in north Wales
- Foundation vessel and cable installation contracts, which were mostly placed with UK contractors - significant proportion of the project costs, even when the value of the vessel is removed.



UK content in installation and commissioning

Robin Rigg – key points

- Areas of work that typically require some level of local or regional supply:
 - Offshore construction base
 - Onshore grid connection, including the substation and cabling
 - Onshore O&M infrastructure
 - Land usage
 - Stakeholder relations
- Significant element of UK content in onshore activity – proportion will be lower for larger projects
- East coast projects require less port infrastructure

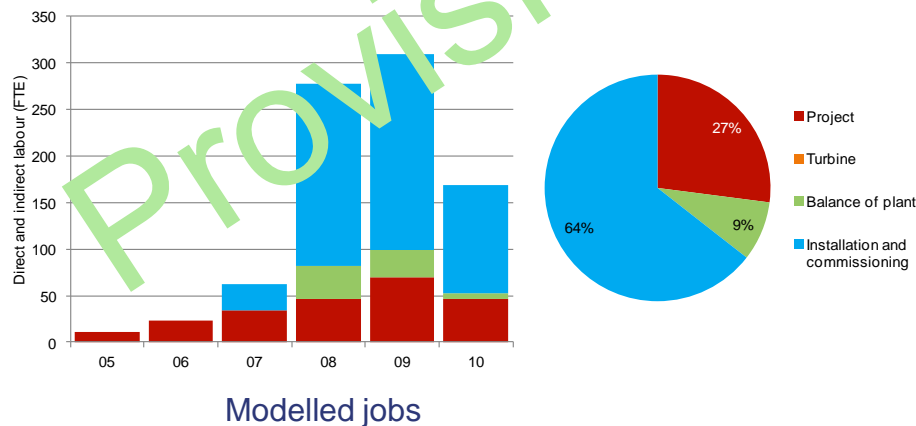
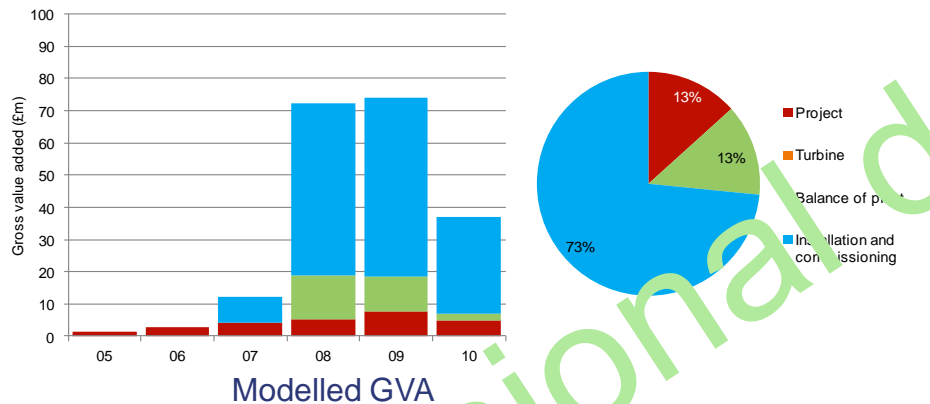


From UK content to GVA – next steps

- Fuller analysis of OPEX – assume high UK (Vestas commissioned study suggests c.95%), but how much local?
- Build up GVA and job creation for each project
- Look to the future
 - Robust data for engaging with local stakeholders
 - Model the impact of inward investment on UK content levels

Robin Rigg - GVA and jobs

- Recognises job creation through indirect and induced jobs as well as direct
- Recognises costs of employment in different sectors



UK content in CAPEX – how high can we go in 2020?

- Development and consenting (c.100% UK)
 - Turbine assembly (up to 50% UK)
 - Turbine subcomponents (20-40% UK)
 - Foundation (up to 50% UK)
 - Grid electrical (50-90% UK)
 - Cables (20% UK)
 - Installation (60% UK)
-
- For Round 3 projects, UK content in CAPEX could be 50-60% if the turbine manufacturers go ahead with manufacturing plans
 - If UK reaches 18GW by the end of 2020, this could be worth £15-20 billion

Thanks for your interest

- Any questions?
- Any data you are aware of?
- Report available from E.ON website
- Thank you to E.ON Climate & Renewables

