



UNIVERSITY of STRATHCLYDE
**FRASER OF ALLANDER
INSTITUTE**

Wind Europe Side Event - SUPERGEN Wind Hub – April 2019

Economic, social and environmental analysis



Overview

- › The increasing role for economic analysis of offshore wind in the UK
 - › Spotlight on some recent activities
 - › Current and future activities for economic analysis of offshore wind industry
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Economic analysis of offshore wind (UK)

- › Period of rapid policy action since early 2017 – “Industrial Strategy”, “Clean Growth Strategy”,
 - › **March 2018** – “[Vision 2030](#)” Offshore Wind sector deal proposed
 - Aspirations across exports, investment and skilled jobs
 - › **February 2019** – [Whitmarsh Review](#)
 - Outcome a “Supply Chain Development Plan ...how the UK can increase productivity and value at every stage of the offshore wind supply chain”.
 - › **March 2019** – [Offshore wind sector deal](#)
 - “The move to cleaner economic growth... is one of the greatest industrial opportunities of our time.”
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Industrial policy as energy policy

- › “The Offshore Wind Sector Deal builds on the United Kingdom’s global leadership in offshore wind, maximising the advantages for UK industry from the global shift to clean growth.”
- Offshore wind sector deal ([p.4](#))
 - › Confirms new emphasis to UK energy policy – “In a clear break with the past, our energy policy now includes wider economic benefits as an objective.” – [Jim Watson](#)
 - › Our work focuses on two areas:
 - model-based estimates of the impact of wind deployment on carbon emissions;
 - total and sectoral impacts on employment and economic activity;
 - › Economic analysis vital given new focus on offshore wind as key element of industrial strategy.
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About the Fraser of Allander Institute

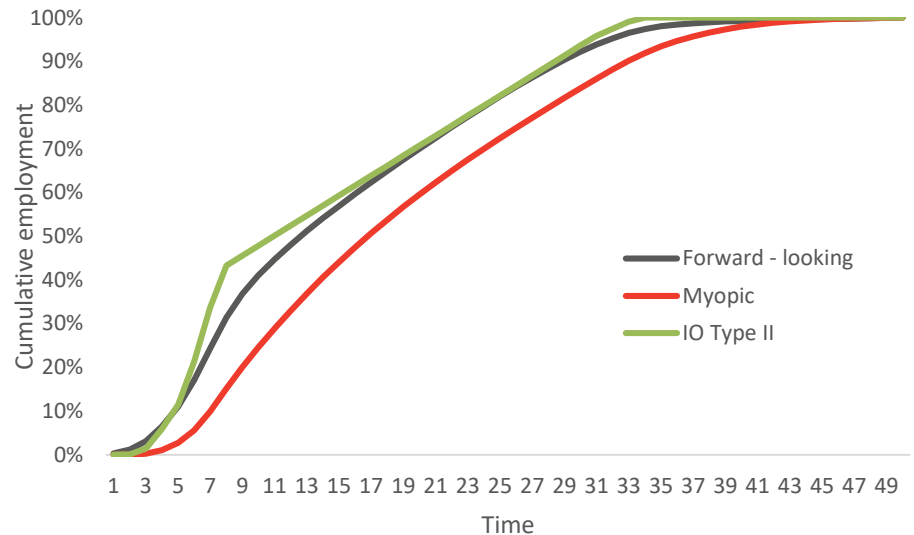


- › An economics research institute based in the Department of Economics at the University of Strathclyde;
 - › Established in 1975 with role in providing impartial analysis of Scottish economy;
 - › Long-standing history and international reputation in area of economic analysis and modelling
 - complement developments in modelling with applied policy-relevant analysis;
 - › Since 2000, we have looked impacts of energy policies and technologies, plus “invisible” policies, including support from Research Council, Government and other funding;
 - › Whole-economy perspective means that the wider impacts of policies can be analysed, on economic, emissions, as well as distributional objectives.
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Some recent activities:

Impact of developments

- › Over £40 billion to be invested in UK offshore infrastructure to 2030;
- › *Ex ante* impacts of projects typically assessed using economic modelling approaches;
- › *Local content* and *model specification* matters for scale of impact;
- › Can assess impacts of, e.g. increases in local content (“[committed to increase local content to 60% by 2030, including increases in capital expenditure phase](#)”)
- › Significant opportunities for UK supply chain at Tier 3 and Field, Assembly and Operations identified by Whitmarsh



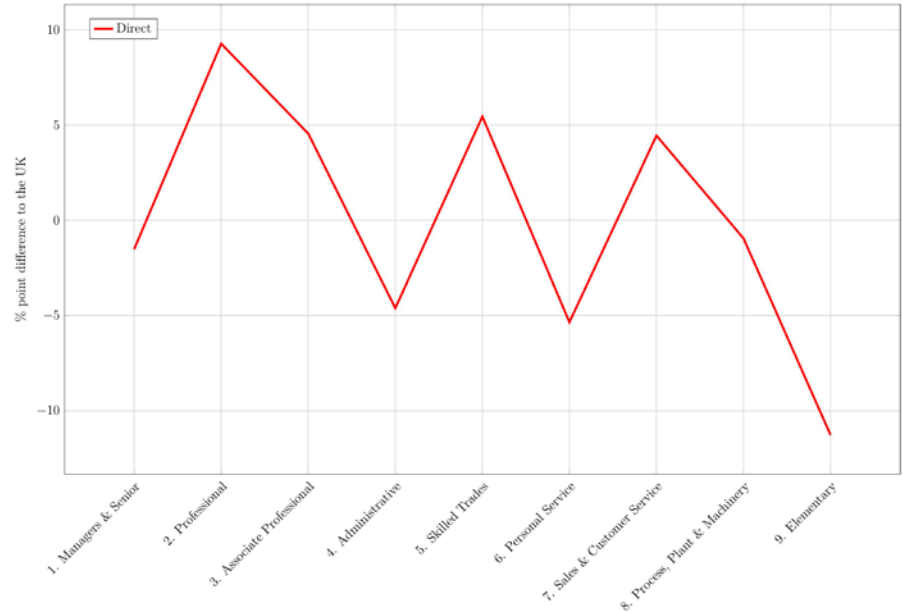
Person years of employment (PV) =

- 28,810 in forward-looking CGE case
- 37,700 in IO Type II case
- 46,710 in Myopic CGE specification

Some recent activities:

Skills in electricity

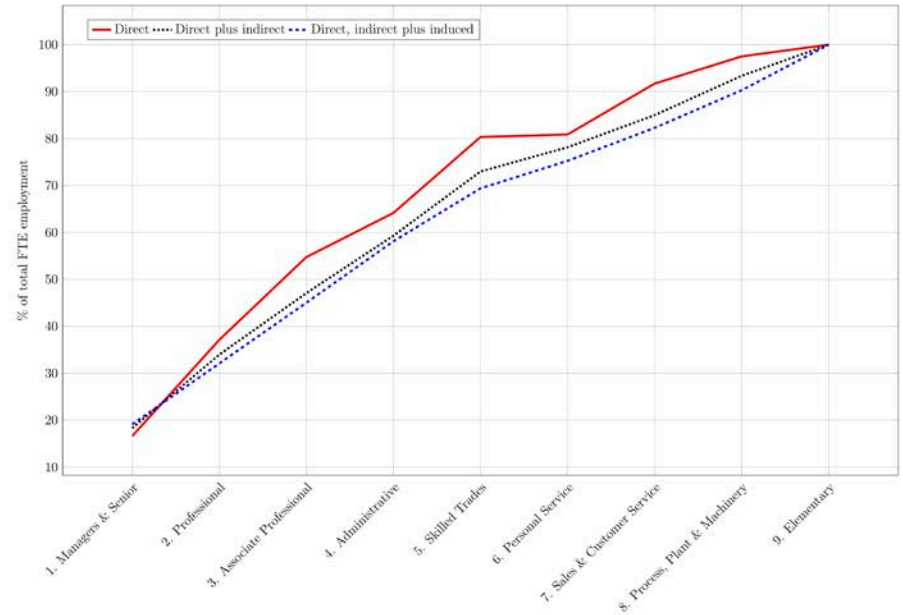
- › Employment the “big picture”, however skills element critical;
- › Existing energy activities identified by industrial sectors in economic accounts...
- › Direct = jobs in that activity, e.g. all elements of generation, transmission, distribution, and supply of electricity;
 - UK electricity sector – Direct: 66,949 jobs;
- › Skill intensity of direct employment in electricity above UK average for four categories: “Professional”, “Associate professional”, “Skilled Trades” and “Sales and Customer Service”.



Some recent activities:

Skills in electricity

- › “Indirect” and “induced” = jobs supported elsewhere in the economy through all industries supply chain (embeddedness) *and* respending of incomes
 - › Direct, plus indirect, plus induced = total
 - › Total jobs supported: 524,196 (1 job in sector supports 6.8 in rest of the economy)
 - › Total jobs supported across all skills types
 - › Interesting when we go beneath aggregate “Electricity sector”.
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Challenges in the count of jobs

- › A “simple” count of current employment related to offshore wind is problematic, but is critical;
 - “27,000 skilled jobs by 2030 and **11,000 skilled jobs now**” [1] (Vivid economics);
 - “Offshore wind **supports around 7,200 jobs** in communities around the country” [2] (ONS LCRE numbers in Offshore wind Sector Deal);
 - “There are more than 430,000 jobs in low carbon businesses and their supply chains, employing people in locations right across the country and **7,200 are directly employed in offshore wind**” [3] (Offshore wind Sector Deal).

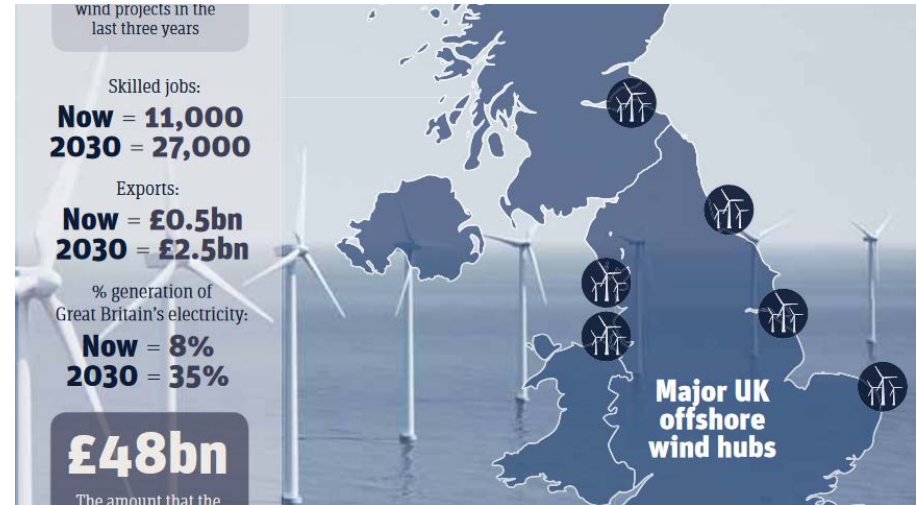


Image source [1].

[1] <https://bit.ly/2uuM4na> Newstatesman - Vivid

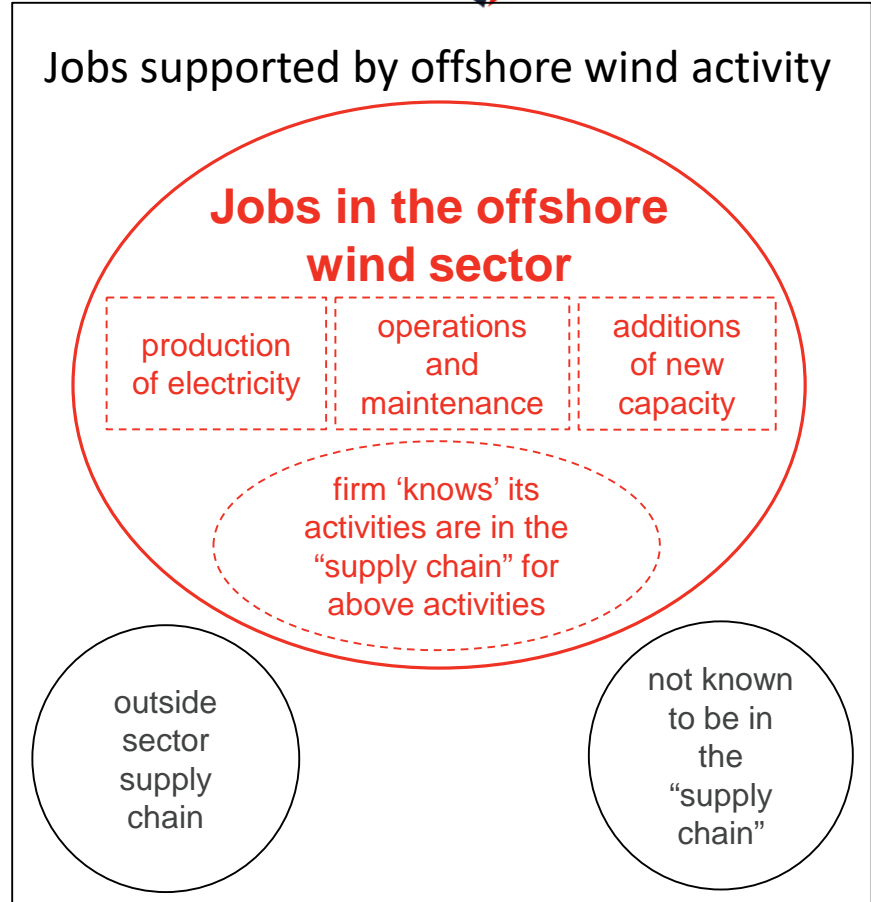
[2] <https://bit.ly/2OrVt8j> Policy paper Offshore wind Sector Deal

[3] <https://bit.ly/2Tz6K81> Policy paper Offshore wind Sector Deal

Defining job metrics

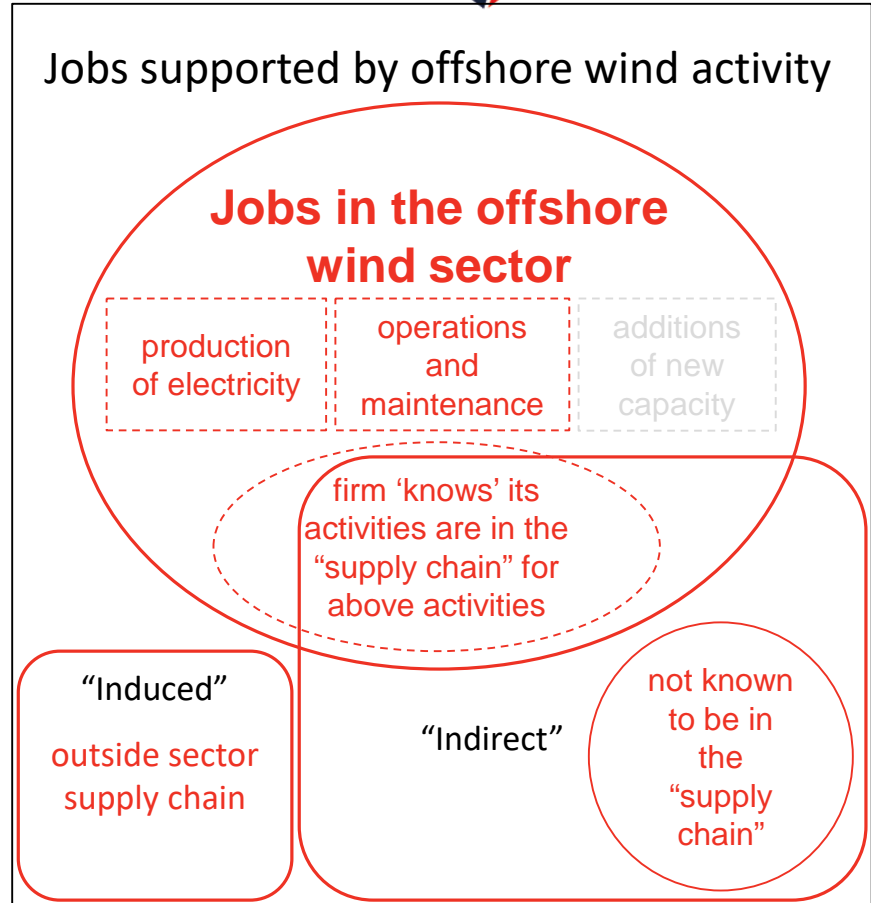
Red = included in ONS measure

- › “Did the business... operate in any of the below sectors?”
 - “Offshore wind: The production of electricity from Offshore wind renewable sources and/or the design, and/or production, and/or installation of infrastructure for this purpose. Including operations and maintenance.”
- › But what should be done with supply chain?
 1. Apply multiplier to the number obtained by the survey question? (but then likely “double counting”)
 2. Identify specific offshore wind activities within economic accounts?



Modelling the supply chain

- › Updated UK Input Output table with disaggregation of electricity activities, including by generation and then technology;
- › Activities supported by offshore wind activity can be identified from disaggregated economic accounts;
- › Looking at activity related to offshore wind generation initially (not additions of new capacity).



Initial results: offshore wind electricity *generation*

- › Each direct job in UK offshore wind generation supports 5.25 jobs in firms elsewhere in the rest of the economy (indirect);
 - 43% of jobs supported by offshore generation are “high skill”, with only 9% “low skill” – almost half of these in “Wholesale and retail sector”;
 - › including the “induced”, each direct job in generation supports 10.51 jobs across the economy.
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Direct



Indirect



Direct



Indirect and induced



References



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