

Research Bulletin 22/7 | Skills Demanded by the Offshore Wind Sector

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Summary

As countries around the world make the move to greener sources of energy to combat issues such as climate change and dependency on energy imports, particularly given the volatility of energy supplies as highlighted by the war in Ukraine, the Offshore Wind Sector is at the forefront. By using the latest statistics and insight from Burning Glass Labour Insightⁱ, a web-scraping tool of online job postings, this article analyses how the sector is developing and the skills it requires from job seekers across the UK.

Overall, statistics reveal that the Offshore Wind Sector is thriving in the UK with the sector growing in its share of energy produced. The UK government has set out ambitious plans for growing the Offshore Wind Sector including its Offshore Wind Sector Deal which aims to deliver 50 Gigawatts (GW) of installed capacity by 2030. More specifically to Northern Ireland, the most recent Energy Strategyⁱⁱ has set a target of at least 70% of electricity consumption in 2030 to be powered by renewables (since raised to 80% by Climate Change Act (Northern Ireland) 2022), along with an action plan to deliver 1 GW of offshore wind by 2030. The ambition for offshore wind is displayed by the North Channel Wind projectⁱⁱⁱ, which aims to install between 20-30 wind turbines off the eastern coast of Northern Ireland, capable of generating 400MW of electricity by 2030.

Key takeaways from analysing the UK jobs market for the sector using the keyword phrase 'Offshore Wind' reveals a high requirement for degree-level qualifications and engineering professionals to work in the sector for companies such as BP and SSE.

Introduction

There are currently no wind farms deployed in Northern Ireland waters; however Northern Ireland has developed an Offshore Wind supply chain sector, servicing projects across the UK, Republic of Ireland and internationally. The Offshore Wind sector is one that offers future potential but to fully capitalize on this, policy-makers will need to ensure that there is a supply of workers with the right skills to facilitate the growth of the Offshore Wind Sector. This Bulletin uses a two-stage approach to understand what skills are required from potential workers in the sector:

- Firstly, using Burning Glass - a software package that provides analytics of job markets to assess trends in the sector across the whole of the UK (as the sector is more developed in Great Britain than in Northern Ireland), using the keyword phrase 'Offshore Wind'; and

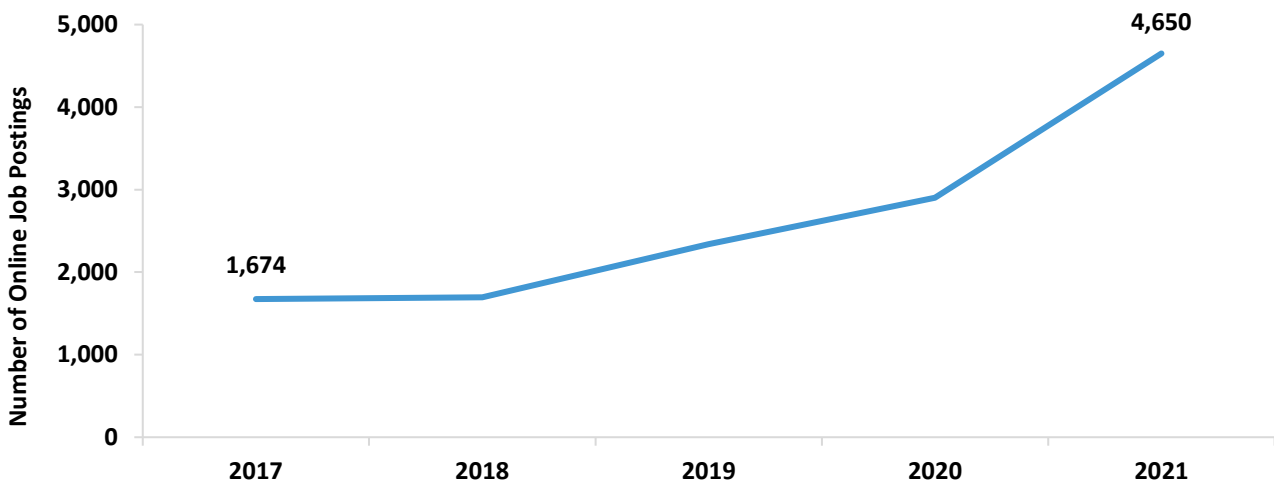
- Secondly, desk-based research has been conducted to understand government ambitions for the Offshore Wind Sector. This involved reading various government proposals and strategies in the UK and further afield.

Tracking Online Job Advertisements

Time Series Trends

The number of online job advertisements featured on Burning Glass containing the keyword phrase 'Offshore Wind' has increased over time in the UK, as illustrated in Figure 1. Since 2017, 'Offshore Wind' job postings have increased in the UK by almost 180%, increasing at a much faster rate than the growth in overall job postings (6%).

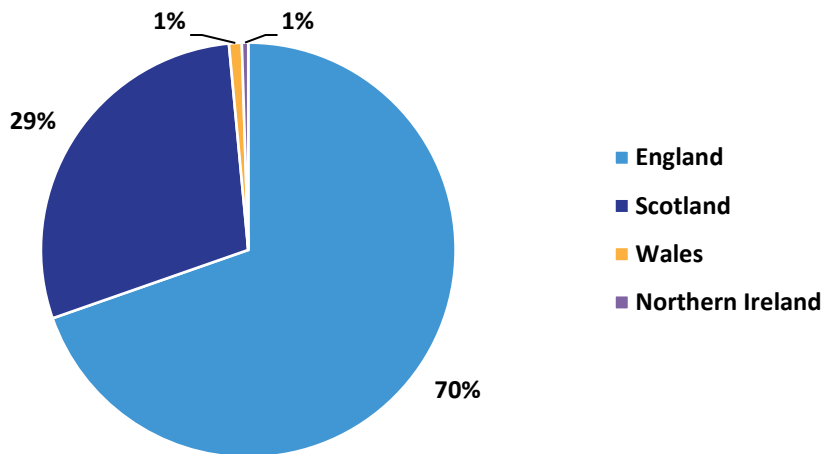
Figure 1: Online Job Adverts using keyword phrase 'Offshore Wind' in the UK, 2017-2021



Source: Burning Glass Technologies

When examining online job postings that mentioned 'Offshore Wind' by UK region in 2021, England makes up the majority of job advertisements, accounting for 70% of postings. Scotland follows with 29% of postings while Northern Ireland and Wales had the least opportunities with less than 1% respectively, as illustrated in Figure 2.

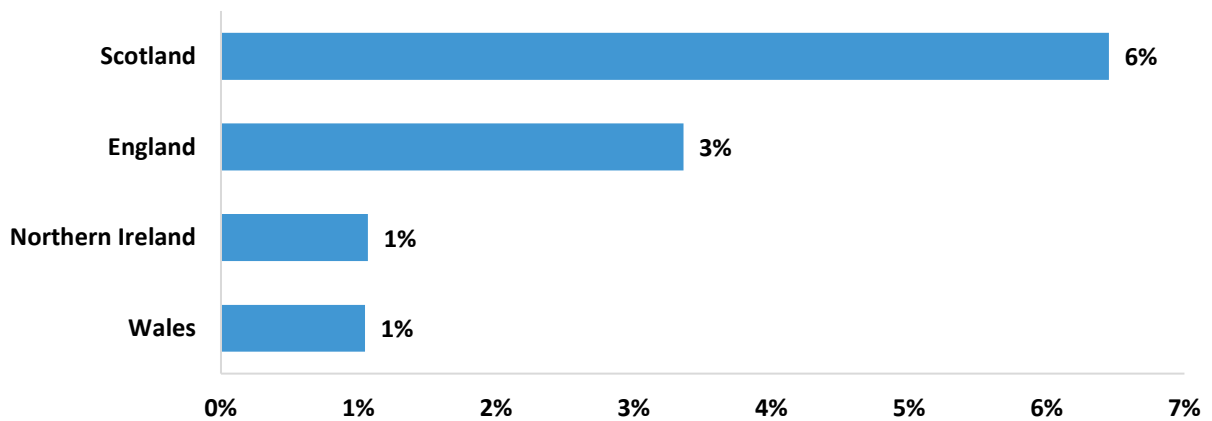
Figure 2: 'Offshore Wind' Job Posting Proportions, UK Regions, 2021



Source: Burning Glass Technologies

However, when examining the proportion of 'Offshore Wind' postings out of total postings in the Electric Power Generation, Transmission and Distribution sub-sector across each of the UK countries in 2021, Scotland had the largest representation of 'Offshore Wind' postings at 6%, followed by England (3%), with both Wales and Northern Ireland at 1%, as illustrated in Figure 3.

Figure 3: 'Offshore Wind' Job Postings by UK Country as a Proportion of Total Postings in the Electric Power Generation, Transmission and Distribution Sub-sector, 2021

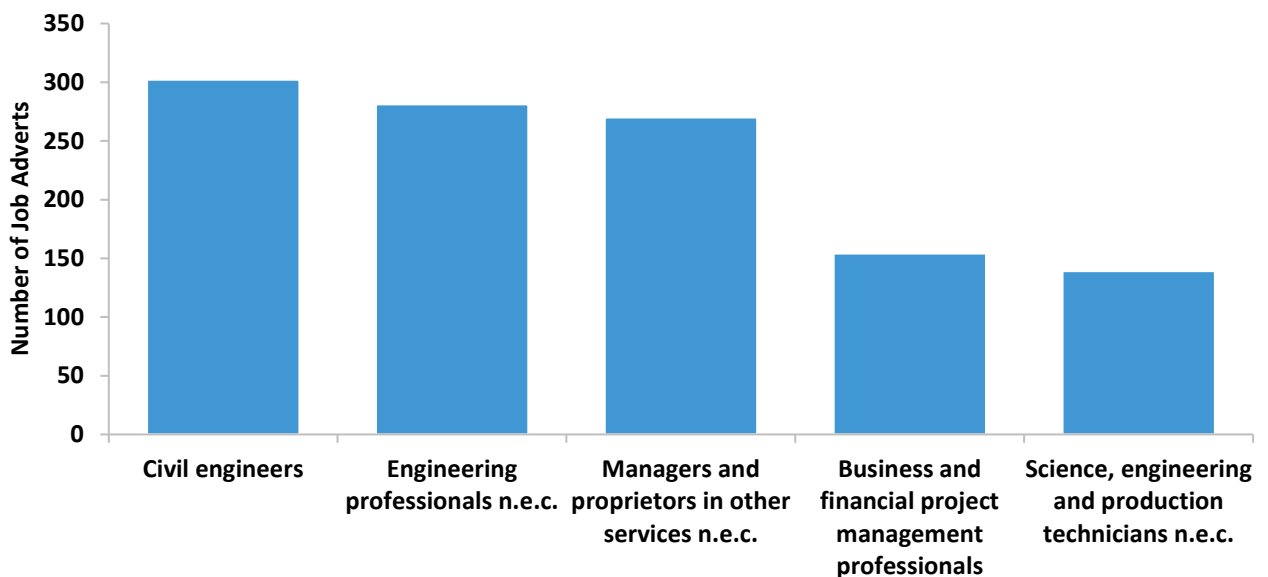


Source: Burning Glass Technologies

Top Occupations

Across the whole of 2021, the top occupations in 'Offshore Wind' job postings were mainly engineering-related with civil engineers being the top occupation, making up 7% of job postings in the sector. This contrasts with postings to the top occupations across all sectors in 2021, which were Programmers and Software Development professionals, followed by Nurses. The top 5 occupations for job postings with the phrase 'Offshore Wind' are illustrated below.

Figure 4: Top 5 Occupations Featuring the Phrase 'Offshore Wind' in 2021, UK

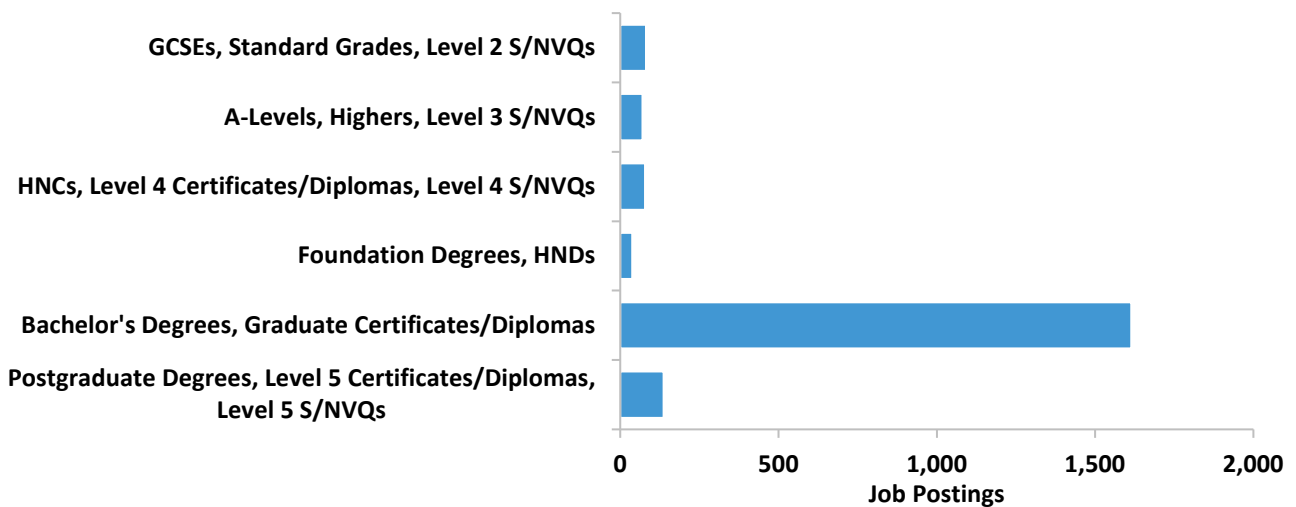


Source: Burning Glass Technologies

Educational Requirements

When examining the educational requirements for 'Offshore Wind,' Figure 5 illustrates the importance of attaining a degree level qualification to work in the sector with 80% of online job adverts requiring degree-related qualifications where data was available. This is higher than the overall UK position, where only 50% of job adverts across all areas required degree-related qualifications. The subjects required largely reflect the top occupations, with four of the top five subjects Engineering related (Engineering, Electrical Engineering, Mechanical Engineering and Civil Engineering) and accounting for 50% of postings where a subject was specified.

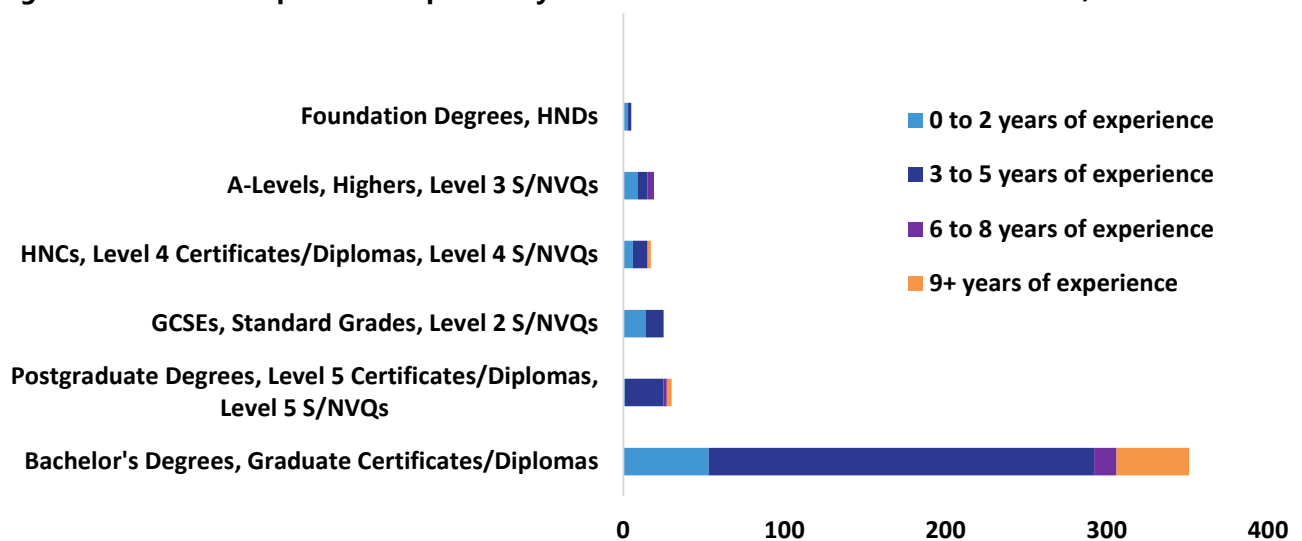
Figure 5: Minimum Educational Requirements for 'Offshore Wind' Postings, UK 2021



Source: Burning Glass Technologies - Note: 58% of data missing

For those UK 'Offshore Wind' online job adverts in 2021 that required job seekers to have a degree-related qualification, 85% required at least 3 years' experience and 13% required at least 9 years' experience where this information was specified as illustrated in Figure 6.

Figure 6: Amount of Experience Requested by Educational Attainment for 'Offshore Wind', UK 2021

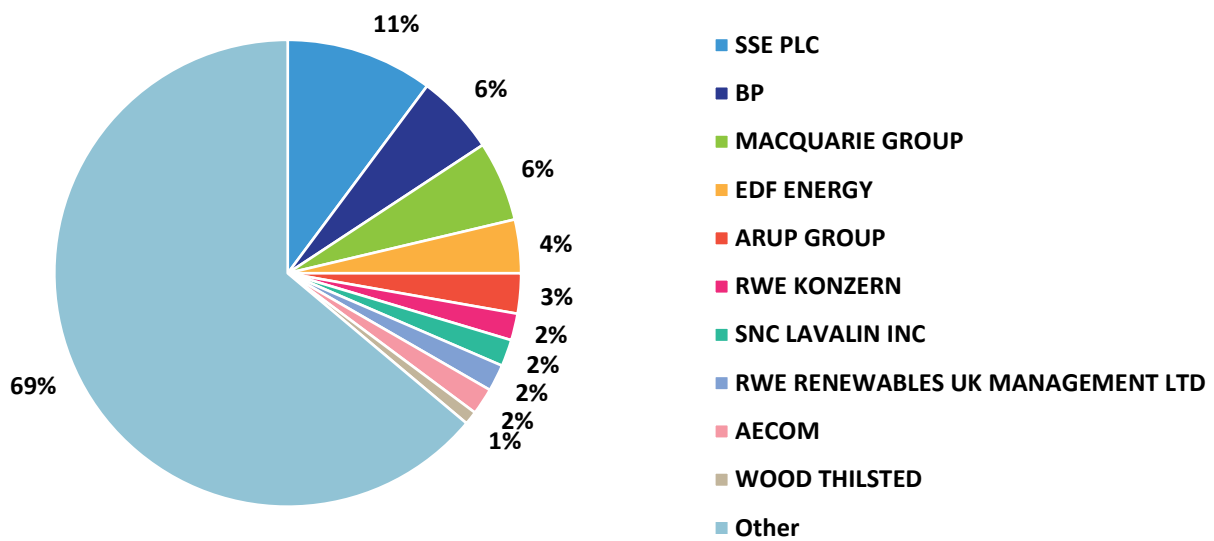


Source: Burning Glass Technologies - Note: 90% of data missing

Employers

In 2021, out of the postings where an employer was specified, the employer with the highest amount of job postings across the UK 'Offshore Wind' job postings was SSE, accounting for 11% of all job adverts followed by BP (6%) and Macquarie Group (6%). At a Northern Ireland level, SSE was also the largest employer, accounting for 28% of total postings where an employer was specified (albeit this was from a much smaller base). The employers with the most postings at a UK level are illustrated in Figure 7.

Figure 7: Top 10 Employers for 'Offshore Wind', UK 2021



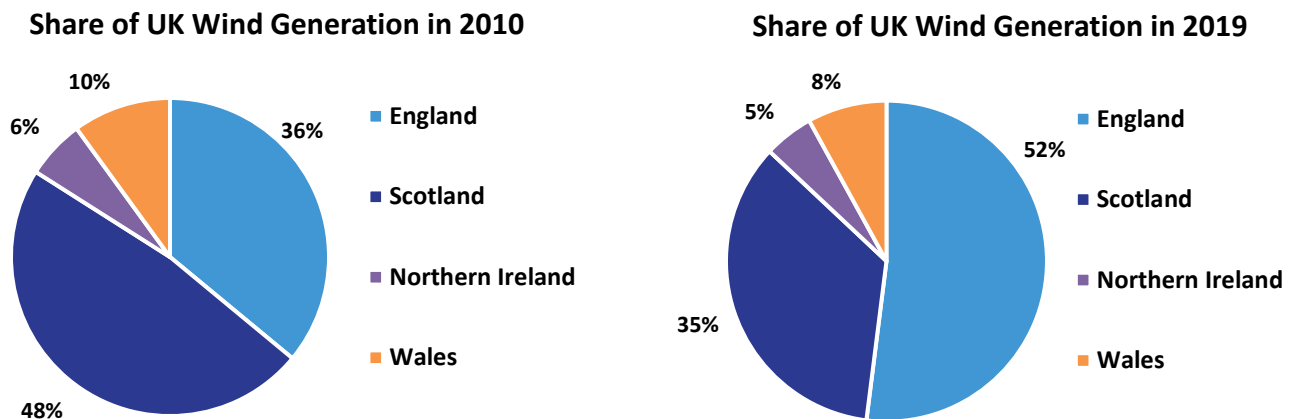
Source: Burning Glass Technologies; please note that 69% of postings did not specify an employer.

Wind Generation in the UK

Figure 8 shows the share of wind generation (including offshore wind) by UK country in 2010 and 2019^{iv}. England, which accounted for 37% of wind generation in 2010 (behind Scotland at 48%), recorded the greatest share of wind generation in 2019 (52%). This is followed by Scotland which makes up 35%. Northern Ireland, made up 5% in 2019, well above its relative size to the UK (relative to its population size).

However, in recent months, developer interest into offshore wind generation in Northern Ireland has increased. The "North Channel Wind" project is an example of a proposed development which hopes to put 20-30 turbines off the Northern Ireland coast in a £1bn deal. The project has an estimated completion date of 2029 and looks to power 500,000 homes as well as creating over 700 green jobs. The project will be built across two separate sites located between 10km and 25km off the east coast of Northern Ireland^v.

Figure 8: Share of UK Wind Generation in 2010 and 2019



Source: Wind Power Special Feature GOV

Table 1 shows that offshore wind energy is now on par with Onshore in terms of energy produced with wind now making up 20% of the UK's energy generation. Offshore wind has seen an increase of over 9% in its share of total energy generation since 2010.

Table 1: Shares of Total Energy Generation, UK, 2010 to 2019

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Onshore	1.9%	2.9%	3.4%	4.7%	5.5%	6.7%	6.1%	8.5%	9.1%	9.9%
Offshore	0.8%	1.4%	2.1%	3.2%	4.0%	5.1%	4.8%	6.2%	8.0%	9.9%
Total	2.7%	4.3%	5.5%	7.9%	9.5%	11.9%	11.0%	14.7%	17.1%	19.8%

Source: Wind Power Special Feature GOV

Government Strategies for Offshore Wind

Northern Ireland

The Energy Strategy for Northern Ireland, published in December 2021, set the policy direction for increasing renewable energy from a diverse range of renewable sources, including offshore wind and marine renewables, and achieving a target of at least 70% of electricity consumed in Northern Ireland by 2030 (since raised to 80% by the Climate Change Act (Northern Ireland) 2022). The Energy Strategy Action Plan 2022^{vi} has an action to develop an action plan to deliver 1 GW of offshore wind from 2030.

Supporting a greener, sustainable economy is a key element of the Department for the Economy's economic vision for a 10x economy^{vii}. Such is the importance placed on environmental sustainability that one of the three pillars used to measure the success of the vision is the 'Sustainable Growth' pillar (the other pillars are 'Innovation Led Economic Growth' and 'Inclusive Growth'.^{viii} In line with the Climate Change Act, the 10X objective for sustainability is to power 80% of electricity consumption with renewable sources by 2030, and to double the size of Northern Ireland's low carbon and renewable energy economy to more than £2bn turnover^{ix}.

UK

The UK has an Offshore Wind Sector Deal^x which is a long-term commitment to maximise offshore wind development. Subject to costs coming down, this commitment could see offshore wind contributing up to 50GW of generating capacity by 2030. Sector estimates show that deploying up to 50GW of installed capacity by 2030 would support 90,000 jobs, many of which are forecast to be high-skilled and high-wage. The sector is also taking action to increase the representation of women in the workforce to a third by 2030, (up from 16% in 2018) with a desire to reach a more stretching ambition of 40%. Further proposals for the sector in the British Energy Security Strategy^{xi} include reducing consent times; implementing a new offshore wind environmental improvement package; introducing an offshore wind acceleration taskforce; and establishing a fast-track planning route for priority cases.

As well as developing the infrastructure needed, focus is also on developing skills. Skills training needs analysis and an accreditation framework to broaden the UK Offshore Wind skills base: the sector will establish an Investment in Talent Group, supported by a skill professional, who will identify skills needs across the sector, and develop curricula and accreditation to deepen the skills base. This includes developing an Offshore Energy Passport (recognised outside the UK) to accredit Offshore workers and facilitate job-mobility between offshore renewable and extractive industries. It will also develop a mechanism to facilitate the transfer of former military personnel with appropriate skills into the industry.

Scotland

As part of the UK ambition, the Scottish government has also published its intentions to grow offshore wind capacity to 11 GW by 2030^{xii} through launching an '*Offshore Wind Policy Statement*'^{xiii}. The most recent ScotWind offshore leasing auction, completed in January 2022, offered the right to specific areas of seabed to produce offshore wind power to 17 projects with a combined total generating capacity of 25GW^{xiv}.

The Scottish Government will work closely with key partners, such as the Energy Skills Alliance, which is working to produce a clear forecast of energy skills demand up to 2050^{xv}, deliver an integrated energy apprenticeship scheme by 2022 and develop a roadmap for aligning training and standards by 2021. This alignment of training and standards across energy sectors is crucial to allowing offshore wind to benefit from and utilise the skills and expertise of the oil and gas industry. Removing the need for the workforce to obtain additional certification to transfer into other energy sectors, will be a key enabler for companies to diversify their business portfolios and to meet the required skills demand.

Republic of Ireland

The Republic of Ireland has also set out its ambitions for the Offshore Wind Sector. Its Climate Action Plan^{xvi} sets out its plan to grow the Offshore Wind Sector to at least 5 GW by 2030. An Offshore Renewable Energy Development Plan (ORED II) will also be completed to quantify the energy potential in Ireland's maritime area. A new Maritime

Area Planning (MAP) bill is also proposed and once enacted will put in place a coherent planning regime for the development of offshore renewable energy.

European Union

As the world moves to more renewable energy sources, offshore wind has caught the attention of governments across the globe to produce renewable energy and reduce reliance on foreign energy with many governments launching strategies to grow the sector. This includes the European Commission that has launched: *'an EU Strategy to harness the potential of offshore renewable energy for a climate neutral future'* ^{xvii}. Within this, it has ambitions to grow offshore wind capacity to at least 60 GW by 2030 and 300 GW by 2050, up from 12 GW in 2020. It believes by doing this, it can deliver major benefits in terms of jobs and growth. One of its key actions is to use existing funding schemes to create new jobs and roll out reskilling/upskilling schemes.

Conclusion

In conclusion, there is evidence of a growing offshore wind sector across the UK, with plans for Northern Ireland to be involved in this in the future through emerging proposed projects, such as North Channel Wind. Analysing job trends across the UK reveals that to work in the sector generally requires attaining a degree-level qualification with subjects demanded in engineering-related fields, with the top employers hiring including SSE and BP.

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For further information or queries please contact analyticalservices@economy-ni.gov.uk

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- i [Emsi - Labor Market Analytics & Economic Data \(economicmodeling.com\)](#)
 - ii [The Path to Net Zero Energy. Safe. Affordable. Clean. \(economy-ni.gov.uk\)](#)
 - iii [North Channel Wind](#)
 - iv [Wind powered electricity in the UK.pdf \(publishing.service.gov.uk\)](#)
 - v [North Channel Wind](#)
 - vi [The Path to Net Zero Energy. Safe. Affordable. Clean. \(economy-ni.gov.uk\)](#)
 - vii [10X Economy - an economic vision for a decade of innovation \(economy-ni.gov.uk\)](#)
 - viii [Measuring Success - 10X Metrics to achieve a 10X Economy \(economy-ni.gov.uk\)](#)
 - ix [10X Vision - Next Steps for Implementation \(economy-ni.gov.uk\)](#)
 - x [Offshore wind Sector Deal - GOV.UK \(www.gov.uk\)](#)
 - xi [British energy security strategy - GOV.UK \(www.gov.uk\)](#)
 - xii [Increased offshore wind ambition by 2030 - gov.scot \(www.gov.scot\)](#)
 - xiii [Offshore wind policy statement - gov.scot \(www.gov.scot\)](#)
 - xiv [Offshore wind development - gov.scot \(www.gov.scot\)](#)
 - xv [Chapter 5: Economic Opportunities – Skills - Offshore wind policy statement - gov.scot \(www.gov.scot\)](#)
 - xvi [gov.ie - Climate Action Plan 2021 \(www.gov.ie\)](#)
 - xvii [Offshore renewable energy \(europa.eu\)](#)