Briefing: What happened to all the green jobs?

Introduction

Big hopes have been pinned on the 'green economy', and especially renewable energy, to deliver high quality employment to replace at least some of the jobs that will be lost as the economy decarbonises. However, despite a sharp increase in the deployment of renewables, which now provide close to a third of our electricity, growth in the number of UK jobs in the sector has been much less impressive. In fact, according to official data, the total number of UK jobs in renewable electricity (including bioenergy) has fallen by around 30% since 2015.

This briefing, which was partly inspired by a recent report from the Scottish TUC on renewables employment in Scotland[1], looks at some of the factors behind why the anticipated growth in renewables jobs has not materialised over the past decade at the scale that was hoped for. It argues that a policy approach that focused on using generous consumer subsidies to attract private capital to the sector, with minimal state involvement beyond that, has led to a lower volume of projects than might otherwise have been the case, and to less value (and jobs) going to UK-based companies.

Additionally, this briefing highlights concerns about the quality of some of the renewables jobs that have been created; at least one employer has been caught paying workers below the UK minimum wage, while the sector's health and safety record is also source of concern - the rate of accidents and injuries in offshore renewables is around four times higher than in the offshore oil and gas sector, according to the latest comparable figures.

Finally, the briefing concludes with some recommendations about what needs to change. In short, the potential for UK jobs growth in renewables is still very much there, but the UK government will have to adopt a far more active and interventionist role if that potential is to be realised.

The hopes and realities of green jobs growth

A decade ago, a variety of projections were made about the future of renewables employment. In some of the most optimistic forecasts, renewables were set to sustain hundreds of thousands of jobs over the next ten years.

[1] STUC (2019) 'Broken Promises and Offshored Jobs' https://www.gmb.org.uk/sites/default/files/Broken%20promises%20and%20offshored%20jobs%20report.pdf

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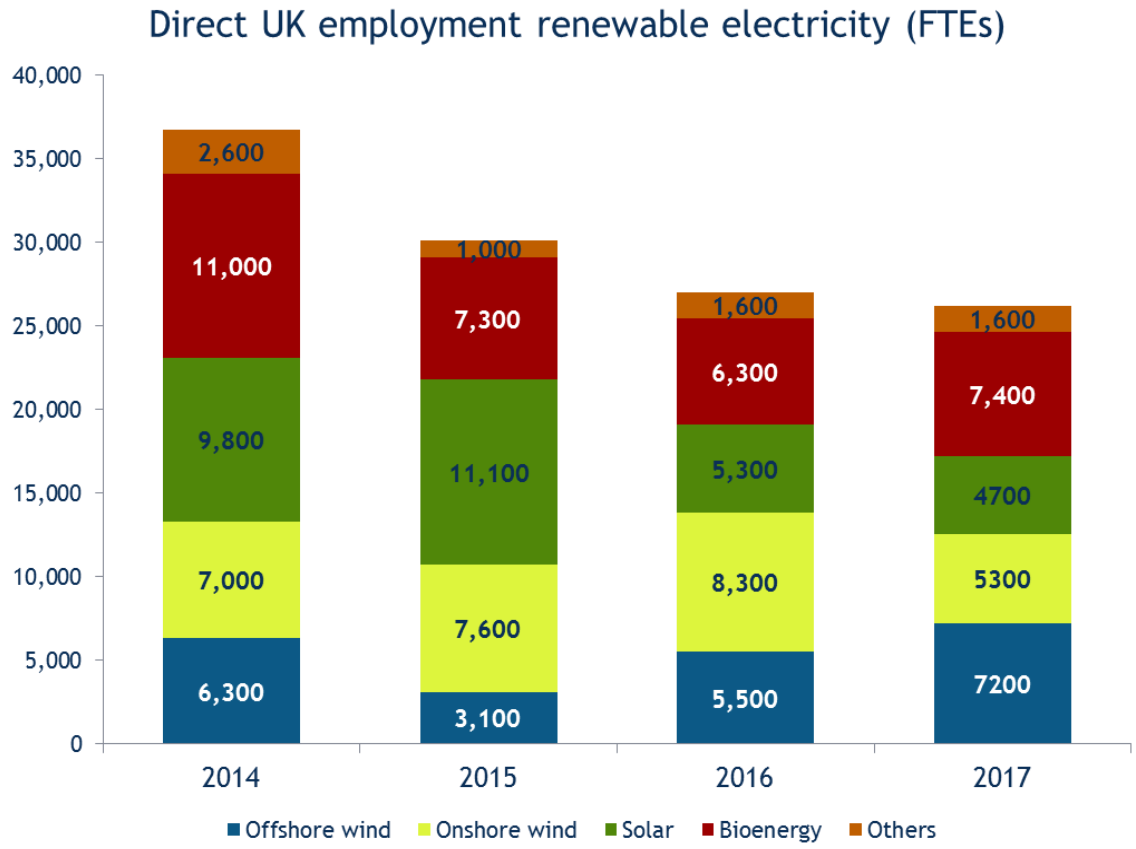
This revision: https://library.prospect.org.uk/id/2019/00836/2019-05-30

Organisation	Date	Estimate	Notes	Source
Carbon Trust	2009	70,000	Offshore wind only – direct and indirect (supply chain) jobs by 2020	Carbon Trust (2009) 'Focus for success: A new approach to commercialising low carbon technologies
Greenpeace	2009	105,000	All renewables technologies by 2030	Greenpeace (2009) 'Energy Sector Jobs to 2030'
Offshore Valuation Group	2010	65,000	Offshore wind, direct jobs only by 2050	The Offshore Valuation Group (2010) 'The offshore valuation: a valuation of the UK's offshore renewable energy resource'
Department for Energy and Climate Change (DECC)	2011	500,000	All renewable technologies by 2020	DECC (2011) 'Renewable Energy Roadmap'
RenewableUK	2011	47,200	Offshore wind, direct & indirect jobs by 2021	RenewableUK (2011) 'Working for a Green Britain'
Scottish Government	2011	40,000	All renewables technologies by 2020 (Scotland only)	Scottish Government (2011) '2020 Routemap for Renewable Energy in Scotland'

These forecasts have turned out to be highly optimistic, and in fact, renewables employment is in decline. According to data from the Office for National Statistics, between 2014 and 2017 (the latest year for which data is available) direct employment in renewables fell by 30%, with declines in every sub-sector except offshore wind (though even in offshore wind, job numbers did fall significantly between 2014 and 2015).[2]

[2] This data on employment is taken from, ONS (2019) 'Survey of the Low Carbon and Renewable Energy Economy' https://www.ons.gov.uk/economy/environmentalaccounts/bulletins/finalestimates/2017



Why have we not seen more green jobs?

It is important firstly to emphasise a few key points about the forecasts made:

a. Accurately forecasting job growth is challenging and some degree of discrepancy between forecasts and reality was to be expected;
b. There haven't been consistent criteria about what counts as a 'green job', and some of the more optimistic jobs projections were likely to have been based on a looser definition;
c. Crucially, many of the forecasts were explicitly dependent on the development of a favourable policy environment, and often assumed active intervention and support from government – this has largely not been the case and is a key reason why actual job growth has been so meagre (and has in fact been in decline recently).

Two main factors explain why we have not seen as the anticipated growth in green jobs: i) a lower than expected volume of projects; and ii) lower than anticipated UK share of value created by the renewables industry.

Lower volume of projects

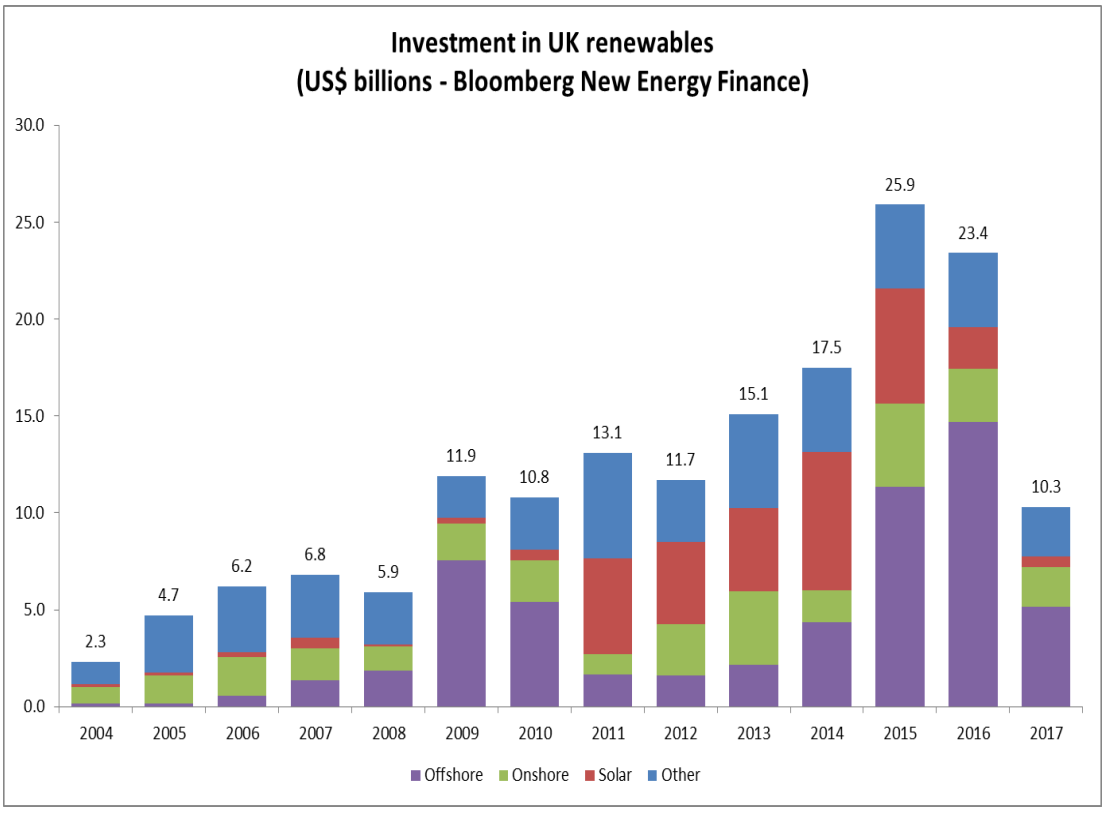
Successive UK governments have taken a market-led approach to energy policy more broadly, and to the deployment of renewables in particular. In practice this has meant using generous subsidy regimes (generally funded via consumer energy bills) to attract private capital into the sector, and to minimise the use of government funds to support renewables deployment.

The subsidy regime has proved to be an expensive way to procure renewables capacity. Total spending on the main subsidy programmes (the Renewables Obligation, Feed-in-Tariff,

and Contracts for Difference) is estimated to reach just under £9 billion a year by 2025 (in 2011/12 prices), equivalent to around £330 per UK household. [3] The Committee on Climate Change has estimated that subsidies for offshore wind alone have averaged £1.5 billion a year in the last five years, and will reach £3.5 billion a year by 2030.[4]

In recognition of the mounting costs to consumers of renewables subsidies, the Chancellor announced in the 2017 Budget that no new subsidy support for renewables (beyond the £557 million already earmarked for future Contracts for Difference auctions) would be forthcoming until total subsidy spending started to stabilise (estimated to be around 2025).[5]

This followed on from the decisions to close a number of key subsidy schemes, particularly the Renewables Obligation and the Feed-in-Tariff Scheme. These cuts had an immediate negative effect on employment in the solar industry in particular, with PwC estimating 12,000 jobs lost in the twelve months following the announcement of subsidy cuts.[6] Coupled with tighter planning rules that made deploying new onshore wind projects in England and Wales extremely difficult, these policy decisions have had a deleterious effect on new renewables deployment.



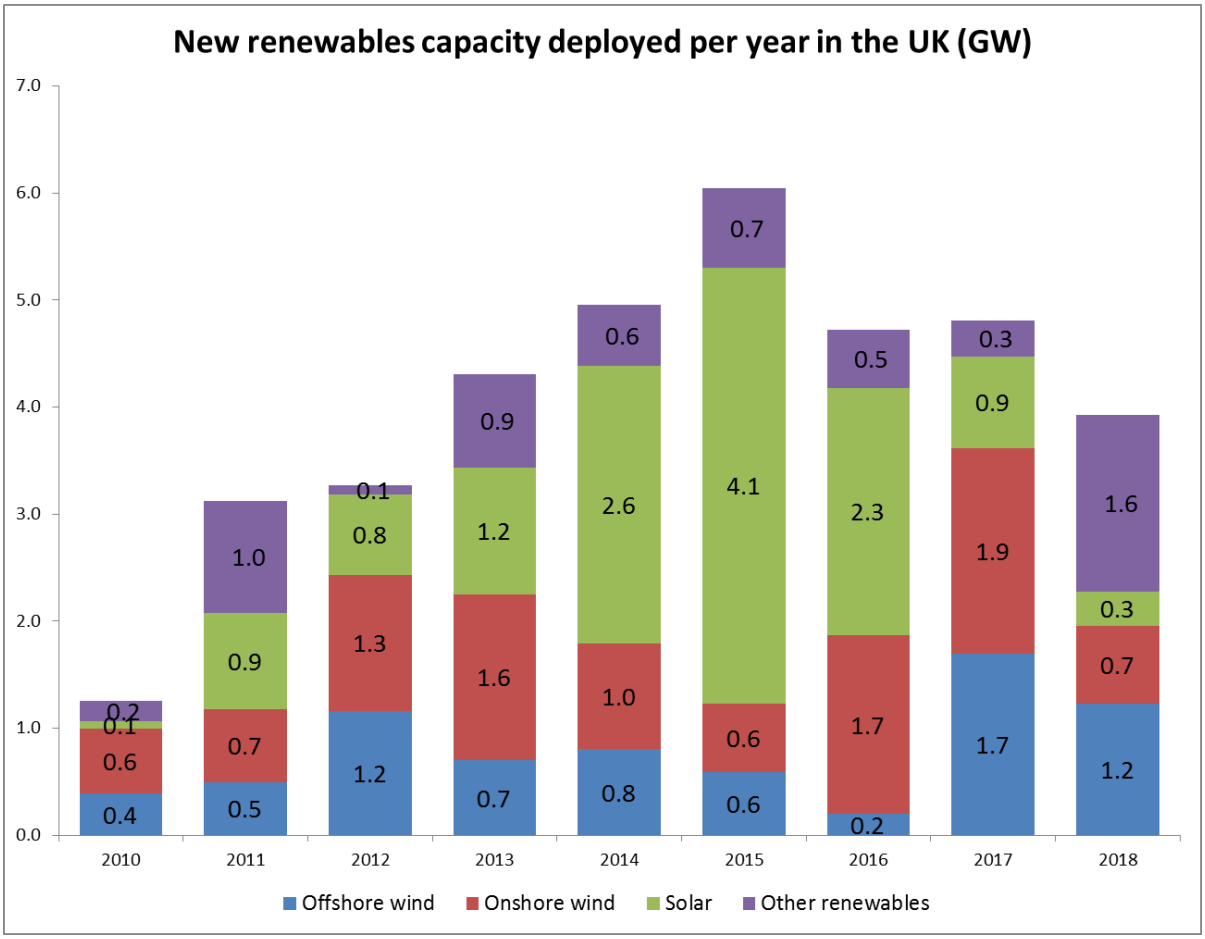
[3] House of Commons Library (2017) 'Control for Low Carbon Levies' https://researchbriefings.parliament.uk/ResearchBriefing/Summary/CBP-8187

[4] CCC (2019) 'Net Zero: the UK's contribution to stopping global warming' https://www.theccc.org.uk/wp-content/uploads/2019/05/Net-Zero-The-UKs-contribution-to-stopping-global-warming.pdf (p216)

[5] HM Treasury (2017) 'Control for Low Carbon Levies' https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/660986/Control_for_Low_Carbon_Levies_web.pdf

[6] Independent (2016) 'UK Solar power industry loses over 12,000 jobs after Government slashes subsidies' https://www.independent.co.uk/news/business/news/solar-power-uk-has-lost-over-12000-jobs-after-government-slashed-subsidies-a7155236.html. Note that these figures do not completely align with the ONS jobs data presented earlier.

Between 2016 and 2017, there was a sharp fall in investment in UK renewables, which fell 56% to hit the lowest level since 2008.[7] Similarly, in 2018 the annual rate of additions of renewables capacity fell to its lowest level since 2012, driven in particular by the collapse in solar and onshore wind deployment. Without the significant deployment of bioenergy capacity in 2018, the fall in new renewables would have been much greater.



This decline is in line with global trends; according to data from the International Energy Agency, after two decades of strong expansion, the rate of growth of renewables capacity flat-lined in 2018.[8] The IEA further estimates that globally we are only adding around 60% of the renewables capacity we need to hit our minimum climate targets.

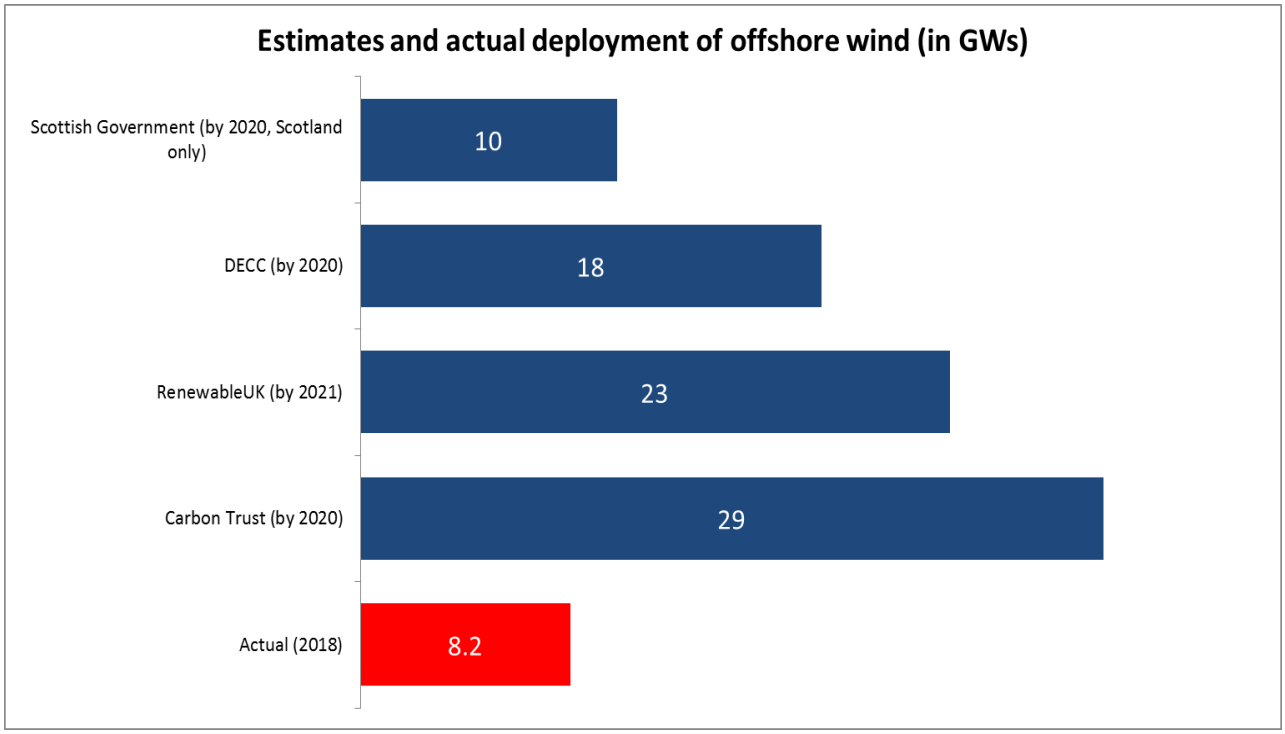
This expensive, private-sector led approach, based on a subsidy regime which has now been heavily curtailed, has failed to deliver the volume of renewables capacity that was anticipated in many of the early forecasts. According to the CCC, the UK needs to invest around £20 billion a year in low carbon power generation in order to hit our decarbonisation,

[7] Bloomberg New Energy Finance (2018), https://about.bnef.com/clean-energy-investment/. Detailed figures for 2018 investment are not available, but the headline figure appears to be similar to 2017.
[8] IEA (2019) 'Renewable capacity growth worldwide stalled in 2018 after two decades of strong expansion' https://www.iea.org/newsroom/news/2019/may/renewable-capacity-growth-worldwide-stalled-in-2018-after-two-decades-of-strong-e.html?utm_campaign=IEA%20newsletters&utm_source=SendGrid&utm_medium=Email

but over the past five years investment has averaged only around half that level.[9] Similarly, to hit the target in the Offshore Wind Sector Deal of 30GW of capacity installed by 2030 will require an average annual deployment rate of more than 2GW per year over the next decade – more than double the average rate of deployment in the past five years.

But, thanks in part to the lack of a meaningful industrial strategy, rapidly increasing the deployment of renewables infrastructure will not be straightforward. A 2018 report by former Defence Secretary Michael Fallon into UK content in offshore wind warned that a handful of large renewables projects undertaken simultaneously could quickly overwhelm the supply chain and create serious logjams. [10]

This hands-off approach on the part of government to renewables deployment, and energy policy more generally, is an important part of the reason why the number of renewables jobs has been much lower than expected.



Lower UK share of renewables value

Another key reason why jobs growth has not been as great as forecasts suggested, is because a large proportion of the value created by renewables development in the UK has not been captured by UK companies. According to the Offshore Wind Industry Council (OWIC), of the estimated £4.8 billion value of the offshore wind market in the UK in 2016, only around 33%, or £1.6 billion went to UK firms.[11]

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[9] CCC (2019) 'Net Zero: the UK's contribution to stopping global warming' https://www.theccc.org.uk/wp-content/uploads/2019/05/Net-Zero-The-UKs-contribution-to-stopping-global-warming.pdf (p179-180)

[10] [10] Wilton Engineering/Michael Fallon (2018) 'Winning Locally, Going Global' https://www.recognitionpr.co.uk/pdfdownloadfile/Winning%20Locally%20Going%20Global%20by%20Sir%20Michael%20Fallon.pdf

[11] OWIC (2018) Offshore Wind Industry Prospectus https://cdn.ymaws.com/www.renewableuk.com/resource/resmgr/publications/catapult_prospectus_final.pdf

Earlier studies suggested similarly low levels (or lower) of UK content in offshore wind; a 2011 study by BVG Associates found that only 32% of expenditure on the Robin Rigg windfarm went to UK firms[12], while press reports claimed UK content in the Thanet and London Array windfarms was even lower, at 20% and 10% respectively.[13]

RenewableUK claimed in a 2017 report that UK content in the offshore wind market was growing and had increased to 48%.[14] However, the RenewableUK report did acknowledge that less than 30% of capital expenditure (manufacturing and construction/installation work) was spent in the UK, and according to the OWIC, this amounts to more than half (56%) of all spending on offshore wind projects and is a key source of highly-skilled, high-value employment.

A key point to note is that determining what counts as 'UK content' is not always straightforward, and where UK-headquartered firms have been identified as winners of contracts, this does not always translate into more high-quality jobs in the UK. The 2018 report by former Defence Secretary Michael Fallon into UK content in the offshore wind sector warned that the numbers can be misleading; UK firms might be awarded top-level contracts (and content might then be recorded as 'UK'), but then subcontract work to overseas firms.[15]

The same report also warned that the relentless drive to cut costs as subsidy payments are reduced will create an ever more challenging environment for the supply chain (where most UK companies are located), as primary project developers demand greater cost savings from their suppliers in order to hit cost reduction targets.

Fallon's report highlighted another risk to UK renewables job growth in future. Currently, according to the RenewableUK figures, a significant proportion of operations and maintenance expenditure has been directed at UK companies based out of UK port hubs. However, as windfarms move increasingly further offshore it is not a given that this pattern will continue, as some of these farms will be closer to port hubs in the Netherlands or Belgium.

Recent press reports, as well as the report by the Scottish TUC, have highlighted some of the ways that renewables jobs have been 'offshored'.[16] There has been extensive criticism of the UK government's failure to support UK-based manufacturing (and jobs) in renewables, especially for offshore wind, while work has instead gone to firms who either enjoy

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[12] BVG Associates (2011) 'UK content analysis of Robin Rigg Offshore Wind Farm' https://www.eonenergy.com/~/media/PDFs/Generation/wind/offshore/EONRobinRiggUKcontentreportOctober2011.pdf

[13] Guardian (2010) 'British firms miss out as world's biggest offshore windfarm opens off UK coast' https://www.theguardian.com/environment/2010/sep/23/british-firms-worlds-biggest-windfarm

[14] RenewableUK (2017) Offshore Wind Industry Investment in the UK https://cdn.ymaws.com/www.renewableuk.com/resource/resmgr/publications/Offshore_Wind_Investment_V4.pdf

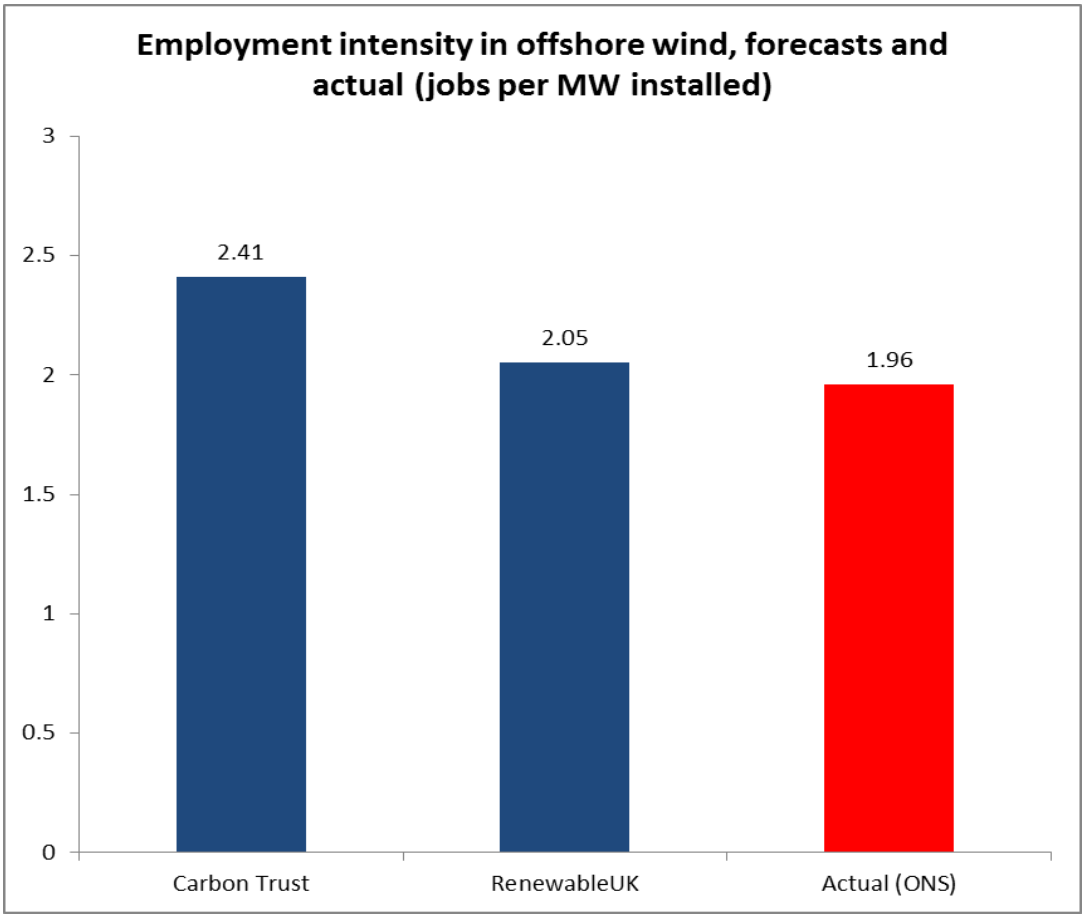
[15] Wilton Engineering/Michael Fallon (2018) 'Winning Locally, Going Global' https://www.recognitionpr.co.uk/pdfdownloadfile/Winning%20Locally%20Going%20Global%20by%20Sir%20Michael%20Fallon.pdf

[16] STUC (2019) 'Broken Promises and Offshored Jobs' https://www.gmb.org.uk/sites/default/files/Broken%20promises%20and%20offshored%20jobs%20report.pdf; BBC (2019) 'Offshore wind offshored' https://www.bbc.co.uk/news/uk-scotland-scotland-business-47511310

substantial state support (such as Spain's Navantia) and/or are willing to absorb substantial losses on contracts.

One prominent example of this was the contract awarded to UAE-based firm Lamprell to manufacture 60 foundation jackets for Scottish Power Renewables' East Anglia One project, at the Hamriyyah shipyard in Sharjah. Lamprell admitted that this contract had entailed substantial losses for the company, estimated at almost $100 million in 2017.[17] Despite these huge losses, Lamprell beat Fife-based manufacturer BiFab to win a new contract to fabricate more foundation jackets, this time for the Moray East windfarm.[18]

The fact that only a minority of the value created by offshore wind deployment in the UK has been captured by UK firms is likely a factor in why actual jobs intensity (jobs per MW installed) of offshore wind has been significantly lower than many earlier forecasts implied.[19]



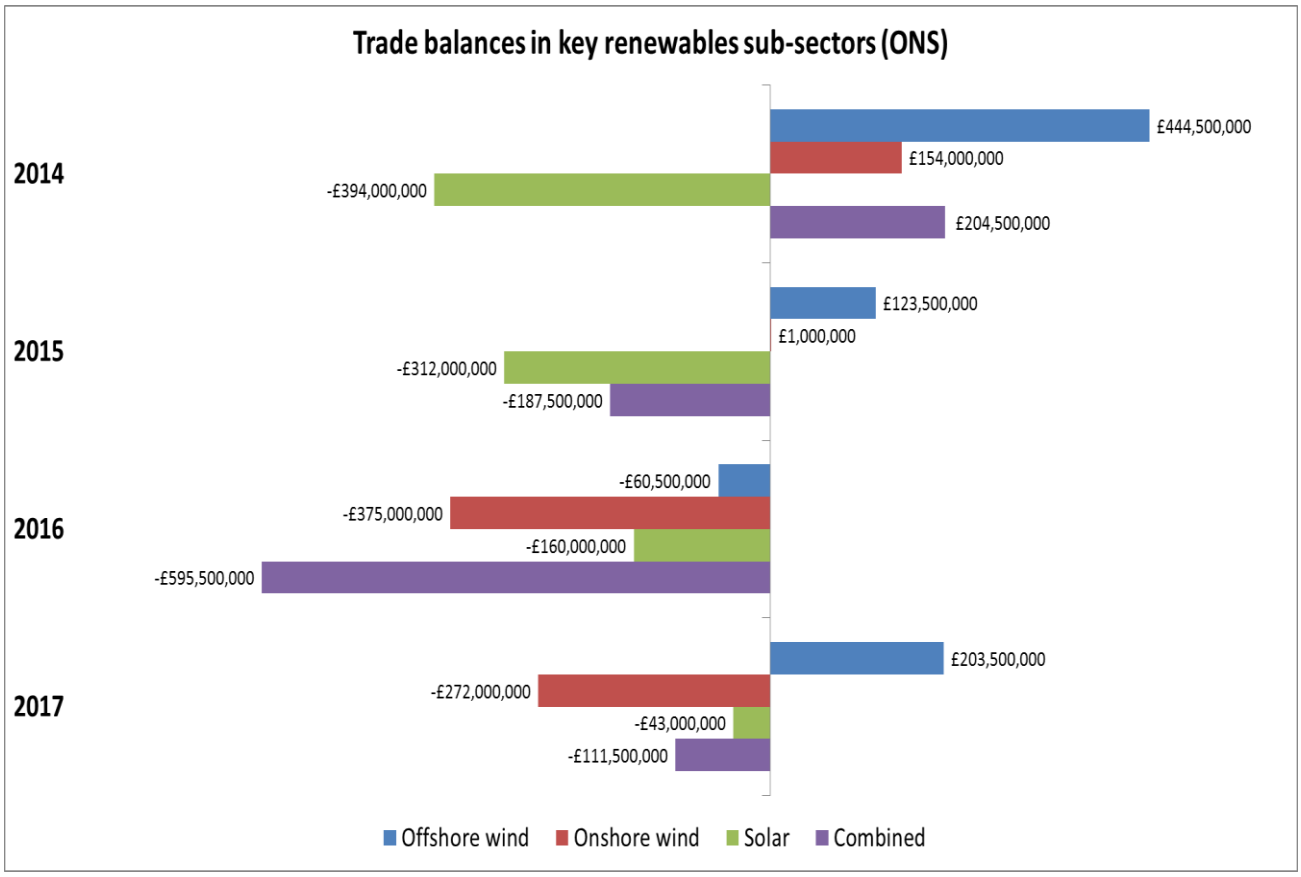
Underscoring this point further, data from ONS shows that the combined wind and solar sectors in the UK have had a trade deficit since 2015. Offshore wind has generally fared better, but both onshore wind and solar have imported more goods and services than they

[17] Lamprell Annual Report (2017) https://www.lamprell.com/~/media/Files/L/Lamprell-v3/reports-and-presentations/2017/annual-report-2017.pdf

[18] Energy Voice (2019) 'Patience wearing thin with opportunistic wind farm developers' https://www.energyvoice.com/otherenergy/194734/patience-wearing-thin-with-opportunistic-wind-developers-warns-wheelhouse/

[19] Only a few of the forecasts referenced at the start of this briefing gave sufficient detail to allow a jobs intensity figure to be calculated.

have exported, adding credence to the idea that value creation and jobs are happening outside the UK.[20]



Are 'Green Jobs' also good jobs?

It is not just the lack of jobs growth in the renewables sector that is an issue; there are also grounds for concern about the quality of at least some of the jobs that have been created. One high-profile example is in offshore wind installation, where journalists and union campaigners revealed that migrant contractors brought in on temporary visas to work on SSE's £2.6 billion Beatrice windfarm project were being paid well below the minimum wage.[21]

There have also been concerns raised about health and safety practices in the renewables sector as well. According to published health and safety data, UK offshore wind has an injury rate that is roughly four times higher than the UK offshore oil and gas sector. Disappointingly, this data is only available for offshore wind up to 2016; since then, G+, the offshore wind trade body, has stopped reporting UK-only figures for health and safety and instead lumps them in with a Europe-wide total.[22]

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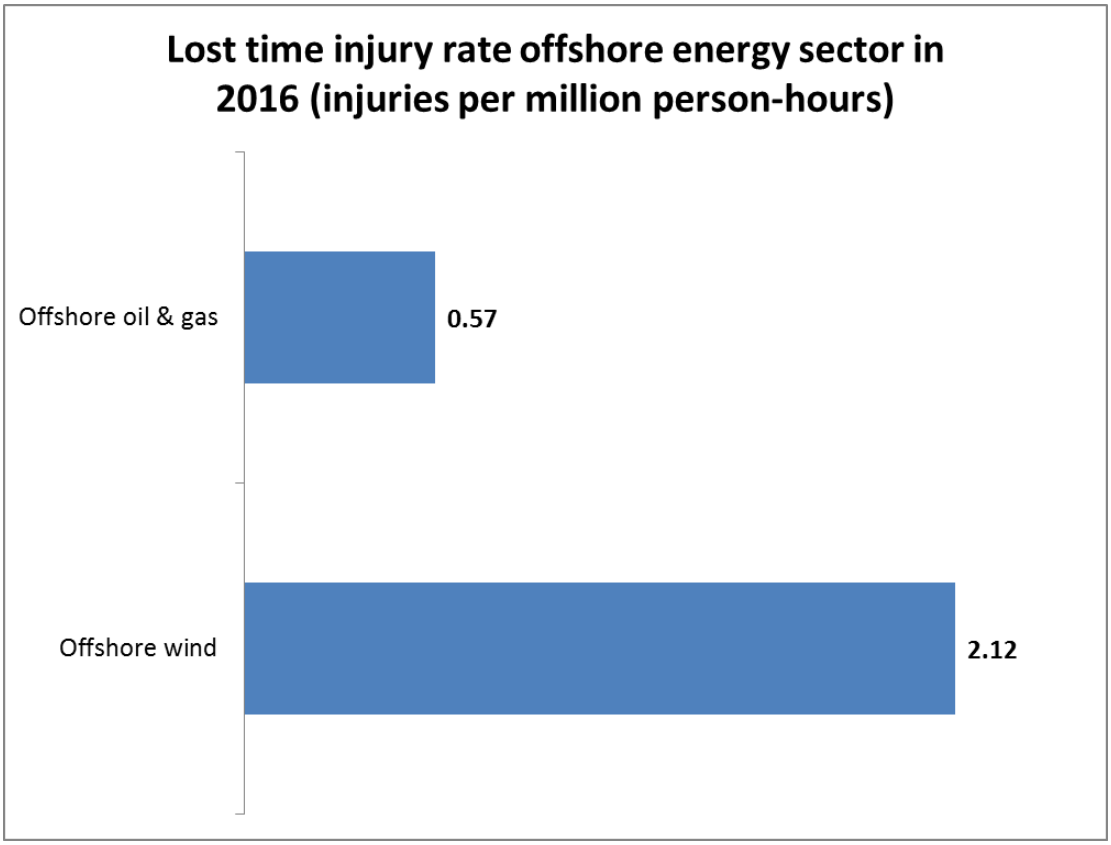
[20] ONS (2019) 'Survey of the Low Carbon and Renewable Energy Economy' (https://www.ons.gov.uk/economy/environmentalaccounts/bulletins/finalestimates/2017

[21] Guardian (2018) 'Migrants building £2.6bn windfarm paid fraction of minimum wage' https://www.theguardian.com/uk-news/2018/oct/21/migrants-building-beatrice-windfarm-paid-fraction-of-minimum-wage

[22] These figures are taken from the relevant industry reports: GPlus (2017) 'UK Offshore wind health and safety statistics 2016 report' https://publishing.energyinst.org/__data/assets/file/0007/330964/UK-Offshore-wind-health-and-safety-statistics-2016-report.pdf; Oil & Gas UK (2017) 'Health and Safety Report 2017'



Figures like this paint a worrying picture about conditions in the sector, and highlight a further issue – the relative lack of a union presence in renewables. Whilst the broader UK energy sector generally continues to benefit from above-average unionisation rates and the widespread use of collective bargaining, this is generally not the case in renewables. In fact, renewables employers have often been extremely reluctant to engage in constructive dialogue with worker organisations or allow full access to union organisers.

This lack of engagement with unions urgently needs to change if the quality of employment in renewables is to be improved, as well as the sector's record on health and safety.

Making renewables jobs a reality

This briefing has argued that a private sector-led approach to renewables policy has led to a lower volume of projects and less UK content in those projects, which in turn is why forecasts for renewables jobs growth have so far proved overly optimistic. It has also suggested that there are grounds for concern about the quality of at least some of the jobs that have been created.

So what needs to change if we are to create a lot more high-quality jobs in renewables?

1. **A real green industrial strategy**: The UK's experience to date is evidence that leaving renewables development to the private sector will not deliver the volume of projects we need to see to hit our climate targets, or realise the full potential of green jobs growth. There is a clear need for the government to take a much more active and interventionist role in the sector, helping to support supply chain companies, especially in manufacturing. Indeed there is a strong case to be made for a state-supported renewables developer, which could more effectively foster UK supply chain companies; work with regional authorities to direct project spending

more effectively; and leverage the lower cost of public borrowing to reduce project costs.

2. **More effective and equitable use of public money**: Billions of pounds of public money are being spent on subsidies to private renewables developers every year. This is primarily being paid for through consumer energy bills, effectively a highly regressive form of taxation. Yet, relatively little of that spending is returning to UK plc in the form of jobs and local investment, while consumer energy bills continue to grow. There is a strong case for rethinking how we fund new renewables, especially if we are to increase the volume of renewables projects being deployed. The government should therefore seriously consider funding renewables deployment as part of normal government expenditure – this would be much more equitable and would unlock far greater resources to spend on renewables projects.
3. **Social partnership and greater trade union access**: The best way to ensure well-paid, high quality, and safe employment standards in the renewables sector is to allow workers to organise and join unions. Trade unions should be guaranteed full rights of access across the renewables sector, and given a central role in supporting the development of the industry through a social partnership approach with employers. As a minimum, if the current subsidy structures are maintained, the government should require companies seeking to bid for Contracts for Difference (CfDs) to sign up to minimum labour standards, including full recognition of trade unions.